

# Pilot ecosystem core accounts report

Deliverable 3.3

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### PREFACE

The Horizon 2020 MAIA (Mapping and Assessment for Integrated ecosystem Accounting) Coordination and Support Action aims to mainstream natural capital and ecosystem accounting (NCA) in the EU Member States (MS). MAIA uses the System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA-EA) as the conceptual and methodological basis for NCA. The SEEA-EA is a system for NCA developed under auspices of the UN Statistical Commission and provides a consistent framework for analysing and storing information on ecosystem assets and flows of ecosystem services. In MAIA, a flexible approach is followed, allowing for adaptation of the SEEA-EA framework to the conditions of the individual EU MS. The MAIA project ensures mainstreaming of NCA within the 10 participating countries (nine in the EU and Norway).

The overall objective of WP3 is to ensure mainstreaming of NCA (based on the SEEA-EA guidelines) and alignment with identified policy needs (from MAIA WP2) within the 10 MS that are participating in MAIA, on the basis of existing and newly initiated pilot account projects in each participating country. The basic rationale behind WP3 is that testing and mainstreaming NCA approaches are most effectively done on the basis of concrete accounts, where available methods (principally, but not limited to the SEEA-EA guidelines and the central framework) are tested, applied and evaluated jointly by a range of relevant partners in each participating MS.

The previous work on identifying the state-of-the-art of Natural Capital and Ecosystem Accounting in the participating MS and generating a holistic overview on the progress (including past, present and future activities) of the Natural Capital Accounting was published in the MAIA Deliverables D3.1 and D3.2, respectively. Besides, in order to communicate and disseminate the valuable information on the NCA progress in the MAIA MS, so called "Country Fact Sheets" have been developed and published open-access on the MAIA website. In order to facilitate the mainstreaming of the natural capital and ecosystem accounting in the countries participating in MAIA, the individual national efforts need to be inspected in more detail. Thereby, the aim was in particular to identify the actual contribution of the MAIA project (i.e. coordination and support) on the generation of the various accounts. In this context, in this Deliverable (D3.3), the focus lies on the (through Task 3.3 defined) MAIA-supported accounts. Aiming at mainstreaming the NCA progress in the participating countries, we focus on the specifics of these MAIA-supported accounts, identifying aspects such as the input datasets, applied methodologies, utilized software as well the state of implementation.

# SUMMARY

The overall objective of WP3 is to ensure mainstreaming of NCA (based on the SEEA-EA guidelines) and alignment with identified policy needs (from MAIA WP2) within the MAIA MS. The foundation for that undertaking are the existing and newly initiated pilot account projects in each participating MS. In order to facilitate the mainstreaming of the natural capital and ecosystem accounting in the countries, the individual national efforts have been inspected in more detail. Thereby, the aim was in particular to identify the actual contribution of the MAIA project (i.e. coordination and support) on the generation of the accounts and the overall NCA progress in the MS as well as the identification of account specifics. In order to obtain the relevant information for each MS, an overview table on all existing ecosystem accounts was generated. Therefore, the Country Fact Sheets, the created WP3 NCA database, the results of the surveys/ queries in spring and summer 2021 as well as presentation slides from MAIA events and the European Ecosystem Services Partnership European Conference ESP2021 were harnessed as sources. The tables allow for the inclusion of different aspects with reference to potential MAIA contributions (such as funding, personalized support/consultancy and/or support through diverse MAIA activities - e.g. webinars and workshops). The information on the MAIA contribution was collected/filled in by the corresponding country-specific MAIA partners. Aiming at mainstreaming the NCA progress in the participating countries, we focused on the specifics of these MAIA-supported core accounts, identifying aspects such as the input datasets, applied methodologies, utilized software as well the state of implementation. In order to guarantee a comprehensive and consistent reporting on these accounts, accounting tables have been generated and filled for all respective ecosystem extent, ecosystem condition, ecosystem services (in biophysical and monetary terms) and ecosystem asset accounts. Thus, in this Deliverable (D3.3) we provide a general overview on the collected information with regard NCA implementation in each MAIA MS as well as very specific and technical reporting on the identified MAIA-supported core accounts.

## 1. INTRODUCTION

In this Deliverable (D3.3), we focus on the (through Task 3.3 defined) "MAIA-supported accounts". We will report specifically on these accounts. Aiming at mainstreaming the NCA progress in the participating countries, we will focus onto account specifics, such as the input datasets, applied methodologies, utilized software, state of implementation and outputs. In the following section, insights will be given on the underlying methods and the utilized data (Chapter 2). We outline the whole process including the progression of the data collection and elaboration. Afterwards we give a general overview on the NCA progress in the MAIA countries, differentiating between MAIA-supported and MAIA-independent accounts (Chapter 3.1), before we focus on the MS specific reports (Chapter 3.2). For each MAIA MS we briefly introduce the overall NCA progress followed by a specific and technical reporting on the identified MAIA-supported accounts. For each of these MAIA-supported accounts, detailed tables have been included in the Annex (Chapter 6).

### 2. METHODS AND DATA

This Deliverable is based upon a variety of activities from WP3. It builds on the various past engagements and deliverables as well as current activities. Based on the analysis and outcomes of the state-of-the-art of NCA implementation assessment done for MAIA Deliverable D3.1 a diverse level of implementation of the five SEEA-EA core accounts were observed. The interviews and follow-up exchanges, which were performed in the former reporting period (01/-04/2020), were evaluated and the results were interpreted in order to validate the former NCA data from Task 3.1 and to generate a holistic overview on the progress of the Natural Capital Accounting in each MAIA MS. Subsequently, the information was processed and published in the form of Deliverable 3.2. In order to ensure the actuality of the collected information in the MAIA countries, several follow up activities have been executed. Starting in spring last year (04/ - 05/2021), when an online survey was send out to all MAIA countries. Within the survey, the focus was on (i) a comparison between the originally proposed accounts and the actual NCA progress and (ii) updates with regard to the NCA progress in each MS. Whenever mismatches between the originally proposed accounts and actually on-going NCA progress were identified, an explanation was inquired for said differences from the MAIA countries. Also, it was inquired whether or not the countries were still planning on implementing these accounts in the future. The results of the

survey were processed and a presentation on the NCA progress in the MAIA countries was held during the MAIA workshop "Advancing Ecosystem Accounting in Europe" on 11th May 2021. In addition to that, an additional email-based query on updates and changes in the MS-specific NCA progress was send out in September 2021.

In a next step for each MS, an overview table on all ecosystem accounts was generated. The Country Fact Sheets, the WP NCA database, the results of the surveys/ queries in spring and summer as well as presentation slides from MAIA events and the Ecosystem Services Partnership European Conference ESP2021 were considered as sources for the generation of the tables. In the tables, the accounts were listed in individual rows. This structure allows for the inclusion of different aspect with reference to potential MAIA contribution. The following different aspects of MAIA contribution have been inquired:

- Did you receive funding from the MAIA project for the creation of this account?
- Did you receive personalized support from the MAIA project for the creation of this account?
- Did this account benefit from two or more MAIA project activities (such as webinars, workshops or the MAIA network)?
- Did this account benefit from only one MAIA project activity (such as webinars, workshops or the MAIA network)?

For each of these questions, respective tick boxes allow for the answers "yes" and "no". In order to ensure a timely and precise collection of the information required, the tables were send out to the corresponding MS-specific MAIA partners. They were asked to take the lead in contacting all relevant parties in their country (if required) and in collecting all the necessary information to answer the questions for each account in their country. In addition to the MAIA contribution, the shared excel document allowed for the correction and addition of further relevant accounts. In case a new account was added to the list, the MAIA contribution had to be identified in the form of the four questions listed above, as well. In December 2021, the results from the query were gathered, processed and integrated into the WP3 NCA database and reported in the form of a Milestone (M3.4). The newly gathered information were elaborated in order to identify the general MAIA contribution on the NCA progress in all MAIA countries, as well as to identify the MS specific NCA progress. Thereby, we differentiated between the specifics of the MAIA contribution. Based upon the newly gathered information, the accounts were classified into MAIA-supported accounts and MAIA-independent accounts, based upon the degree of MAIA contribution. All of the identified MAIA-supported accounts were then the focus of our subsequent work. Template tables for reporting on individual ecosystem core accounts were developed by the WP3 leads team. For each ecosystem core account type, thus, ecosystem extent, ecosystem condition, ecosystem services (in biophysical and monetary terms) as well as ecosystem asset account a specific accounting table template was created. We created an individual accounting table for each identified MAIA-supported account and used the extensive WP3 NCA database to pre-fill these accounting tables with all available information. Afterwards, the tables were send out to the corresponding MS-specific MAIA partners. They were asked to take the lead in contacting all relevant parties in their country (if required) and in (i) checking all pre-filled information, as well as, (ii) providing the missing information for each account/ accounting table. Of course, again, they were also encouraged to report any corrections and/or additions of further relevant accounts. In addition to that, each MAIA MS was asked to hold a country presentation during the MAIA consortium meeting and workshop in Madrid (from 28<sup>th</sup> – 30<sup>th</sup> of April, 2022). Within the country presentation, they were asked to (i) provide a general overview on the contribution of the MAIA project on the NCA progress in their country and (ii) give a detailed report on one specific MAIA-supported account. The WP3 leads team selected the accounts for that second part of the presentation beforehand in order to ensure a diverse programme where reports on each core account type would be present. The schedule allowed for a Q&A session after each country presentation in order to foster some additional knowledge exchange and to explore potential future networking opportunities. In addition the MAIA consortium meeting and workshops were used in order to get actively involved with the MAIA MS partners and discuss any unresolved questions with regard to the tasks of WP3. Based upon all of these activities this Deliverable has been composed by the WP3 leads team. In order to ensure the actuality and accuracy of the Deliverable, the final draft version has been shared with and corrected by all MAIA partners.

# 3. RESULTS

In the following section, the overall characteristics of the NCA implementation in MAIA MS will be introduced. Afterwards, insights into the NCA progress and specifics will be provided for each MAIA MS individually, whereby the focus lies on reporting on the MAIA-supported core accounts.

# 6.1. General characteristics of NCA implementation in MAIA countries

The overview table (Table 1) demonstrates that the WP3 activities of supporting and mainstreaming NCA activities based on the assessment of the state-of-the-art in the participating countries (MAIA Deliverables D3.1. and D3.2) was useful in order to create tailor-made solutions for each MS and the involved stakeholders. Generally, we can see a diverse NCA pattern throughout the MAIA countries. However, we can report that the MAIA project target to be involved in the development of at least one additional account per MS was met, as for each MAIA MS at least one MAIA-supported account can be identified. Most MAIA-supported accounts can be reported for the Ecosystem Extent Accounts, followed by the Ecosystem Condition and both Ecosystem Services Accounts. More detailed information will be provided in the following Chapters for each MAIA MS individually.

Table 1: Summary table of NCA progress per MS including an overview on contributions (support and coordination) of MAIA<sup>1</sup>.

				Core accounts		
MAIA countries	Status of the account	Extent account	Condition account	Biophysical ecosystem services account	Monetary ecosystem services account	Ecosystem asset account
Belgium	Finished					
	On-going /planned					
Bulgaria	Finished					
	On-going /planned					
Czech Republic	Finished					
	On-going /planned					
Finland	Finished				_	
	On-going /planned					
France	Finished					
	On-going /planned					
Germany	Finished					
	On-going /planned					
Greece	Finished					
	On-going /planned					
Netherlands	Finished					
	On-going /planned					
Norway	Finished					
	On-going /planned					
Spain	Finished					
	On-going /planned					

#### LEGEND

MAIA contribution MAIA-supported Account - national scale

MAIA-independent Account -national scale

Largest spatial scale achieved MAIA-supported Account – sub-national scale MAIA-independent Account – sub-national scale

<sup>&</sup>lt;sup>1</sup> It needs to be noted that this table only provides information on the ecosystem core accounts. Some MAIA MS have invested extensive work in the generation of thematic accounts (e.g. Norway on urban accounts).

# 6.2. Country-specific reporting on ecosystem core accounts

In the following section, the country specific NCA progress is broadly described for each MAIA member state. As introduction for each MS the general NCA progress is visualized as Box. In the box, both MAIA-supported and MAIA-independent account processes for core and thematic accounts are visualized. Subsequently, the MAIA-supported NCA efforts on the ecosystem core accounts are highlighted and for each MAIA-supported ecosystem core account a detailed report is provided.

### 6.2.1. Belgium

- Accounting on regional scale;
- Ecosystem extent account finalized;
- ES Accounts both in physical and
- Dis Accounts both in physical and monetary terms – finalized for some provisioning, regulating and cultural services;
- Ecosystem condition and thematic accounts ongoing;
- Ecosystem asset account not compiled, yet.





Box 1: Overview of NCA progress in Belgium (including MAIA-supported and MAIA-independent efforts).

Belgium has been working on the development of regional ecosystem extent, condition, biophysical and monetary service accounts for Flanders (the Northern region of Belgium). All of these accounts have been funded by the MAIA project. With the exception of the condition account, which will focus on water bodies and forest ecosystems (<u>Annex 6.1.2</u>), all of the accounts have been completed. Besides being funded by the MAIA project, the accounts have benefited through one or more MAIA activities each.

	Urban	Field	Grassland	Forest	Heathland	Dunes	Swamp	Freshwater	Esuarium	Marine
Ecosystem stock 2013	4517	4708	2431	1479	96	42	21	269	56	3467
Ecosystem stock 2016	4445	4679	2551	1479	87	41	20	260	55	3467
reduction	-68	-282	-406	-74	-10	-1	-3	-9	0	0
expansion	140	311	285	75	19	1	3	18	1	0
Netto change	72	29	-120	1	9	0	0	9	0	0
% netto change	1.60%	0.60%	-4.70%	0.00%	10.30%	0.80%	2.20%	3.50%	0.70%	0.00%
Total change	208	593	691	149	28	2	6	27	1	0
% total change	4.70%	12.70%	27.10%	10.10%	32.30%	4.10%	28.40%	10.30%	2.30%	0.00%
Stabile stock	4238	4087	1860	1330	59	40	15	233	54	3467
% stabile stock	95.30%	87.30%	72.90%	89.90%	67.70%	95.90%	71.60%	89.70%	97.70%	100.00%

Figure 1: Exemplary ecosystem extent accounting table

For the ecosystem extent account, for example, ecosystem or land use classes have been generated as a hybrid between biophysical categories (land cover) and functional categories (land use). The order of stacking of layers has an influence on the final surfaces in each class (Figure 1, left). The modified land use map has been reduced to an ecosystem map with 10 classes following the Maes typology. In Figure 1 (right) the resulting accounting table for the ecosystem extent in 2013 and 2016 is presented.

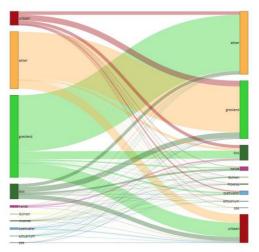
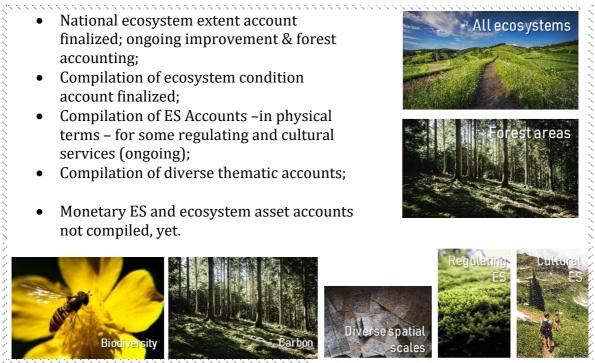


Figure 2: Flow of changes in ecosystem extent account.

For that time period, the most important changes in absolute terms are the decrease in grassland and the expansion of urban and built-up areas (houses with gardens) and arable land. In addition to that a high relative change was identified for heather and inland dunes (10.3%) and freshwater ecosystems (3.5%). Nevertheless, it needs to be noted that throughout the years the mapping method has been improved as well as that one of the input layers, the biological valuation map, is not fully updated every three years. It should be highlighted that for this specific account also a thorough validation has been executed. In <u>Annex 6.1.1</u> the specifics on the ecosystem service accounts in biophysical as well as monetary terms have been generated for wood production (focusing on forest ecosystems), carbon storage in biomass in forest and coastal ecosystems, water availability

and health benefits of green and blue areas in the living environment (<u>Annex 6.1.3</u> and <u>6.1.4</u>). The latter two include all (terrestrial) ecosystems in the accounting process.

### 6.2.2. Bulgaria



Box 2: Overview of NCA progress in Bulgaria (including MAIA-supported and MAIA-independent efforts).

In Bulgaria, the ecosystem extent and condition accounts have been generated on the national scale. The initial ecosystem extent and the ecosystem condition accounts have been developed without any financial and/or personalized support from the MAIA project. However, the revised version of the extent account, the ecosystem extent account which focuses on forests and woodlands and one of the biophysical ecosystem service accounts, which are under development right now, are funded by the MAIA project. All of these accounts benefitted from various MAIA activities, the forest ecosystem extent and the ecosystem service account also received personalized support from the MAIA project.

The national ecosystem extent account on all ecosystems (<u>Annex 6.2.1</u>), which is currently under development, covers the years 2000, 2006, 2012 and 2018 and has a resolution of 25 ha. For the terrestrial ecosystems the EU MAES ecosystem type classification level 2 (linked to CLC class 3) and for the marine ecosystems the EUNIS classification level 3 have been applied. The account follows the SEEA-EA guidelines.

For the forest ecosystem extent account, the forest and woodland ecosystem types are delineated on a national GRID (1x1 km<sup>2</sup>). The objective of that project is to develop a

methodology and to describe the potential data sources suitable for the calculation of the extent of forest, woodland and other woodland ecosystems on national level and their changes over time. For that account (Annex 6.2.1), net changes, additions and reductions of the extent are calculated in every grid cell for Corine Landcover data (2000-2018) and State Cadastre data (2019, 2020 and 2021). In Table 2, the changes in the ecosystem extent of the considered forest and woodland ecosystems are exemplarily presented. Also, specific extent accounting activities are executed in the Natura 2000 network and in the Riparian zones.

							Net change	Net change
			Area	Area	Area	Area	2000-	2000-
			2000	2006	2012	2018	2018	2018
Tier 1		Tier 2	(km <sup>2</sup> )	(km <sup>2</sup> )	(km <sup>2</sup> )	(km2)	(km2)	(%)
	and	Broad-leaved forest	23890	23381	23337	23746	-144	-0,6%
Forest		Coniferous forest	5466	5450	5415	5408	-58	-1,1%
Forest		Mixed forest	6192	6521	6497	6534	342	5,5%
woodland		Transitional woodland/shrub	7494	7306	7400	7777	283	3,8%
		Total forest and woodland	43042	42657	42650	43465	423	1,0%

Table 2: Changes in the forest and woodland ecosystems for the period 2000-2018

The other main objective of the forest accounting activities is to present methods for estimating provisioning ecosystem services from forests and woodland in particular wood supply (timber harvest) and game hunting meat. During the project several monetary calculation for forest provisioning services were tested. The forest output (in terms of timber as input for economic activities) is part of national accounts production boundary. Nevertheless, there is a need to distinguish which part of this ecosystem service flow is attributed solely to natural forest ecosystems, as this information is invisible in SNA.

The main sources of quantitative information about forest and woodland in Bulgaria are: (i) the Wooded area report and (ii) the Forest Management Projects (FMP). The Wooded area report includes the distribution of the area by land types – forested land, bare land for afforestation and non-productive bare land (RF1). The Forest Management Projects include forest stand description, which is attributive information base, lists and maps. The

descriptions are made of each subdepartment, each forest stand or bare forest area. Forest management projects are updated every 10 years, after which the unit goes through inventory and a new plan is prepared. The attributive tables of the forest data include information for altitude, slope, soil, rock, soil richness, habitat, type of subdepartment, forest type, tree species type and composition, age, volume of growing stock in m3 and usage in m3. The total standing volume of timber in forest and woodland ecosystems is 580 803 358 m3 from which the share of broad-leaved (deciduous) forests is 56 %, and of coniferous forests is 43 % (see Table 3).

Type of forest and woodland	Timber volume (standing biomass) in m <sup>3</sup> according to FMP	Use of timber in m <sup>3</sup> according to FMP	% of the envisaged usage from standing timber volume	Polygon number
Broad-leaved forest	323 854 962	42 988 626	13 %	746 476
Coniferous forest	251 455 936	25 762 281	10 %	360 181
Mixed forests	1 899 325	178 980	9 %	960
not classified type of forest	3 593 135	332 289	9 %	1 910

Table 3: Timber volume and usage in m3 from FMP for the 10 years period of action

For the monetary valuation of the forest ecosystem services timber provision and game meat, market prices have been applied.

The timber provisioning service has been estimated using the physical amount of timber removed and the respective average market prices of timber. In order to distribute timber ecosystems physical and monetary value on a map, the information from the logging permits about the annual physical quantities of timber harvest in m3 was used. The actual harvested timber amounts are aggregated by type (coniferous and deciduous) and by timber size (large, medium, small and wood) and linked to subdepartments by key id. The total standing volume of timber in forest and woodland ecosystems is 580 803 358 m3 from which the share of broad-leaved (deciduous) forests is 56 % and coniferous forests is 43 %.

The total harvested timber in m3 and national currency are allocated in every GRID cell for all years where there is harvest. The average producer prices by type (deciduous and coniferous) and size for 2018, 2019 and 2020 are taken from the Agricultural and Forestry Statistics in national currency (BGN) per m3. Only natural and coppice forests are included in the accounts. The forest plantations (artificial forests) consisting of white pine, black pine, fir plantations, spruce, mixed coniferous, non-local coniferous, castanea sativa, linden (tilia), fruit and nut trees, populous hybrid and other deciduous and not classified types of forests

are excluded from the accounts. The spatial distribution of the harvested timber in 2020 is presented in Figure 3.

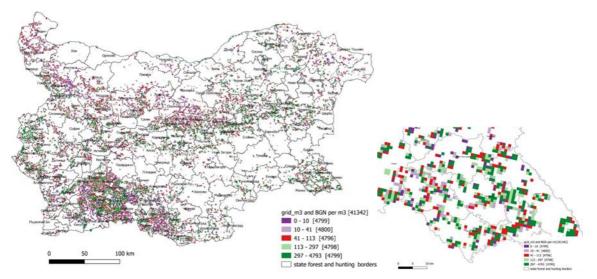


Figure 3: Map showing the harvested timber amounts in m3 in 2020 in national GRID cells 1x1 km2 (Map available for years 2018, 2019 and 2020).

For the second considered ecosystem service is providing meat from wild game (hereinafter game). Providing game (in sense of game meat) is considered as a provisioning ecosystem service whereas hunting is considered as a recreational activity under cultural ecosystem services. In Bulgaria, official hunting is permitted in the territory of the State Forest and State Hunting Enterprises, after paying a fee for issuing a hunting ticket. For the monetary valuation of the service, market prices were used and as final beneficiaries households were defined. For some exemplary results, see Table 4.

### Table 4: Supply-use table for game meat provision 2019

ECOSYSTEM SERVICES SUPPLY TABLE FOR PROVISIONING SERVICE GAME MEAT (2019 year)

	Forest and woodland ecosystem
Ecosystem provisioning service	
Hunting – kg/year meat from game	200 402
Hunting – euro (€)/ year meat from game	181 701

### ECOSYSTEM SERVICES USE TABLE FOR PROVISIONING SERVICE GAME MEAT (2019 year)

	Economic unit - Households
Ecosystem provisioning service	
Hunting – kg/year meat from game	200 402
Hunting – euro (€)/ year meat from game	181 701

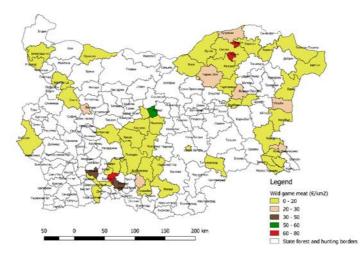


Figure 4: Wild game meat from forest and woodland in the territory of the state forest and hunting enterprises (€/km2) from 2017.

Furthermore, cadastral map layers (from Geodesy, Cartography and Cadaster Agency) have been included into the forest accounting database. The data cover the national territory and include information about buildings and immovable properties (cadastral parcels) allowing for further spatial assessments.

In addition to that, the ecosystem service account for flood regulation in biophysical terms (for details, see <u>Annex 6.2.2</u>) is implemented in two stages: In the 1<sup>st</sup> stage an account is generated for three case studies. This account will be completed by the end of the MAIA project. Afterwards, in the 2<sup>nd</sup> stage the flood regulation account will be generated at national scale.

Urban thematic account
NIGGG BAS
National Science Program "Environmental Protection
and Reduction of Risks of Adverse Events and Natural
Disasters", approved by the Resolution of the Council
of Ministers No 577/17.08.2018 and supported by the
Ministry of Education and Science (MES) of Bulgaria
(Agreement No Д01-279/03.12.2021)
Ongoing
Municipal/ Regional

I. Focus on Local climate regulation: for the 1st time BG started monitoring the Cooling Effect of specific urban areas: Sofia municipality (2020) & Burgas city (2021).

II. Spatial unit, based on Disaggregation of the urban area in Local Climate Zones (LCZ, see Figure Box 1) (Stewart & Oke, 2009), recognized as accounting units by SEEA EEA (2021). Unit of Measure - T°C.

III. Approach: data collection and analysis of land surface temperature variations by LocalClimate Zone (Dimitrov et al 2021; Venter, Krog and Barton, 2020; Marando et al., 2019).IV. Application: in urban areas with v. diverse features and conditions:

A/ Sofia: capital city functions, incl. excellent landscaping traditions (1.3 mln.); B/ Burgas: mid-size city in direct contact with protected wetlands; seashore; industry/tourism/maritime trade and shipping functions.

V. Data acquisition instruments: A/ Remote sensing data from satellite platforms Landsat 8 - General mapping of the Urban heat island phenomenon; B/ Unmanned Aerial System for Thermal Photogrammetry with a self-calibrating sensor: - a sample stratified study of the magnitude of the Surface urban heat island effect (Albris platform, Sensefly).

BURGAS CITY_LCZ		Buildings	Impervious	Vegetation	Average surface temperature, C
LCZ_3	Compact low-rise	19,96	23,77	21,42	21,5
$LCZ_5$	Open mid-rise	21,95	$25,\!23$	21,98	22,3
$LCZ_6$	Open low-rise	19,8	24,24	20,87	21,4
LCZ_8	Large low-rise	19	26	23,35	23,4
В	Scattered trees	23,78	29,49	23,36	23,6
D	Low plants	23,22	26,04	20,04	20,4
Е	Bare rock or paved	22,26	25,46	21,68	22,9

Table Box 1: Results to support a pilot accounting table.

VII. Cooling Effect Analysis:

(1) Temperature differences between green and gray infrastructure by types of Local Climate Zone; (2) Temperatures of the representative units (city park, suburban park, street landscaping, etc.); (3) Changes in the surface temperature in the buffer (200-400 m distance from a green element); (4) Geospatial statistical analyses.

*Under development*: Catalogue of the Intensity of the Surface Urban Heat Island (SUHI) for urban planning purposes. The goal: incorporate the above information in the respective urban planning geospatial units and thus, enable periodical data collection and fulfilment of the 'time step' accounting requirements.

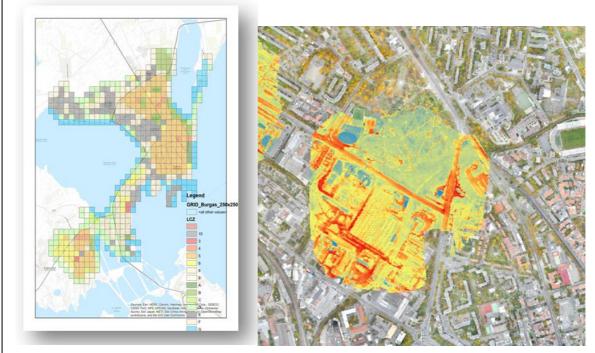


Figure Box 1: Disaggregation of the Burgas urban area in Local Climate Zones (left) and fragment from thermal imaging of the surface, Burgas, Sveta Troitsa area.

Box 3: Insights into thematic MAIA-supported accounting efforts (urban account) in Bulgaria.

Account type:	Carbon account for forest areas
Funding partner(s):	Bulgarian Academy of Sciences - NIGGG and FRI,
	National Statistical Institute of Bulgaria (NSI), MAIA
	project
Other involved partner(s):	Executive Environment agency (ExEA) by the Ministry
	of environment and waters
Status (planned/ ongoing/ done):	31.03.2022
Temporal coverage:	2005, 2015
Spatial scale:	Local, with spatial resolution 0.01-0.25 km² (Belovo
	Municipality)

The study area encompasses forest area of Belovo Municipality managed for commercial use as well as forest area within the boundaries of National Park Rila – protected area. The pilot account addresses the complexity of data availability in terms of spatially explicit data on forest resources, temporal coverage of the data, and its aggregation. To study the appropriateness of combining different data sources and information, two different methodological approaches for carbon stock and flow estimates in forest biomass were

tested. Comparative analysis of both approaches was performed in terms of feasibility, accuracy, and technical implementation. Specific software/ model/ tool used are QGIS, Excel Spreadsheets and LOOKUP Tables.

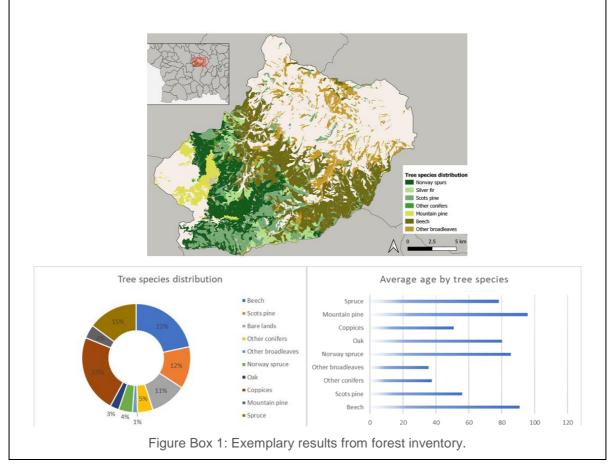
Local specifics in forest inventory are considered and combined with the SEEA-EA guidelines. As indicators Carbon stock in aboveground biomass and Carbon stock in other pools are used. The data is aggregated by main tree species, age and yield class. Further aggregation is possible to match the extent of forest, woodland and other woodland ecosystems.

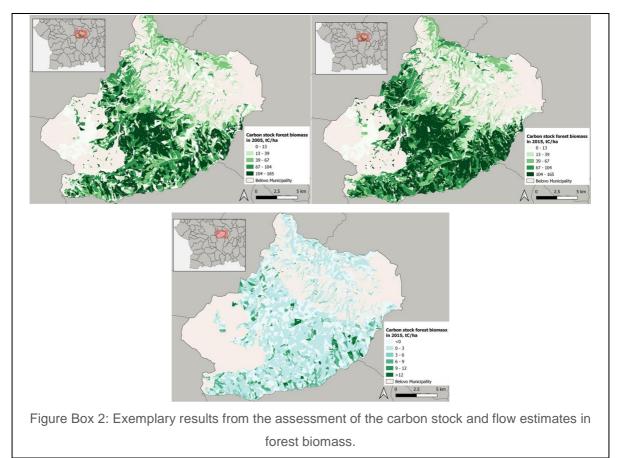
Initial datasets for carbon account in forests as climate regulation include one case study:

- Forest Management Plans
- LULUCF Inventory
- 1:25000 soil map data correlated to FAO classification

Some results are already published and one publication is under preparation:

https://naukazagorata.files.wordpress.com/2021/12/ng\_2\_2021-125-134.pdf





Box 4: Insights into thematic MAIA-supported accounting efforts (carbon account for forest areas) in Bulgaria.

### 6.2.3. Czech Republic

- Ecosystem extent account finalized;
- *Experimental* efforts with regard to both ecosystem condition and asset accounting;
- Compilation of ES Accounts both in physical and monetary terms – for some regulating and cultural services (ongoing);
- Official ecosystem condition, asset & thematic accounts not compiled, yet.



Box 5: Overview of NCA progress in Czech Republic (including MAIA-supported and MAIAindependent efforts).

In the Czech Republic, the MAIA contribution in the NCA progress is substantial. The staff involved in the development of the finalized national ecosystem extent as well as several ongoing national ecosystem service accounts (including the biophysical and monetary ecosystem service account for carbon sequestration and water purification) have been funded by the MAIA project. In addition to that, the MAIA project provided personalized support for all ecosystem service accounts that are currently under development. Originally, the Czech extent accounts have been developed based on the methodology of Land and Ecosystem Accounting (LEAC) by the European Environment Agency. With the adoption of SEEA-EA framework, the extent account has been revised according to the accounting methodology of the statistical standard (<u>Annex 6.3.1</u>). The current version of the ecosystem extent account covers the years 2000, 2006, 2012 and 2018 (see changes of ecosystem extents in Figure 5).

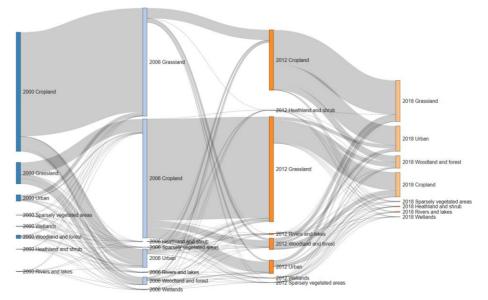


Figure 5: Diagram of ecosystem extent changes in the Czech Republic for 2000, 2006, 2012 and 2018.

The biophysical MAIA-supported ecosystem accounts that are currently under preparation in the context of the MAIA project cover the regulating ecosystem services water purification, carbon sequestration and water retention (Annex 6.3.2). In Table 5, some exemplary results from the national water filtration account are presented, in which a total of 274 million m<sup>3</sup> purified groundwater per year can be identified. In Figure 6, the spatial distribution of the carbon storage in forest trees as a component of carbon accounts based on the National forest inventory (left); and the mean annual water infiltration (right) as a component of water retention account are presented.

Table 5: Biophysical supply table for the ecosystem service water filtration in the Czech Republic.

ECOSYSTEM SUPPLY TABLE														
			Ecosystem types											
	Measurement units	Cropland	Woodland and forest	Urban	Heathland and shrub	Grassland	Rivers and lakes	Wetlands	Sparsely vegetated areas	TOTAL SUPPLY				
Ecosystem service														
surface water purification	K m3/year	NA	NA	NA	NA	NA	NA	NA	N A	NA				
groundwater purification	K m3/year	112,157	79,366	30,896	26,755	21,242	3,227	370	19	274,032				
water purification - infiltration	K m3/year													
Total														

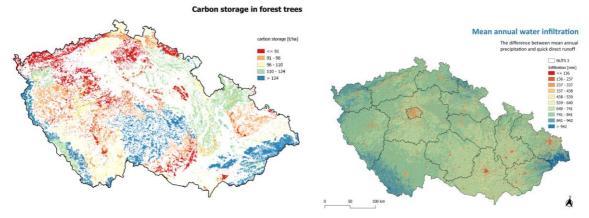


Figure 6: Carbon storage in forest trees based on the National forest inventory (left); mean annual water infiltration (right).

In monetary terms MAIA-supported accounts are under development for the ecosystem services water filtration, carbon sequestration and nature-motivated tourism (<u>Annex 6.3.3</u>). With regard to the water filtration, for example, the purified groundwater adds up to a total of 23 million € per year (Table 6), which can be attributed in the monetary use table (Table 7) to the institutional sector "water collection, treatment, supply".

			Ecosystem types											
	Measurement units	Cropland	Woodland and forest	Urban	Heathland and shrub	Grassland	Rivers and lakes	Wetlands	Sparsely vegetated areas	TOTAL SUPPLY				
Ecosystem service														
Groundwater purification	K EUR/year	9,533	6,746	2,626	2,274	1,806	274	31	2	23,293				
Total										23,293				

Table 6: Monetary supply table for the ecosystem service water purification.

Table 7: Monetary use table for the ecosystem service water purification.

					Ins	titutior	nal sec	tor				
	Measurement units	agriculture	forestry	fisheries	mining and quarrying	manufacturing	construction	electricity, gas supply	water collection, treatment, supply	other industries	households	TOTAL USE
Ecosystem service												
groundwater purification	K EUR/year								23,293			23,293
Total									23,293			23,293

### 6.2.4. Finland

- Ongoing work on marine ecosystem extent, condition and asset account;
- Compilation of regional forest condition account;
- Compilation of ES Accounts both in physical and monetary terms – for nature-based recreation, commercial and recreational fishing;
- Compilation of diverse thematic accounts (+ plan for a local urban account).







Box 6: Overview of NCA progress in Finland (including MAIA-supported and MAIA-independent efforts).

The NCA activities in Finland are manifolds and mostly implemented on a national scale. Even though some accounts have already been finalized, most of the core accounts are ongoing. Amongst those accounts, the national ecosystem extent and condition account for marine ecosystems can be considered MAIA-supported accounts. They have benefited from both funding and personalized support from the MAIA project.

In the context of the ecosystem extent account (see Figure 7), which will be completed in 2023, species-based extents rely on extensive spatial inventory data, from over 160'000 underwater sites. Based on the data, distributions of species have been modelled at a high resolution (20 m). Additional data includes approximately 50 environmental variables, such as salinity, turbidity, or topographical complexity, that may be used in modelling. The models describe benthic invertebrates, vascular plants, alga and mosses, and as such form the extent of Finnish marine ecosystems. Most of the species can be linked to international habitat classifications. As the distribution models only describe the probability of detecting a species at a given modelling grid, the probabilities need to be transformed into spatial extent units. Thereby the challenge occurs that discretization degrades the information content. Therefore, the median cover (%) was calculated for each species, based on the VELMU inventory data. Subsequently, the extent per modelling unit was calculated. For mobile species, it was assumed that the whole grid can be suitable. Data also includes Habitats

Directive Annex I habitats, which are expert-based assessments, and include eight habitats associated with marine environments: reefs, narrow inlets, lagoons, estuaries, shallow bays, sand banks and underwater parts of the Baltic Sea esker islands and islets. The data also cover the broad habitat types as formulated by the Marine Strategy Framework Directive, and habitat types based on the threatened status assessment and habitat typology of the IUCN Red Listed Ecosystems. For more information check <u>Annex 6.4.1</u>.

The ecosystem condition account (see Figure 8) is also ongoing and should be completed in 2023. The account mainly builds, next to the data from the ecosystem extent account, upon Aerial image surveys and remote sensing of human activities as well as expert-based workshops on the diverse impact levels (<u>Annex 6.4.2</u>).

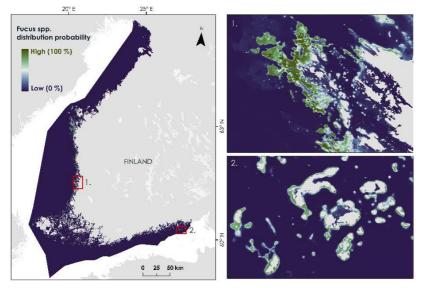


Figure 7: An example of the ecosystem extent data: Distribution probability of bladderwrack (Fucus spp.), a key habitat forming species in the Baltic Sea, and zoomed-in example areas. Modelling and graphs: Elina Virtanen, SYKE.

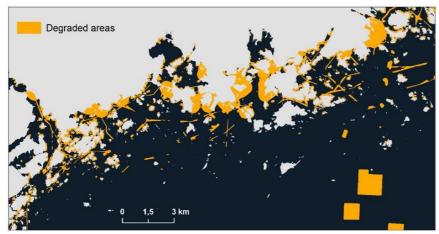


Figure 8: An example of ecosystem condition data: Degraded areas based on habitat loss, degradation and severe disturbance in an example area off the coast of the Capital City Helsinki. Modelling and graphs: Elina Virtanen, SYKE.

### 6.2.5. France

- Ecosystem extent, condition and asset account (mostly ongoing); – main focus: Marine ecosystems;
- Compilation of experimental local ES Account – in monetary terms – for cultural services (finished);
- ES accounts in biophysical terms and thematic accounts not compiled, yet.

~~~~~~~~~



Box 7: Overview of NCA progress in France (including MAIA-supported and MAIA-independent efforts).

The current NCA progress in France focuses on marine ecosystems. Accounts are being developed for the ecosystem extent, the ecosystem condition as well as the ecosystem assets of marine ecosystems on a national level. All of these accounts have received funding as well as personalized support from the MAIA project. In addition to that, these accounts also benefited from several additional MAIA activities.

The ongoing accounting efforts with regard to the marine ecosystem extent account (Annex 6.5.1) make use of the EUNIS classification scheme. Generally, a surface aggregation of marine habitats is executed on a one-minute arc grid resolution. For the ecosystem condition account (Annex 6.5.2), a combination of three categories of indicators is used. They reflect distinct values underlying ecosystem management, including heritage, functionality, and capacity. In Figure 9, as an example, the spatial distribution of the integrity of the seafloor approximated as risk of concomitant effects of physical pressures is presented. Both the marine extent and condition account are generated spatially explicit, whereas the marine ecosystem asset account is not spatially explicit, but aggregated by marine sub-regions and aggregated at the national level (Annex 6.5.3). The asset account builds upon the unpaid ecological costs (approach), corresponding mainly to avoiding and restoration costs required to reach specific environmental standards mentioned in the Marine strategic framework directive.

For all three, the ecosystem extent, condition and asset, the accounting is implemented in the French metropolitan Exclusive Economic Zone as a whole and also divided by subregions.

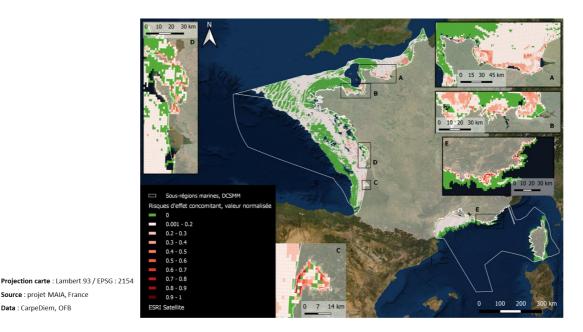


Figure 9: Condition account: Integrity of the seafloor approximated as risk of concomitant effects of physical pressures.

### 6.2.6. Germany

Data : CarpeDiem, OFB

- Ecosystem extent accounts finalized;
- Compilation of ecosystem condition accounts (ongoing);
- Compilation of ES Accounts both in physical and monetary terms – for some provisioning, regulating and cultural services;
- Ecosystem asset account and thematic accounts not compiled, yet.



Box 8: Overview of NCA progress in Germany (including MAIA-supported and MAIA-independent efforts).

The first comprehensive set of ecosystem accounts which were published in Germany on a national scale where generated in the framework of a research project funded by one of the German MAIA partners, the Federal Agency for Nature Conservation (BfN). The respective research project and its follow-up project are called "Integration of ecosystems and ecosystem services into environmental economic accounting (EAA). Theoretical framework and methodological foundations" (short: Accounting I) and "Ecosystem services and environmental-economic accounting - Digital assessment" (short: Accounting II), both of them were carried out by the Leibniz Institute of Ecological Urban and Regional Development (IOER).

The second project is also supported by MAIA activities. By means of these projects an ecosystem extent account, accounts for selected ecosystem services (both physical and monetary, examples see Figure 10 to Figure 12) as well as a conceptual base for an ecosystem condition account are developed (<u>Annex 6.6.1, 6.6.2, 6.6.3, 6.6.4</u> and <u>6.6.5</u>. In the last couple of years, the ecosystem accounting activities actually have also started to enter the official activities of the German Federal Statistical Office (Destatis). They have recently published the first official German ecosystem extent account on a national scale. Thus, for that specific account, Germany already managed to make the transition from the "pilot"/ research phase, towards the production of an official account, which is part of the national statistical framework. None of these accounts received direct funding from the MAIA project, nevertheless, a fair share of the accounts has actually benefited through diverse MAIA project activities (such as webinars, workshops and joined publications), including the official ecosystem extent account developed and published by Destatis.

Next to these activities, the second German MAIA partner Leibniz University Hannover (LUH) was also involved in hosting, co-organising and co-financing the two German National Ecosystem Accounting Conferences in Hannover in March 2020 and November 2021, which brought together the key stakeholders of German NCA implementation. More precisely, the second German conference on ecosystem accounting took place as a cooperation between the MAIA project, the LUH, the Leibniz Institute of Ecological Urban and Regional Development, the Federal Agency for Nature Conservation and the Federal Statistical Office. Next to the newly adapted SEEA-EA standard and its implication for the German Ecosystem Accounting, also, on-going project work as well as an overview over the recent results and upcoming work of the German Ecosystem Accounting progress including insights on challenges and opportunities were presented and discussed. In addition to that, through diverse statements from stakeholders from the potential user spectrum, the users' perspective was taken into account.

In addition to that, the LUH is actively involved in the generation of the German ecosystem condition account by Destatis through personalized support/ consultant activities since 2021. The German ecosystem condition account (for specifics see <u>Annex 6.6.2</u>), is currently under development on a national scale for all ecosystems (including the marine ecosystems as far as the Exclusive economic zone). Its estimated completion date will be in spring 2023. It will

generally follow the SEEA-EA guidelines and will be generated for three-year time intervals. The plan is to develop whenever possible spatially explicit information using mainly Python and ArcMap. The results will be published open access aggregated at administrative scales in the form of reports, accounting spreadsheet and maps. Currently, the focus lies on the selection of indicators as well as on the identification of reference levels. Thus, even though MAIA was not involved through direct funding in the development of ecosystem accounts in Germany, the contributions are manifolds. Also, it should be highlighted that the accounting efforts in Germany very nicely evolved from the comprehensive research activities (pilot accounts) towards the launching of official accounting activities by Destatis (official national accounts).

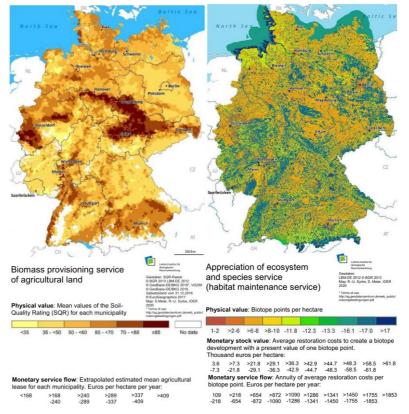


Figure 10: Biomass provision service of agricultural land and appreciation of ecosystem and species service – physical and monetary values (source: Leibniz Institute for Ecological Urban and Regional Development (IOER), Dresden).

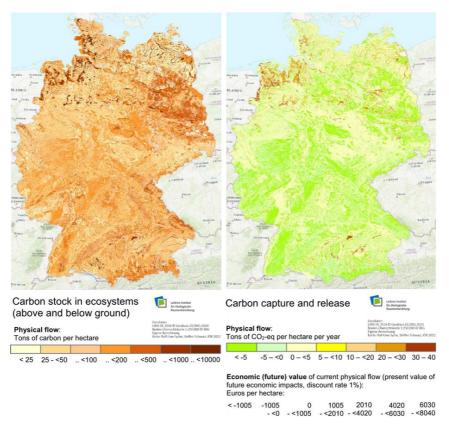


Figure 11: Climate regulation service (carbon stock, greenhouse gas capture and release (physical and monetary value) (source: IOER, Dresden)

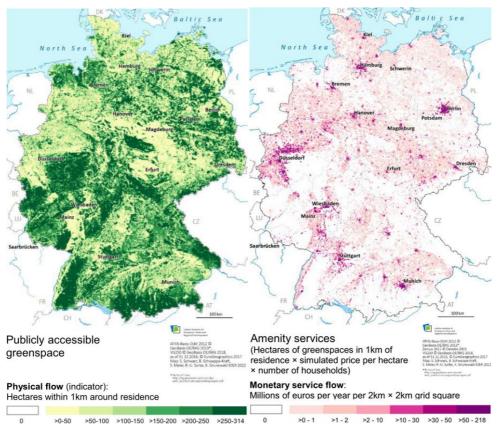


Figure 12: Publicly accessible greenspace in the vicinity of residence - monetary value of amenity services of urban greenspace (source: IOER, Dresden)

### 6.2.7. Greece

- Compilation of ecosystem extent, condition and asset account – diverse foci: All ecosystems, forest ecosystems, freshwater ecosystems (also at different spatial scales)
- Compilation of ES Accounts both in physical and monetary terms – for water provision (ongoing);

アンシアアアアンシアアアアアアア スマスマンマン

• Compilation of biodiversity account.



Box 9: Overview of NCA progress in Greece (including MAIA-supported and MAIA-independent efforts).

In Greece, the MAIA project is substantially involved in the NCA progress. All of the identified accounts have received both funding and personalized support from the MAIA project. The national ecosystem extent account for all ecosystems as well as the regional ecosystem extent accounts for forest and woodlands as well as freshwater ecosystems have been finalized. In addition to that, also, the national ecosystem asset account has been completed. Further ongoing accounts focus on the ecosystem condition, the biophysical and monetary ecosystem service account for the provision of drinking and irrigation water.

The national ecosystem extent account for all ecosystems is based upon the EU MAES ecosystem type classification and provides information for the time between 1990 and 2018. It generally follows the SEEA-EA guidelines and utilises the Corine Land Cover datasets (Annex 6.7.1). In addition to that, also an ecosystem extent account focusing on freshwater (surface and groundwater) ecosystems has been generated (Annex 6.7.1). This account is generated for the region of the Alfeios river basin, Peloponnese, and covers two Water Framework Directive (WFD) reporting cycles, i.e., (2009-2015) and (2016-2021). For this account, the identification of rivers, lakes and groundwater bodies is based upon the WFD, as reported in the river basin management plans. Additionally, (a) the Corine Land Cover database for 1990, 2000, 2006, 2012, 2018, and (b) JRC Global Surface Water, using changes in seasonality between 1984 and 2020 have been used for the water bodies' identification. In Table 8 an excerpt from the freshwater extent account is presented.

| Ecosystem type              | Freshwater                               |                                         |  |  |  |  |  |  |  |
|-----------------------------|------------------------------------------|-----------------------------------------|--|--|--|--|--|--|--|
| CLC 3 Code                  | 511                                      | 512                                     |  |  |  |  |  |  |  |
| CLC Level 3                 | Water courses (rivers)in km <sup>2</sup> | Water bodies (lakes) in km <sup>2</sup> |  |  |  |  |  |  |  |
| 1999                        | 10,209                                   | 3,946                                   |  |  |  |  |  |  |  |
| 2000                        | 10,208                                   | 3,946                                   |  |  |  |  |  |  |  |
| 2006                        | 6,960                                    | 3,946                                   |  |  |  |  |  |  |  |
| 2012                        | 6,892                                    | 3,948                                   |  |  |  |  |  |  |  |
| 2018                        | 6,892                                    | 3,948                                   |  |  |  |  |  |  |  |
| otal change 2000 up to 2018 |                                          |                                         |  |  |  |  |  |  |  |
| r the common areas          | 0                                        | 0                                       |  |  |  |  |  |  |  |

Table 8: Freshwater extent account based on Corine Land cover 1999, 2000, 2006, 2012 and 2018for the Alfeios RB (under publication).

On the same spatial and temporal scale, also a freshwater ecosystem condition account is being generated (<u>Annex 6.7.2</u>). For the surface waters, thus river and lakes the "ecological status" is used (see Figure 13) as indicator, whereas for the groundwater bodies, the quantitative, chemical and total status are used. The information is aggregated within the EEA Reference Grid cell (size: 1x1 km2) following the worst-case status classification.

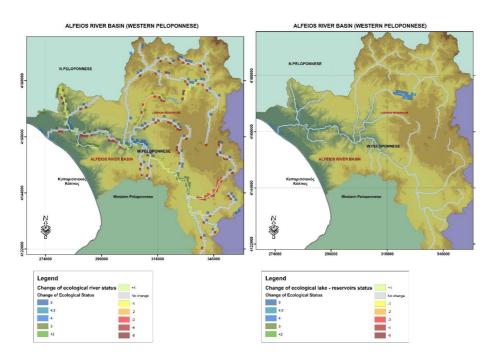


Figure 13: Freshwater Ecosystem Condition Accounts: Ecological river (left) and lakes (right) status change of Alfeios river basin using the EEA Ref Grid 1x1km<sup>2</sup> (under publication).

In addition to that, there are ongoing MAIA-supported accounting activities on a regional scale with regard to ecosystem service accounts. The provision of drinking and irrigation water is accounted for in both biophysical and monetary terms (<u>Annex 6.7.3</u> and <u>6.7.4</u>). In Figure 14, the change in the annual drinking water use and supply (in biophysical terms) between the years 2015 and 2021 is presented. For the monetary account, the valuation of

drinking water use and supply is based on cost of production (for change between 2015 and 2021 see Figure 15), whereas the valuation of irrigation water use and supply is based on (i) standard output of crops, (ii) net return to water and (iii) cost of production.

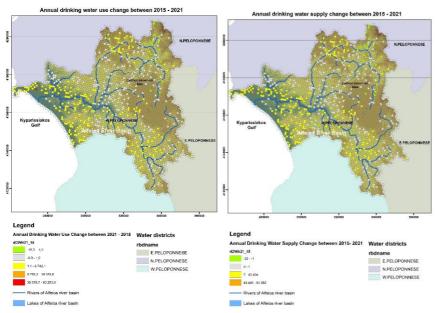


Figure 14: Freshwater ecosystem services accounts in biophysical terms: Annual drinking water use (left) and supply (right) change ( $m^3$  per year) between 2015 and 2021 in the Alfeios river basin using the EEA Reference Grid Greece with cell size 1×1 km<sup>2</sup> (under publication).



Figure 15: Freshwater ecosystem services supply accounts in monetary terms: Annual drinking water supply value change (in Euro) between 2015 and 2021(under publication).

The ecosystem asset account has been developed in Greece on a national scale covering

all ecosystems (<u>Annex 6.7.5</u>). For the account, the relative extent of the ecosystem type and flora species richness (total, endemic. ecosystem type exclusive, ecosystem type exclusive endemics) per 10x10 km EEA reference grid cell, with respect to the relevant species richness category is accounted for per floristic region in Greece. The efforts so far can be identified as a baseline assessment or accounting reference.

In addition to that, Greece, also in the context of the MAIA project, is involved in very extensive work on the thematic account biodiversity, where number of habitat types, number of species under IUCN threat categories and number of species included in Annex I of Dir/92/43/EEC are accounted for (see Table Box 1).

Table Box 1: Synoptic accounting table for biodiversity indicators inside Natura 2000 SCIs, in Peloponnese and its Prefectures, for the years 2000 and 2015. Net change is also presented; green colour indicates improvement; grey colour indicates no change.

|                            | MAES - LEVEL 3 (2000) | MAES - LEVEL 3 (2015) | Net Change (2000 to 2015) | Habitat types (2000) | Habitat types (2015) | Net Change (2000 to 2015) | Priority Habitat types (2000) | Priority Habitat types (2015) | Net Change (2000 to 2015) | Listed in IUCN threat categories (2000) | Listed in IUCN threat categories (2015) | Net Change (2000 to 2015) | Annex I of Directive 92/43/EEC (2000) | Annex I of Directive 92/43/EE (2015) | Net Change (2000 to 2015) |
|----------------------------|-----------------------|-----------------------|---------------------------|----------------------|----------------------|---------------------------|-------------------------------|-------------------------------|---------------------------|-----------------------------------------|-----------------------------------------|---------------------------|---------------------------------------|--------------------------------------|---------------------------|
| Peloponnese<br>(Total)     | 13                    | 16                    | 3                         | 37                   | 50                   | 13                        | 5                             | 9                             | 4                         | 23                                      | 10                                      | -13                       | 4                                     | 4                                    | 0                         |
| Prefecture of<br>Achaia    | 12                    | 14                    | 2                         | 29                   | 31                   | 2                         | 5                             | 5                             | 0                         | 6                                       | 4                                       | -2                        | 2                                     | 2                                    | 0                         |
| Prefecture of<br>Argolis   | 3                     | 3                     | 0                         | 3                    | 3                    | 0                         | 0                             | 0                             | 0                         | 0                                       | 0                                       | 0                         | 0                                     | 0                                    | 0                         |
| Prefecture of<br>Arkadia   | 12                    | 15                    | 3                         | 22                   | 27                   | 5                         | 3                             | 4                             | 1                         | 7                                       | 3                                       | -4                        | 1                                     | 1                                    | 0                         |
| Prefecture of<br>Corinthia | 10                    | 12                    | 2                         | 16                   | 19                   | 3                         | 3                             | 3                             | 0                         | 6                                       | 3                                       | -3                        | 1                                     | 1                                    | 0                         |
| Prefecture of<br>Ilia      | 12                    | 15                    | 3                         | 21                   | 35                   | 14                        | 1                             | 4                             | 3                         | 1                                       | 1                                       | 0                         | 0                                     | 0                                    | 0                         |
| Prefecture of<br>Lakonia   | 11                    | 13                    | 2                         | 21                   | 27                   | 6                         | 2                             | 3                             | 1                         | 5                                       | 3                                       | -2                        | 1                                     | 1                                    | 0                         |
| Prefecture of<br>Messinia  | 12                    | 13                    | 1                         | 26                   | 33                   | 7                         | 3                             | 6                             | 3                         | 10                                      | 1                                       | -9                        | 2                                     | 2                                    | 0                         |

Box 10: Insights into thematic MAIA-supported accounting efforts in Greece.

#### 6.2.8. The Netherlands

- Compilation of national ecosystem extent and condition account – diverse foci: All ecosystems (finalized) and marine ecosystems (ongoing improvement);
- Compilation of ES Accounts both in physical and monetary terms – for some provisioning, regulating and cultural services;
- Compilation of ecosystem asset and diverse thematic accounts.







Box 11: Overview of NCA progress in the Netherlands (including MAIA-supported and MAIA-independent efforts).

At the national level, The Netherlands have developed accounts for extent, condition, physical ecosystem services, monetary ecosystem services valuation, monetary ecosystem assets, and a first approach to join ecosystem services assets with statistic national accounting. They have even already updated most of these accounts for 2018. Even though most of these official national ecosystem accounts have been developed without funding or personalized support from the MAIA project, the largest share of the accounts has benefited from multiple MAIA projects activities. In addition to that, the ecosystem service accounts for local climate regulation and coastal protection have been funded by the MAIA project (see accounting tables in <u>Annex 6.8.1</u> and <u>6.8.2</u>). The accounts for local climate regulation and coastal protection follow the SEEA-EA guidelines and have been generated on a national scale for the years 2013, 2015 and 2018. The local climate regulation was accounted for in biophysical terms (see <u>Annex 6.8.1</u>). Thereby, the service is defined as the contribution of vegetation within a radius of 500 m to the cooling capacity of highly urban areas during a heat wave. The service is expressed in the contribution of vegetation to the temperature reduction of the total heat wave number in °C in the city during a heat wave). For the ecosystem service coastal protection, accounts have been generated in biophysical as well as monetary terms focusing on the coastal zone of the country (see Annex 6.8.2). By means of GIS models, the amount of protected coastline is identified. For the ecosystem service account in monetary terms the replacement cost approach is compared with costs of constructing dykes. Besides, there are efforts on the establishment of a thematic account on biodiversity as a collaboration between the Statistics Netherlands (Centraal Bureau voor de Statistiek, CBS) and the MAIA project (for specifics, see Box 12).

Account type:Biodiversity accountFunding partner(s) andStatistics Netherlands (CBS), MAIA projectother involved partner(s):Statistics Netherlands (CBS), MAIA projectStatus (planned/ ongoing/ done):OngoingCoverage:National

Statistics Netherlands is currently working on an update of its biodiversity account. Its first experimental biodiversity account was published in 2020 and showed the development of a SEEA EA consistent biodiversity account for the accounting period 2006-2013 (SEEA-EEA Biodiversiteitsrekening 2006-2013, report in English). In the current update the account is being developed for the period 2013-2020. Using existing indicators from Red List Indicators, Living Planet Index and the SEEA EA extent account an overall picture of the state and change of biodiversity for different ecosystems in the Netherlands is brought together (see Figure Box 1 and Table Box 1). The update is planned to be published in May 2022 on the website of Statistics Netherlands (www.cbs.nl).

Apart from the biodiversity account update, Statistics Netherlands is currently also working on new biodiversity indicators to be used in the biodiversity account. The research is specifically focused on integration of the farmland bird index into SEEA EA biodiversity and/or condition accounts. Therefore we are looking into how the current farmland bird index can be regionalized and investigate possible indicators on the relation between landscape structure and farmland bird populations and pressure indicators specifically on farmland birds.

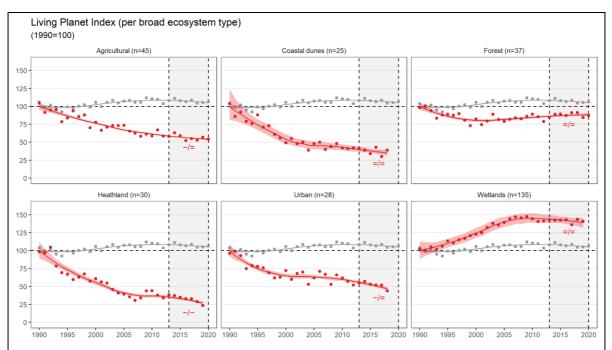


Figure Box 1: Living Planet Indices for six broad ecosystem types in the Netherlands (1990-2020). The overall LPI in grey for reference purposes. +/=/- indicate decreasing/stable/increasing trends during the accounting period 2013-2020.

| Ecosystem (sub)type            | Extent  |         |        | Living Pla | anet ind | ex     |            | MSA eco | system | quality |            |
|--------------------------------|---------|---------|--------|------------|----------|--------|------------|---------|--------|---------|------------|
|                                | 2006    | 2013    | Change | 2006       | 2013     | Change | assessment | 2006    | 2013   | Change  | assessmen  |
| All Terrestrial and Freshwater |         |         |        | 107.7      | 108.9    | 1%     | Stable     |         |        |         |            |
| Terrestrial                    |         |         |        | 85         | 87       | 2%     | Stable     |         |        |         |            |
| Terrestrial nature             |         |         |        | 59         | 60       | 2%     | Stable     | 37.8    | 37.8   | 0       | Stable     |
| Forest                         | 326903  | 329540  | 1%     | 93         | 98       | 5%     | Increasing | 32.3    | 35     | 8%      | Increasing |
| Open nature                    |         |         |        | 39         | 38       | -3%    | Stable     |         |        |         |            |
| Heathland                      | 38343   | 41493   | 8%     | 42         | 37       | -12%   | Decreasing | 32.6    | 32.3   | -1%     | Stable     |
| Coastal Dunes                  | 24010   | 22049   | -9%    | 57         | 54       | -5%    | Stable     | 47.1    | 43.9   | -7%     | Decreasing |
| Semi-natural grassland         | 49841   | 57790   | 14%    |            |          |        |            | 29.2    | 33.4   | 14%     | Increasing |
| Freshwater and wetlands        |         |         |        | 144        | 144      | 0%     | Stable     |         |        |         |            |
| Freshwater                     | 408344  | 421246  | 3%     |            |          |        |            | 36.2    | 39.8   | 10%     | Increasing |
| Wetlands                       | 37006   | 47669   | 22%    |            |          |        |            | 47.5    | 45.9   | -3%     | Stable     |
| Agricultural                   | 1867094 | 1822362 | -2%    | 63         | 56       | -11%   | Decreasing |         |        |         |            |
| Urban                          | 519289  | 546967  | 5%     | 63         | 56       | -11%   | Decreasing |         |        |         |            |

Notes:

Forest' includes permantenly vegetated coastal dunes

Urban' includes built-up environments and public green space

Table Box 1: Combined biodiversity account 2006-2013, retrieved from Bogaart, Polman, Veweij and Van Swaay, 2020, "The SEEA-EEA Experimental biodiversity account for the Netherlands". CBS & WUR, The Hague/Wageningen, The Netherlands.

Box 12: Insights into thematic MAIA-supported accounting efforts in The Netherlands.

#### 6.2.9. Norway

- Ecosystem extent, condition and asset accounts

   diverse foci: All ecosystems, agricultural, urban area (also at different spatial scales);
- Compilation of regulating ES Accounts both in physical and monetary terms (ongoing);
- Compilation of diverse thematic accounts on the topics biodiversity and urban areas.



Box 13: Overview of NCA progress in Norway (including MAIA-supported and MAIA-independent efforts).

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ity

The accounting efforts in Norway are taking place on a national and subnational scale. On a sub-national scale, the urban areas are of special interest. On the national scale, a MAIA-supported account focusing on agricultural land has been generated in the framework of the official national statistics, entitled *Norway, values of agricultural land*. The account can be regarded as an accounting exercise towards ecosystem asset accounts (Annex 6.9.1). For the account the agricultural values are assessed by three approaches, with different temporal and spatial coverage: The Resource rent approach for the time period from 1984-2018, according to National Accounts procedures, System of National Accounts (SNA) and SEEA-EA (Figure 16). The second and third approach are accounting for the value of public transfers to agriculture as indirect societal willingness to pay for agriculture land in six Norwegian regions in 2020. Mill NOK. (Source: Calculations based on data from Statistics Norway and Norwegian Agriculture Agency)) and the rental prices for agricultural land in active use for the period from 2005-2020 (Figure 18). This account has received both funding and personalized support through the MAIA project.

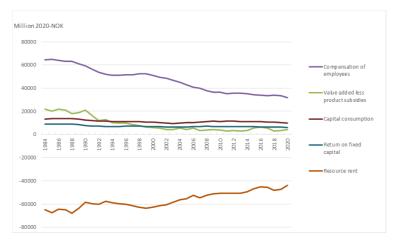
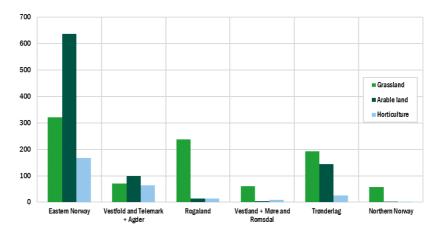
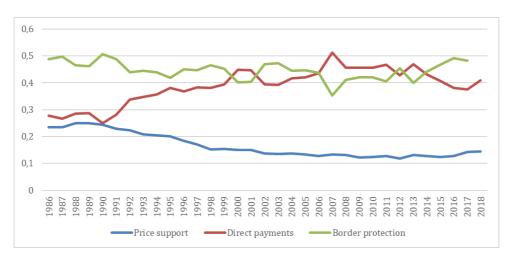


Figure 16: The components of the resource rent in Norwegian agriculture 1984-2020.



*Figure 17: Value of Norwegian grassland, arable land and horticulture land in six Norwegian regions in 2020. Mill NOK. (Source: Calculations based on data from Statistics Norway and Norwegian Agriculture Agency)* 



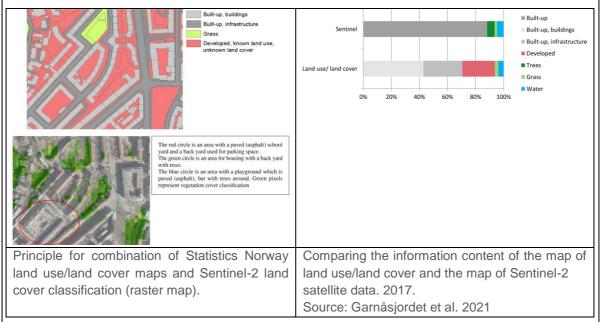
*Figure 18: Share of price support, direct payments and border protection of total producer support to Norwegian farmers. 1986-2018. (Source: OECD)* 

All MAIA-independent accounts in Norway did benefit from (only) one MAIA project activity, an active participation in a MAIA webinar. In addition to that, in the domain of thematic

accounts, the MAIA-supported accounts that should be highlighted are sub-national accounting efforts on ecosystem extent and condition focusing on the metropolitan area of Oslo (for specifics, see Box 14).

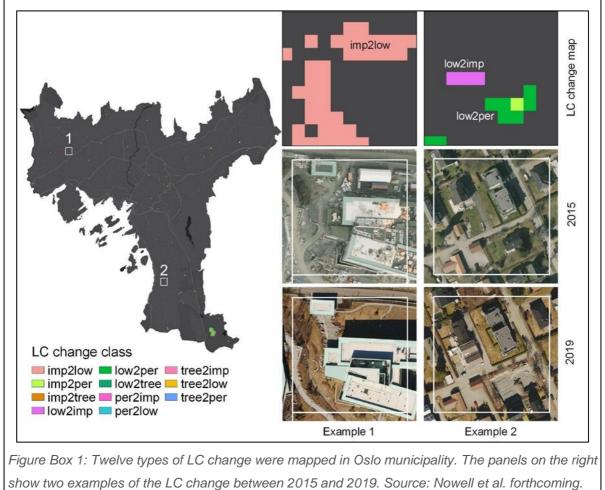
| Urban thematic extent account                      |  |
|----------------------------------------------------|--|
|                                                    |  |
| Norwegian Institute for Nature Research (NINA) and |  |
| Statistics Norway (SSB), MAIA project, Oslo        |  |
| Municipality                                       |  |
| Official statistics (ongoing),                     |  |
| extent change account (done)                       |  |
| 2015-2019                                          |  |
| Subnational/urban: Oslo built zone                 |  |
|                                                    |  |

One of the main purposes of ecosystem accounts to support policy is to detect significant changes during the accounting period in ecosystem extent and condition. This is a challenge in urban areas. Statistics Norway has tested combining official land use/land cover maps with Sentinel-2 Copernicus land cover classification to generate faster and more consistent updating of official land cover statistics in urban built zones (Garnåsjordet et al. 2021).



The Norwegian Institute for Nature Research (NINA) has assessed the accuracy of change detection in urban ecosystem extent accounts (with condition data including tree canopy), using groundtruthed Sentinel-2 data (Nowell et al. forthcoming) (Figure Box 1) (Nowell et al. forthcoming). The study finds that using Sentinel-2 data significant change during a 4-year

accounting period could be detected for 11 of the 12 land cover classes optimally with a 50m2 pixel resolution. This is promising for future official statistics for land cover in urban areas.



Box 14: Insights into thematic MAIA-supported accounting efforts in Norway.

#### 6.2.10. Spain

- Ecosystem extent and condition account (mostly finished) diverse foci: All ecosystems and forest ecosystems;
- Compilation of ES Accounts both in physical and monetary terms – for some provisioning, regulating and cultural services (mostly finished);
- Regional ecosystem asset account finalized for forest ecosystems;
- Compilation of diverse thematic accounts.





Box 15: Overview of NCA progress in Spain (including MAIA-supported and MAIA-independent efforts).

In Spain the NCA progress takes place at the regional (for Andalusia) and national scale. The MAIA project was not directly involved (through funding and/or personalized support) in the creation of the regional ecosystem accounts in Andalusia, whereas on the national scale, substantial MAIA efforts can be detected. The finalized national ecosystem extent account, as well as the national forest condition and several ecosystem service accounts (biophysical and monetary) have been funded by the MAIA project. In addition to that, some of these national accounts (amongst which the ecosystem condition account) have been used as an example in MAIA activities (i.es webinars, SEEA-EA forum) to provide personalized support in other MAIA countries.

At the national level, the idea is to develop automated models to measure the accounts using Python algorithms (Annex 6.10.1). These models are ready to be used on other scales and/or ecosystem types. About ecosystem extent account they present a novel approach from existing ecosystem classifications. This approach shows the spatial and statistical extent account of 26 ecosystems (i.e. forests, grasslands, croplands, and urban, among others) between 1970 and 2015 at the national scale. Extent accounts were developed at a resolution of 25 meters and provided reliable information on how ecosystem types have changed over time in Spain. The results reflect three main patterns in the extension account: (i) an increase in forest ecosystems, (ii) a considerable decrease in agroecosystems (especially annual croplands), and (iii) substantial development of urban areas.

Forest condition accounts propose a method in compliance with the requirements of SEEA-

EA. This approach is a step forward to test the condition account framework from a technical and methodological perspective that serves as a guide for future developments in condition accounting. Forest was used as the first ecosystem to develop this account, due to the substantial contributions of forest biodiversity and ecosystem services to society and because it is the ecosystem with the highest net extension growth in recent decades in Spain (Annex 6.10.2).

In relation to the accounts under development at the national level, work is being done on carbon accounts in both biophysical and monetary terms (<u>Annex 6.10.3</u> and <u>6.10.4</u>), with the Invest, using the information provided by the carbon density of the biomass as carbon stock data, global aerial and underground (NASA), maps of soil organic carbon reserves (ISRIC) and information on dead wood from the Spanish forest monitoring network (MITERD).

Regarding biodiversity accounts, species richness accounts have been developed based on machine learning models for 521 species included in the habitat and bird directives as species of community interest, obtaining species richness maps by species, ecosystem, or taxon, from 2000 to 2015.

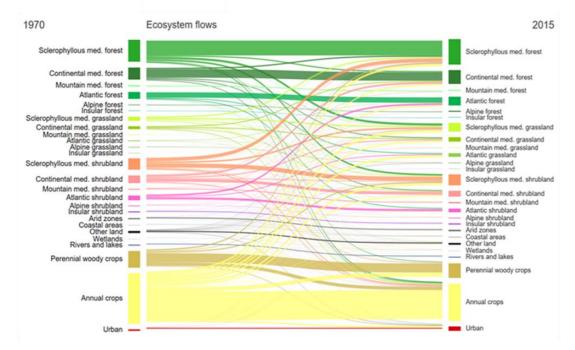


Figure 19: Ecosystem extent account flow/ changes from 1970 to 2015 in Spain.

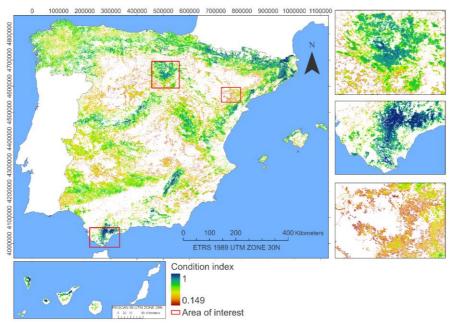


Figure 20: Forest condition index in 2015 in Spain (part of forest condition account).

# 4. CONCLUSIONS

The Deliverable gives many interesting insights into the significant progress with respect to the NCA implementation in the 10 European countries that are participating in the MAIA Coordination and Support Action. Next to providing a general overview on the state of the NCA implementation in the countries and the general influence of MAIA in that process, the Deliverable functions as a technical report on the specifics of MAIA-supported core accounts. Generally, it should be noted, that even though the NCA progress differs within the ten MAIA MS, in each of the countries significant development has been achieved within the last couple of years. Many countries had started their activities already before MAIA came to action and are receiving continuous support by the project, other countries indicated that the MAIA project delivered highly needed support to finally kick-off the efforts. Some countries developed their first pilot accounts, whereas other countries managed to transit from the pilot accounting phase into the generation of official accounts in the framework of their national statistics.

Next to the diverse MAIA-supported accounts, for which a contribution such as direct funding and/ or personalized support from the MAIA project was identified, it needs to be highlighted that also most of the other accounts benefited from the various activities from the MAIA project, such as workshops, webinars and the MAIA network. In this context, it should be mentioned that the transfer of knowledge and skills was and still is probably the fundamental base of the success of the MAIA project. It can be concluded that the WP3 activities of supporting and mainstreaming NCA activities based on the assessment of the state-of-the-art in the participating countries (MAIA Deliverables D3.1. and D3.2) was useful in order to create tailor-made solutions for each MS and the involved stakeholders.

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# 6. ANNEX

## 6.1. Annex: Belgium

### 6.1.1. Ecosystem extent account

| Country                |                                                                                                                                                           | Belgium                                                                                                                                                                        |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type           |                                                                                                                                                           | Ecosystem extent account                                                                                                                                                       |
| Account code           |                                                                                                                                                           | BE_EE_R_1                                                                                                                                                                      |
| Funding partners       |                                                                                                                                                           | VITO and INBO (within the Horizon 2020<br>MAIA project); co-funded by Department for<br>Spatial development, environment, energy,<br>climate, green economy and animal welfare |
| Other involved         | partners                                                                                                                                                  |                                                                                                                                                                                |
|                        | Planned/ ongoing/ done                                                                                                                                    | Done                                                                                                                                                                           |
| Status                 | (Estimated) completion<br>date                                                                                                                            | Not applicable                                                                                                                                                                 |
|                        | (Sub-)national/<br>international                                                                                                                          | International                                                                                                                                                                  |
| Ecosystem              | If possible, please specify                                                                                                                               | EU MAES ecosystem types                                                                                                                                                        |
| type<br>classification | If (sub-)national,<br>compatible with<br>international classification<br>(if yes, please specify<br>which)                                                | Not applicable                                                                                                                                                                 |
| Ecosystems             | Ecosystem types                                                                                                                                           | All ecosystems                                                                                                                                                                 |
| Temporal               | Temporal coverage                                                                                                                                         | 2013, 2016 (Corine: 1990, 2018)                                                                                                                                                |
| specifics              | Frequency of updates                                                                                                                                      | Pluri-annual (every 3 years; Corine: six years)                                                                                                                                |
| Spatial<br>specifics   | Spatial scale [local, regional, national]                                                                                                                 | Regional                                                                                                                                                                       |
|                        | If sub-national, please specify area                                                                                                                      | Flanders                                                                                                                                                                       |
|                        | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit] | Fully spatially explicit                                                                                                                                                       |
|                        | If aggregated, please<br>specify administrative or<br>ecological scale                                                                                    | Not applicable                                                                                                                                                                 |
|                        | Spatial resolution                                                                                                                                        | 10m x 10m (Corine: 1ha, with MMU of 25ha)                                                                                                                                      |
|                        |                                                                                                                                                           |                                                                                                                                                                                |
| Methodology            |                                                                                                                                                           |                                                                                                                                                                                |
|                        |                                                                                                                                                           |                                                                                                                                                                                |

| 0                            |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| General                      | Combining specific spatial geodata (data from administrative databases, satellite imagery, aerial orthophotos and field recordings) for Flanders                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| description                  |                                                                                                                                                                                                                                                                                                                                  | lophotos and field recordings) for Flanders                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| Specific                     | GIS                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| software/                    |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| model/tool                   |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| used                         | Vac / a suth / a c                                                                                                                                                                                                                                                                                                               | V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| Following                    | Yes/ partly/no                                                                                                                                                                                                                                                                                                                   | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| SEEA-EA                      | If partly, please specify                                                                                                                                                                                                                                                                                                        | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| guidelines                   | Vac/ma                                                                                                                                                                                                                                                                                                                           | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| Validation process and/      | Yes/ no                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                                                                                                                           | The land use on the map is compared to<br>a sample of reference points that reflect<br>the actual land use with a higher<br>accuracy. A sample size of 3815 points,<br>distributed among the change classes<br>proportionally according to their area<br>share, with a minimum of 40 points for<br>the classes with the smallest area.<br>Validation by ten evaluators (aerial<br>photographs, attribute tables of the<br>agricultural use parcels database and<br>the Biological Valuation Map). For each<br>point (both years), land use and land use<br>change was recorded. For each<br>evaluator, 30 points were also checked<br>by a second evaluator. Error matrix is<br>drawn up and measures of accuracy can<br>be calculated including<br>* overall accuracy (OA)<br>* producers accuracy (PA)<br>https://www.vlaanderen.be/inbo/backgrou<br>ndindicatoren/landgebruiksverandering-<br>validatie |  |
|                              |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| Data<br>source(s)            | <ul> <li>Landgebruiksbestand Vlaanderen 2013 and 2016</li> <li>Biological Valuation Map (BWK)</li> <li>Green Map (differentiating between 'agriculture', 'low green',<br/>'high green', 'not green' areas)</li> <li>Agriculture use parcels, cadastral map (CAPMAP)</li> <li>CORINE Land Cover data for 1990 and 2018</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| Output(s)                    |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| Report(s)                    | Yes/ no                                                                                                                                                                                                                                                                                                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| Report(s)                    |                                                                                                                                                                                                                                                                                                                                  | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
|                              | Open access [yes/ no]                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
|                              | Status [planned/ in                                                                                                                                                                                                                                                                                                              | Published                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|                              | preparation/published]                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
|                              | Note(s)                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
|                              | If possible, specify link/<br>source                                                                                                                                                                                                                                                                                             | Van Reeth W, Stevens M, Van Gossum P,<br>Maes D, Wils C, (2020) D.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |

|                |                                                | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                           |
|----------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                |                                                | Landgebruiksverandering, in:<br>Natuurrapport 2020: Feiten En Cijfers Voor<br>Een Nieuw Biodiversiteitsbeleid,<br>Mededelingen van Het Instituut Voor<br>Natuur- En Bosonderzoek. Instituut voor<br>Natuur- en Bosonderzoek (in flamish), Link:<br>https://www.vlaanderen.be/publicaties/na<br>tuurrapport-2020 |
| Accounting     | Yes/ no                                        | Yes                                                                                                                                                                                                                                                                                                             |
| spreadsheet(s) | Open access [yes/ no]                          | Yes                                                                                                                                                                                                                                                                                                             |
|                | Status [planned/ in<br>preparation/ published] | Published                                                                                                                                                                                                                                                                                                       |
|                | Note(s)                                        | An accounting spreadsheet has been<br>included in the report above (Tabel 6) and<br>spreadsheets are published online.                                                                                                                                                                                          |
|                | If possible, specify link/<br>source           | https://www.vlaanderen.be/inbo/backgrou<br>ndindicatoren/landgebruiksverandering-<br>ecosysteemvoorraad-corine;<br>https://www.vlaanderen.be/inbo/backgrou<br>ndindicatoren/landgebruiksverandering-<br>ecosysteemvoorraad-landgebruiksbestand-<br>ylaanderen                                                   |
| Map(s)         | Yes/ no                                        |                                                                                                                                                                                                                                                                                                                 |
| (formatted)    | Open access [yes/ no]                          |                                                                                                                                                                                                                                                                                                                 |
|                | Status [planned/ in preparation/ published]    |                                                                                                                                                                                                                                                                                                                 |
|                | Note(s)                                        |                                                                                                                                                                                                                                                                                                                 |
|                | If possible, specify link/                     |                                                                                                                                                                                                                                                                                                                 |
|                | source                                         |                                                                                                                                                                                                                                                                                                                 |
| Geodata        | Yes/ no                                        |                                                                                                                                                                                                                                                                                                                 |
|                | Open access [yes/ no]                          |                                                                                                                                                                                                                                                                                                                 |
|                | Status [planned/ in                            |                                                                                                                                                                                                                                                                                                                 |
|                | preparation/published]                         |                                                                                                                                                                                                                                                                                                                 |
|                | Note(s)                                        |                                                                                                                                                                                                                                                                                                                 |
|                | If possible, specify link/<br>source           |                                                                                                                                                                                                                                                                                                                 |
| Scientific     | Yes/ no                                        |                                                                                                                                                                                                                                                                                                                 |
| publication(s) | Open access [yes/ no]                          |                                                                                                                                                                                                                                                                                                                 |
|                | Status [planned/ in<br>preparation/ published] |                                                                                                                                                                                                                                                                                                                 |
|                | Note(s)                                        |                                                                                                                                                                                                                                                                                                                 |
|                | If possible, specify link/                     |                                                                                                                                                                                                                                                                                                                 |
|                | source                                         |                                                                                                                                                                                                                                                                                                                 |
| Other          | Yes/ no                                        |                                                                                                                                                                                                                                                                                                                 |
| output(s)      | Open access [yes/ no]                          |                                                                                                                                                                                                                                                                                                                 |
|                | Status [planned/ in                            |                                                                                                                                                                                                                                                                                                                 |
|                | preparation/ published]                        |                                                                                                                                                                                                                                                                                                                 |
|                | Note(s)                                        |                                                                                                                                                                                                                                                                                                                 |
|                | If possible, specify link/<br>source           |                                                                                                                                                                                                                                                                                                                 |

| MAIA         | Support through funding                                                  | Yes                                             |  |  |
|--------------|--------------------------------------------------------------------------|-------------------------------------------------|--|--|
| contribution | [yes/ no]                                                                |                                                 |  |  |
|              | Personalized support from                                                | No                                              |  |  |
|              | MAIA community [yes/ no]                                                 |                                                 |  |  |
|              | Support through more                                                     | No                                              |  |  |
|              | than one MAIA activity                                                   |                                                 |  |  |
|              | (such as webinars and                                                    |                                                 |  |  |
|              | workshops) [yes/ no]                                                     |                                                 |  |  |
|              | Support through one MAIA                                                 | Yes                                             |  |  |
|              | activity (such as webinars                                               |                                                 |  |  |
|              | and workshops) [yes/ no]                                                 |                                                 |  |  |
| Notes        | The ecosystem extent has been build based upon two different base        |                                                 |  |  |
|              | datasets: (i) A national dataset on land use, land cover (for which 69   |                                                 |  |  |
|              | national land use land cover types aggregated to 10 ecosystem types) and |                                                 |  |  |
|              | (ii) the EU wide Corine dataset (for which (44 Corine LULC classes are   |                                                 |  |  |
|              | aggregated to 5 ecosystem types). Therefore, two sets of information are |                                                 |  |  |
|              | specified above for e.g. ecosystems, temporal and spatial specifics. s)  |                                                 |  |  |
| References   | Very specific metadata information including input geodata and source    |                                                 |  |  |
|              | code:                                                                    |                                                 |  |  |
|              |                                                                          | <u>/inbo/backgroundindicatoren/landgebruiks</u> |  |  |
|              | verandering-ecosysteemvoo                                                | <u>rraad-landgebruiksbestand-vlaanderen</u>     |  |  |

### 6.1.2. Ecosystem condition account

| Country           |                                                                                                                    | Belgium                                                                                                                                                                        |
|-------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type      |                                                                                                                    | Ecosystem condition account                                                                                                                                                    |
| Account code      |                                                                                                                    | BE_EC_R_1                                                                                                                                                                      |
| Funding partne    | PTS                                                                                                                | VITO and INBO (within the Horizon 2020<br>MAIA project); co-funded by Department for<br>Spatial development, environment, energy,<br>climate, green economy and animal welfare |
| Other involved    | partners                                                                                                           |                                                                                                                                                                                |
|                   | Planned/ ongoing/ done                                                                                             | Ongoing                                                                                                                                                                        |
| Status            | (Estimated) completion date                                                                                        |                                                                                                                                                                                |
| Ecosystems        | Ecosystem types                                                                                                    | Forest ecosystems; waterbodies                                                                                                                                                 |
| Temporal          | Temporal coverage                                                                                                  |                                                                                                                                                                                |
| specifics         | Frequency of updates                                                                                               |                                                                                                                                                                                |
| Spatial specifics | Spatial scale [local, regional, national]                                                                          | Regional                                                                                                                                                                       |
|                   | If sub-national, please specify area                                                                               | Flanders                                                                                                                                                                       |
|                   | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological | Fully spatially explicit                                                                                                                                                       |

|                        |                                                                        | 1                                                                                               |
|------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
|                        | scale, fully spatially<br>explicit]                                    |                                                                                                 |
|                        | If aggregated, please<br>specify administrative or<br>ecological scale | Not applicable                                                                                  |
|                        | Spatial resolution                                                     |                                                                                                 |
|                        | •                                                                      |                                                                                                 |
| Methodology            | I                                                                      |                                                                                                 |
| General<br>description |                                                                        |                                                                                                 |
| Specific               |                                                                        |                                                                                                 |
| software/              |                                                                        |                                                                                                 |
| model/ tool            |                                                                        |                                                                                                 |
| used                   |                                                                        |                                                                                                 |
| Following              | Yes/ partly/no                                                         | Partly                                                                                          |
| SEEA-EA                | If partly, please specify                                              |                                                                                                 |
| guidelines             |                                                                        |                                                                                                 |
| Indicators used        | Yes/ no                                                                | Yes                                                                                             |
|                        | If yes, please specify                                                 | Biological valuation based upon rarity,<br>biological quality, vulnerability,<br>replaceability |
| Aggregation            | Yes/ no                                                                | Yes                                                                                             |
| Aggregation            |                                                                        |                                                                                                 |
|                        | If yes, please specify (e.g.                                           | Categorical index                                                                               |
|                        | aggregation level and method)                                          |                                                                                                 |
| Validation             | Yes/ no                                                                |                                                                                                 |
| process and/           |                                                                        |                                                                                                 |
| or uncertainty         | If yes, please specify                                                 |                                                                                                 |
| assessment             |                                                                        |                                                                                                 |
|                        |                                                                        |                                                                                                 |
| Data source(s)         | Field data                                                             |                                                                                                 |
|                        |                                                                        | mework directive, Marine strategy framework                                                     |
|                        |                                                                        | irective, forest inventory and biotic and                                                       |
|                        | abiotic monitoring n                                                   |                                                                                                 |
|                        |                                                                        |                                                                                                 |
| Output(s)              |                                                                        |                                                                                                 |
| Report(s)              | Yes/ no                                                                |                                                                                                 |
|                        | Open access [yes/ no]                                                  |                                                                                                 |
|                        | Status [planned/ in                                                    |                                                                                                 |
|                        | preparation/ published]                                                |                                                                                                 |
|                        | Note(s)                                                                |                                                                                                 |
|                        | If possible, specify link/                                             |                                                                                                 |
|                        | source                                                                 |                                                                                                 |
| Accounting             | Yes/no                                                                 |                                                                                                 |
| spreadsheet(s)         | Open access [yes/ no]                                                  |                                                                                                 |
|                        | Status [planned/ in                                                    |                                                                                                 |
|                        | preparation/ published]                                                |                                                                                                 |
|                        | Note(s)                                                                |                                                                                                 |
|                        | If possible, specify link/                                             |                                                                                                 |
|                        | source                                                                 |                                                                                                 |
|                        |                                                                        |                                                                                                 |

| Map(s)          | Yes/ no                    |                                                 |
|-----------------|----------------------------|-------------------------------------------------|
| (formatted)     | Open access [yes/ no]      |                                                 |
| (iormaticu)     |                            |                                                 |
|                 | Status [planned/ in        |                                                 |
|                 | preparation/ published]    |                                                 |
|                 | Note(s)                    |                                                 |
|                 | If possible, specify link/ |                                                 |
|                 | source                     |                                                 |
| Geodata         | Yes/ no                    |                                                 |
|                 | Open access [yes/ no]      |                                                 |
|                 | Status [planned/ in        |                                                 |
|                 | preparation/ published]    |                                                 |
|                 | Note(s)                    |                                                 |
|                 | If possible, specify link/ |                                                 |
|                 | source                     |                                                 |
| Scientific      | Yes/ no                    |                                                 |
| publication(s)  | Open access [yes/ no]      |                                                 |
|                 | Status [planned/ in        |                                                 |
|                 | preparation/ published]    |                                                 |
|                 | Note(s)                    |                                                 |
|                 | If possible, specify link/ |                                                 |
|                 | source                     |                                                 |
| Other output(s) | Yes/ no                    |                                                 |
| I CJ            | Open access [yes/ no]      |                                                 |
|                 | Status [planned/ in        |                                                 |
|                 | preparation/ published]    |                                                 |
|                 | Note(s)                    |                                                 |
|                 | If possible, specify link/ |                                                 |
|                 | source                     |                                                 |
|                 | 300100                     |                                                 |
| MAIA            | Support through funding    | Yes                                             |
| contribution    | [yes/ no]                  | 105                                             |
| contribution    | Personalized support from  | No                                              |
|                 | MAIA community [yes/ no]   | 110                                             |
|                 | Support through more       | No                                              |
|                 | than one MAIA activity     | 110                                             |
|                 | (such as webinars and      |                                                 |
|                 | workshops) [yes/ no]       |                                                 |
|                 | Support through one MAIA   | Yes                                             |
|                 | activity (such as webinars |                                                 |
|                 | and workshops) [yes/ no]   |                                                 |
| Notes           |                            |                                                 |
| References      | Stevens, Maarten & Demolde | r, Heidi & Jacobs, Sander & Michels, Helen &    |
| -toror enees    |                            | Ilse & Spanhove, Toon & Van Gossum, Peter &     |
|                 |                            | n, Johan. (2015). English Version: Flanders     |
|                 |                            | nent - State and trends of ecosystems and their |
|                 |                            | dings of the Technical Report.                  |
|                 |                            | 0                                               |

## 6.1.3. Ecosystem service accounts – biophysical

| Country                                      |                                                                                                                                                                                                                                                           | Belgium                                                                                                                                                                        |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type                                 |                                                                                                                                                                                                                                                           | Ecosystem service account (biophysical)                                                                                                                                        |
| Account code                                 |                                                                                                                                                                                                                                                           | BE_ESb_R_1                                                                                                                                                                     |
| Funding partne                               | rs                                                                                                                                                                                                                                                        | VITO and INBO (within the Horizon 2020<br>MAIA project); co-funded by Department for<br>Spatial development, environment, energy,<br>climate, green economy and animal welfare |
| Other involved                               | partners                                                                                                                                                                                                                                                  |                                                                                                                                                                                |
|                                              | Planned/ ongoing/ done                                                                                                                                                                                                                                    | Done                                                                                                                                                                           |
| Status                                       | (Estimated) completion<br>date                                                                                                                                                                                                                            |                                                                                                                                                                                |
| Ecosystems                                   | Ecosystem types                                                                                                                                                                                                                                           | Forests                                                                                                                                                                        |
| Ecosystem<br>service                         | Ecosystem service category                                                                                                                                                                                                                                | Provisioning                                                                                                                                                                   |
|                                              | Ecosystem service                                                                                                                                                                                                                                         | Wood production                                                                                                                                                                |
| Temporal                                     | Temporal coverage                                                                                                                                                                                                                                         | 2013, 2016                                                                                                                                                                     |
| specifics                                    | Frequency of updates                                                                                                                                                                                                                                      | updated every 10 years                                                                                                                                                         |
| Spatial<br>specifics                         | Spatial scale [local, regional, national]                                                                                                                                                                                                                 | Regional                                                                                                                                                                       |
|                                              | If sub-national, please specify area                                                                                                                                                                                                                      | Flanders                                                                                                                                                                       |
|                                              | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]<br>If aggregated, please<br>specify administrative or<br>ecological scale<br>Spatial resolution | Aggregated at administrative scale                                                                                                                                             |
|                                              |                                                                                                                                                                                                                                                           |                                                                                                                                                                                |
| Methodology                                  |                                                                                                                                                                                                                                                           |                                                                                                                                                                                |
| General<br>description                       |                                                                                                                                                                                                                                                           |                                                                                                                                                                                |
| Specific<br>software/<br>model/ tool<br>used |                                                                                                                                                                                                                                                           |                                                                                                                                                                                |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                            | Partly                                                                                                                                                                         |
| SEEA-EA<br>guidelines                        | If partly, please specify                                                                                                                                                                                                                                 |                                                                                                                                                                                |
| Indicators used                              | Yes/ no                                                                                                                                                                                                                                                   | No                                                                                                                                                                             |
|                                              | If yes, please specify                                                                                                                                                                                                                                    |                                                                                                                                                                                |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                                                   | No                                                                                                                                                                             |

|                | If yes, please specify (e.g.             |                                       |
|----------------|------------------------------------------|---------------------------------------|
|                | aggregation level and                    |                                       |
|                | method)                                  |                                       |
| Validation     | Yes/ no                                  | No                                    |
| process and/   | If yes, please specify                   |                                       |
| or uncertainty |                                          |                                       |
| assessment     |                                          |                                       |
|                | L                                        |                                       |
| Data source(s) | National data                            | 1                                     |
|                | Geodata [soil data, cl                   | Imatic dataj                          |
|                | Forest inventory     surveys (European a | verages used for data gaps)           |
|                |                                          | Ecoplan, Natuurwaardeverkenner of     |
|                | Sim4Tree]                                | i Leopian, Natuur waarde verkenner of |
|                | ,,                                       |                                       |
| Output(s)      |                                          |                                       |
| Report(s)      | Yes/ no                                  |                                       |
|                | Open access [yes/ no]                    |                                       |
|                | Status [planned/ in                      |                                       |
|                | preparation/ published]                  |                                       |
|                | Note(s)                                  |                                       |
|                | If possible, specify link/               |                                       |
|                | source                                   |                                       |
| Accounting     | Yes/ no                                  |                                       |
| spreadsheet(s) | Open access [yes/ no]                    |                                       |
|                | Status [planned/ in                      |                                       |
|                | preparation/published]                   |                                       |
|                | Note(s)                                  |                                       |
|                | If possible, specify link/               |                                       |
| Map(s)         | source<br>Yes/ no                        |                                       |
| (formatted)    | Open access [yes/ no]                    |                                       |
| (iormatica)    | Status [planned/ in                      |                                       |
|                | preparation/ published]                  |                                       |
|                | Note(s)                                  |                                       |
|                | If possible, specify link/               |                                       |
|                | source                                   |                                       |
| Geodata        | Yes/ no                                  |                                       |
|                | Open access [yes/ no]                    |                                       |
|                | Status [planned/ in                      |                                       |
|                | preparation/ published]                  |                                       |
|                | Note(s)                                  |                                       |
|                | If possible, specify link/               |                                       |
|                | source                                   |                                       |
| Scientific     | Yes/ no                                  |                                       |
| publication(s) | Open access [yes/ no]                    |                                       |
|                | Status [planned/ in                      |                                       |
|                | preparation/published]                   |                                       |
|                | Note(s)                                  |                                       |

|                 | If possible, specify link/                                                                                                                                                                                                                                                                               |                                                 |  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|--|
|                 |                                                                                                                                                                                                                                                                                                          |                                                 |  |
|                 | source                                                                                                                                                                                                                                                                                                   |                                                 |  |
| Other output(s) | Yes/ no                                                                                                                                                                                                                                                                                                  |                                                 |  |
|                 | Open access [yes/ no]                                                                                                                                                                                                                                                                                    |                                                 |  |
|                 | Status [planned/ in                                                                                                                                                                                                                                                                                      |                                                 |  |
|                 | preparation/ published]                                                                                                                                                                                                                                                                                  |                                                 |  |
|                 | Note(s)                                                                                                                                                                                                                                                                                                  |                                                 |  |
|                 | If possible, specify link/                                                                                                                                                                                                                                                                               |                                                 |  |
|                 | source                                                                                                                                                                                                                                                                                                   |                                                 |  |
|                 |                                                                                                                                                                                                                                                                                                          |                                                 |  |
| MAIA            | Support through funding                                                                                                                                                                                                                                                                                  | Yes                                             |  |
| contribution    | [yes/ no]                                                                                                                                                                                                                                                                                                |                                                 |  |
|                 | Personalized support from                                                                                                                                                                                                                                                                                | No                                              |  |
|                 | MAIA community [yes/ no]                                                                                                                                                                                                                                                                                 |                                                 |  |
|                 | Support through more                                                                                                                                                                                                                                                                                     | No                                              |  |
|                 | than one MAIA activity                                                                                                                                                                                                                                                                                   |                                                 |  |
|                 | (such as webinars and                                                                                                                                                                                                                                                                                    |                                                 |  |
|                 | workshops) [yes/ no]                                                                                                                                                                                                                                                                                     |                                                 |  |
|                 | Support through one MAIA                                                                                                                                                                                                                                                                                 | Yes                                             |  |
|                 | activity (such as webinars                                                                                                                                                                                                                                                                               |                                                 |  |
|                 | and workshops) [yes/ no]                                                                                                                                                                                                                                                                                 |                                                 |  |
| Notes           |                                                                                                                                                                                                                                                                                                          |                                                 |  |
| References      | De Nocker, L., Broekx, S., Lie                                                                                                                                                                                                                                                                           | kens, I., Beckx, C., Dams, J., Hambsch, L., Van |  |
|                 |                                                                                                                                                                                                                                                                                                          |                                                 |  |
|                 |                                                                                                                                                                                                                                                                                                          |                                                 |  |
|                 |                                                                                                                                                                                                                                                                                                          |                                                 |  |
|                 | De Nocker, L., Broekx, S., Liekens, I., Beckx, C., Dams, J., Hambsch, L., Van<br>den Abeele, L., Poelmans, L., De Jong, R., De Smet, L., 2020. Pilootproject<br>Natural Capital Accounting in Vlaanderen. Studie uitgevoerd in opdracht<br>van het Departement Omgeving, Vlaams Planbureau voor Omgeving |                                                 |  |

| Country          |                              | Belgium                                                                                                                                                                        |
|------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type     |                              | Ecosystem service account (biophysical)                                                                                                                                        |
| Account code     |                              | BE_ESb_R_2                                                                                                                                                                     |
| Funding partners |                              | VITO and INBO (within the Horizon 2020<br>MAIA project); co-funded by Department for<br>Spatial development, environment, energy,<br>climate, green economy and animal welfare |
| Other involved   | partners                     |                                                                                                                                                                                |
|                  | Planned/ ongoing/ done       | Done                                                                                                                                                                           |
| Status           | (Estimated) completion       |                                                                                                                                                                                |
|                  | date                         |                                                                                                                                                                                |
| Ecosystems       | Ecosystem types              | Forest ecosystems; coastal ecosystems                                                                                                                                          |
| Ecosystem        | Ecosystem service            | Regulating                                                                                                                                                                     |
| service          | category                     |                                                                                                                                                                                |
|                  | Ecosystem service            | Carbon storage in biomass                                                                                                                                                      |
| Temporal         | Temporal coverage            | 2013, 2016                                                                                                                                                                     |
| specifics        | Frequency of updates         | one time study                                                                                                                                                                 |
| Spatial          | Spatial scale <i>[local,</i> | Regional                                                                                                                                                                       |
| specifics        | regional, national]          |                                                                                                                                                                                |
|                  | If sub-national, please      | Flanders                                                                                                                                                                       |
|                  | specify area                 |                                                                                                                                                                                |

|                 | Spatial coverage [not<br>spatially explicit,<br>aggregated at | Aggregated at administrative scale     |
|-----------------|---------------------------------------------------------------|----------------------------------------|
|                 | administrative scale,                                         |                                        |
|                 | aggregated at ecological                                      |                                        |
|                 | scale, fully spatially                                        |                                        |
|                 | explicit]                                                     |                                        |
|                 | If aggregated, please                                         |                                        |
|                 | specify administrative or                                     |                                        |
|                 | ecological scale                                              |                                        |
|                 | Spatial resolution                                            |                                        |
| Methodology     |                                                               |                                        |
| General         |                                                               |                                        |
| description     |                                                               |                                        |
| Specific        |                                                               |                                        |
| software/       |                                                               |                                        |
| model/ tool     |                                                               |                                        |
| used            |                                                               |                                        |
| Following       | Yes/ partly/no                                                | Partly                                 |
| SEEA-EA         | If partly, please specify                                     | -                                      |
| guidelines      |                                                               |                                        |
| Indicators used | Yes/ no                                                       |                                        |
|                 | If yes, please specify                                        |                                        |
| Aggregation     | Yes/ no                                                       |                                        |
|                 | If yes, please specify (e.g.<br>aggregation level and         |                                        |
| Validation      | method)                                                       |                                        |
| process and/    | Yes/ no                                                       |                                        |
| or uncertainty  | If yes, please specify                                        |                                        |
| assessment      |                                                               |                                        |
|                 |                                                               |                                        |
| Data source(s)  | Emissions of LULUCI                                           | (https://www.vmm.be/data/emissies-per- |
|                 | sector/sector-lulucf                                          |                                        |
|                 | Forest inventory                                              | ,                                      |
|                 | · · · · · · · · · · · · · · · · · · ·                         |                                        |
| Output(s)       |                                                               |                                        |
| Report(s)       | Yes/ no                                                       |                                        |
|                 | Open access [yes/ no]                                         |                                        |
|                 | Status [planned/ in                                           |                                        |
|                 | preparation/ published]                                       |                                        |
|                 | Note(s)                                                       |                                        |
|                 | If possible, specify link/                                    |                                        |
|                 | source                                                        |                                        |
| Accounting      | Yes/ no                                                       |                                        |
| spreadsheet(s)  | Open access [yes/ no]                                         |                                        |
|                 | Status [planned/ in                                           |                                        |
|                 | preparation/ published]                                       |                                        |
|                 | Note(s)                                                       |                                        |
|                 | Note(s)                                                       |                                        |

|                 | If possible, specify link/                                                  |                                                 |
|-----------------|-----------------------------------------------------------------------------|-------------------------------------------------|
|                 | source                                                                      |                                                 |
| Map(s)          | Yes/no                                                                      |                                                 |
| (formatted)     | Open access [yes/ no]                                                       |                                                 |
|                 | Status [planned/ in                                                         |                                                 |
|                 | preparation/ published]                                                     |                                                 |
|                 | Note(s)                                                                     |                                                 |
|                 | If possible, specify link/                                                  |                                                 |
|                 | source                                                                      |                                                 |
| Geodata         | Yes/ no                                                                     |                                                 |
|                 | Open access [yes/ no]                                                       |                                                 |
|                 | Status [planned/ in                                                         |                                                 |
|                 | preparation/ published]                                                     |                                                 |
|                 | Note(s)                                                                     |                                                 |
|                 | If possible, specify link/                                                  |                                                 |
|                 | source                                                                      |                                                 |
| Scientific      | Yes/ no                                                                     |                                                 |
| publication(s)  | Open access [yes/ no]                                                       |                                                 |
|                 | Status [planned/ in                                                         |                                                 |
|                 | preparation/ published]                                                     |                                                 |
|                 | Note(s)                                                                     |                                                 |
|                 | If possible, specify link/                                                  |                                                 |
|                 | source                                                                      |                                                 |
| Other output(s) | Yes/ no                                                                     |                                                 |
|                 | Open access [yes/ no]                                                       |                                                 |
|                 | Status [planned/ in                                                         |                                                 |
|                 | preparation/ published]                                                     |                                                 |
|                 | Note(s)                                                                     |                                                 |
|                 | If possible, specify link/                                                  |                                                 |
|                 | source                                                                      |                                                 |
|                 |                                                                             |                                                 |
| MAIA            | Support through funding                                                     | Yes                                             |
| contribution    | [yes/no]                                                                    | N                                               |
|                 | Personalized support from                                                   | No                                              |
|                 | MAIA community [yes/ no]                                                    | No                                              |
|                 | Support through more than one MAIA activity                                 |                                                 |
|                 | (such as webinars and                                                       |                                                 |
|                 | workshops) [yes/ no]                                                        |                                                 |
|                 | Support through one MAIA                                                    | Yes                                             |
|                 | activity (such as webinars                                                  |                                                 |
|                 | and workshops) [yes/ no]                                                    |                                                 |
| Notes           |                                                                             | · · · · · · · · · · · · · · · · · · ·           |
| References      | De Nocker, L., Broekx, S., Lie                                              | kens, I., Beckx, C., Dams, J., Hambsch, L., Van |
|                 | den Abeele, L., Poelmans, L., De Jong, R., De Smet, L., 2020. Pilootproject |                                                 |
|                 | Natural Capital Accounting in Vlaanderen. Studie uitgevoerd in opdracht     |                                                 |
|                 | van het Departement Omgeving, Vlaams Planbureau voor Omgeving               |                                                 |

| Country                                                    |                                                                                                                    | Belgium                                                                                                                                                                        |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type                                               |                                                                                                                    | Ecosystem service account (biophysical)                                                                                                                                        |
| Account code                                               |                                                                                                                    | BE_ESb_R_3                                                                                                                                                                     |
| Funding partners                                           |                                                                                                                    | VITO and INBO (within the Horizon 2020<br>MAIA project); co-funded by Department for<br>Spatial development, environment, energy,<br>climate, green economy and animal welfare |
| Other involved                                             | partners                                                                                                           |                                                                                                                                                                                |
|                                                            | Planned/ ongoing/ done                                                                                             | Done                                                                                                                                                                           |
| Status                                                     | (Estimated) completion date                                                                                        | Not applicable                                                                                                                                                                 |
| Ecosystems                                                 | Ecosystem types                                                                                                    | All (terrestrial) ecosystems                                                                                                                                                   |
| Ecosystem<br>service                                       | Ecosystem service<br>category                                                                                      | Provisioning                                                                                                                                                                   |
|                                                            | Ecosystem service                                                                                                  | Water availability                                                                                                                                                             |
| Temporal                                                   | Temporal coverage                                                                                                  | 2013, 2016                                                                                                                                                                     |
| specifics                                                  | Frequency of updates                                                                                               | One time study                                                                                                                                                                 |
| Spatial                                                    | Spatial scale <i>[local,</i>                                                                                       | Regional                                                                                                                                                                       |
| specifics                                                  | <i>regional, national]</i><br>If sub-national, please                                                              | Flanders                                                                                                                                                                       |
|                                                            | specify area                                                                                                       | Flanders                                                                                                                                                                       |
|                                                            | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological | Fully spatially explicit                                                                                                                                                       |
|                                                            | scale, fully spatially<br>explicit]<br>If aggregated, please<br>specify administrative or<br>ecological scale      | Not applicable                                                                                                                                                                 |
|                                                            | Spatial resolution                                                                                                 |                                                                                                                                                                                |
| Mothodology                                                |                                                                                                                    |                                                                                                                                                                                |
| Methodology<br>General                                     | Croundwater rachange made                                                                                          | elled with WetSpass model, simple allocation                                                                                                                                   |
| description<br>Specific<br>software/<br>model/tool<br>used | e                                                                                                                  | ked to particular annual extraction                                                                                                                                            |
| Following                                                  | Yes/ partly/no                                                                                                     | Partly                                                                                                                                                                         |
| SEEA-EA<br>guidelines                                      | If partly, please specify                                                                                          |                                                                                                                                                                                |
| Indicators used                                            | Yes/ no                                                                                                            | Yes                                                                                                                                                                            |
|                                                            | If yes, please specify                                                                                             | Amount of extracted drinking water<br>(m3/year)                                                                                                                                |
| Aggregation                                                | Yes/ no                                                                                                            | No                                                                                                                                                                             |
|                                                            | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                   | Not applicable                                                                                                                                                                 |

| Validation                                   | Yes/ no                                                                                                                                                                      | Yes                                          |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                       | Comparison of measured and modelled runoff   |
|                                              |                                                                                                                                                                              |                                              |
| Data source(s)                               | <ul> <li>Land use data</li> <li>Elevation data</li> <li>Soil data</li> <li>Statistical data</li> <li>Climatic data [precip wind speed]</li> <li>Ground water data</li> </ul> | itation, potential evaporation, temperature, |
| Output(s)                                    |                                                                                                                                                                              |                                              |
| Report(s)                                    | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source                                        |                                              |
| Accounting<br>spreadsheet(s)                 | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source                                        |                                              |
| Map(s)<br>(formatted)                        | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source                                        |                                              |
| Geodata                                      | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source                                        |                                              |
| Scientific<br>publication(s)                 | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source                                        |                                              |

| Other output(s) | Yes/ no                                                                                                                                                                                                                 |     |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|                 | Open access [yes/ no]                                                                                                                                                                                                   |     |
|                 | Status [planned/ in                                                                                                                                                                                                     |     |
|                 | preparation/ published]                                                                                                                                                                                                 |     |
|                 | Note(s)                                                                                                                                                                                                                 |     |
|                 | If possible, specify link/                                                                                                                                                                                              |     |
|                 | source                                                                                                                                                                                                                  |     |
|                 |                                                                                                                                                                                                                         |     |
| MAIA            | Support through funding                                                                                                                                                                                                 | Yes |
| contribution    | [yes/ no]                                                                                                                                                                                                               |     |
|                 | Personalized support from                                                                                                                                                                                               | No  |
|                 | MAIA community [yes/ no]                                                                                                                                                                                                |     |
|                 | Support through more                                                                                                                                                                                                    | Yes |
|                 | than one MAIA activity                                                                                                                                                                                                  |     |
|                 | (such as webinars and                                                                                                                                                                                                   |     |
|                 | workshops) [yes/ no]                                                                                                                                                                                                    |     |
|                 | Support through one MAIA                                                                                                                                                                                                | No  |
|                 | activity (such as webinars                                                                                                                                                                                              |     |
|                 | and workshops) [yes/ no]                                                                                                                                                                                                |     |
| Notes           |                                                                                                                                                                                                                         |     |
| References      | De Nocker, L., Broekx, S., Liekens, I., Beckx, C., Dams, J., Hambsch, L., Van                                                                                                                                           |     |
|                 | den Abeele, L., Poelmans, L., De Jong, R., De Smet, L., 2020. Pilootproject<br>Natural Capital Accounting in Vlaanderen. Studie uitgevoerd in opdracht<br>van het Departement Omgeving, Vlaams Planbureau voor Omgeving |     |
|                 |                                                                                                                                                                                                                         |     |
|                 |                                                                                                                                                                                                                         |     |

| Country              |                                           | Belgium                                                                                                                                                                        |
|----------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type         |                                           | Ecosystem service account (biophysical)                                                                                                                                        |
| Account code         |                                           | BE_ESb_R_4                                                                                                                                                                     |
| Funding partners     |                                           | VITO and INBO (within the Horizon 2020<br>MAIA project); co-funded by Department for<br>Spatial development, environment, energy,<br>climate, green economy and animal welfare |
| Other involved       | partners                                  |                                                                                                                                                                                |
|                      | Planned/ ongoing/ done                    | Done                                                                                                                                                                           |
| Status               | (Estimated) completion date               |                                                                                                                                                                                |
| Ecosystems           | Ecosystem types                           | All (terrestrial) ecosystems                                                                                                                                                   |
| Ecosystem<br>service | Ecosystem service<br>category             | Cultural                                                                                                                                                                       |
|                      | Ecosystem service                         | Health benefits of green and blue areas in the living environment                                                                                                              |
| Temporal             | Temporal coverage                         | 2013, 2016                                                                                                                                                                     |
| specifics            | Frequency of updates                      | One time study                                                                                                                                                                 |
| Spatial specifics    | Spatial scale [local, regional, national] | Regional                                                                                                                                                                       |
|                      | If sub-national, please specify area      | Flanders                                                                                                                                                                       |

|                                              |                                                                                                                                                                                                                                     | гv                                              |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
|                                              | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]<br>If aggregated, please<br>specify administrative or<br>ecological scale | Aggregated at administrative scale              |
|                                              |                                                                                                                                                                                                                                     |                                                 |
|                                              | Spatial resolution                                                                                                                                                                                                                  |                                                 |
| Mathadalam                                   |                                                                                                                                                                                                                                     |                                                 |
| Methodology<br>General                       | D                                                                                                                                                                                                                                   |                                                 |
| description<br>Specific                      | number of inhabitants                                                                                                                                                                                                               | age of generic data on morbidity, mortality and |
| software/<br>model/tool<br>used              |                                                                                                                                                                                                                                     |                                                 |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                      | Partly                                          |
| SEEA-EA<br>guidelines                        | If partly, please specify                                                                                                                                                                                                           |                                                 |
| Indicators used                              | Yes/ no                                                                                                                                                                                                                             | Yes                                             |
|                                              | If yes, please specify                                                                                                                                                                                                              | Disease-adjusted life years (DALYs)             |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                             | No                                              |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                    |                                                 |
| Validation                                   | Yes/ no                                                                                                                                                                                                                             | No                                              |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                              |                                                 |
|                                              |                                                                                                                                                                                                                                     |                                                 |
| Data source(s)                               | <ul> <li>Administrative data</li> <li>census data</li> <li>prevalence data</li> <li>geodata</li> </ul>                                                                                                                              |                                                 |
| Output(c)                                    |                                                                                                                                                                                                                                     |                                                 |
| Output(s)                                    | V /                                                                                                                                                                                                                                 |                                                 |
| Report(s)                                    | Yes/ no                                                                                                                                                                                                                             |                                                 |
|                                              | Open access [yes/ no]                                                                                                                                                                                                               |                                                 |
|                                              | Status [planned/ in                                                                                                                                                                                                                 |                                                 |
|                                              | preparation/published]                                                                                                                                                                                                              |                                                 |
|                                              | Note(s)                                                                                                                                                                                                                             |                                                 |
|                                              | If possible, specify link/                                                                                                                                                                                                          |                                                 |
| Accounting                                   | source                                                                                                                                                                                                                              |                                                 |
| Accounting<br>spreadsheet(s)                 | Yes/no                                                                                                                                                                                                                              |                                                 |
|                                              | Open access [yes/ no]                                                                                                                                                                                                               |                                                 |
|                                              | Status [planned/ in<br>preparation/ published]                                                                                                                                                                                      |                                                 |

|                 | Noto(a)                                                                                                                                                      |                                         |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
|                 | Note(s)                                                                                                                                                      |                                         |
|                 | If possible, specify link/                                                                                                                                   |                                         |
| Map(s)          | source<br>Yes/ no                                                                                                                                            |                                         |
| (formatted)     |                                                                                                                                                              |                                         |
| (iormatteu)     | Open access [yes/ no]                                                                                                                                        |                                         |
|                 | Status [planned/ in                                                                                                                                          |                                         |
|                 | preparation/published]                                                                                                                                       |                                         |
|                 | Note(s)                                                                                                                                                      |                                         |
|                 | If possible, specify link/<br>source                                                                                                                         |                                         |
| Geodata         | Yes/ no                                                                                                                                                      |                                         |
| Geollata        |                                                                                                                                                              |                                         |
|                 | Open access [yes/ no]                                                                                                                                        |                                         |
|                 | Status [planned/ in<br>preparation/ published]                                                                                                               |                                         |
|                 | Note(s)                                                                                                                                                      |                                         |
|                 | If possible, specify link/                                                                                                                                   |                                         |
|                 | source                                                                                                                                                       |                                         |
| Scientific      | Yes/ no                                                                                                                                                      |                                         |
| publication(s)  | Open access [yes/ no]                                                                                                                                        |                                         |
| Provide Co      | Status [planned/ in                                                                                                                                          |                                         |
|                 | preparation/ published]                                                                                                                                      |                                         |
|                 | Note(s)                                                                                                                                                      |                                         |
|                 | If possible, specify link/                                                                                                                                   |                                         |
|                 | source                                                                                                                                                       |                                         |
| Other output(s) | Yes/no                                                                                                                                                       |                                         |
| 1 ()            | Open access [yes/ no]                                                                                                                                        |                                         |
|                 | Status [planned/ in                                                                                                                                          |                                         |
|                 | preparation/ published]                                                                                                                                      |                                         |
|                 | Note(s)                                                                                                                                                      |                                         |
|                 | If possible, specify link/                                                                                                                                   |                                         |
|                 | source                                                                                                                                                       |                                         |
|                 |                                                                                                                                                              |                                         |
| MAIA            | Support through funding                                                                                                                                      | Yes                                     |
| contribution    | [yes/ no]                                                                                                                                                    |                                         |
|                 | Personalized support from                                                                                                                                    | No                                      |
|                 | MAIA community [yes/ no]                                                                                                                                     |                                         |
|                 | Support through more                                                                                                                                         | Yes                                     |
|                 | than one MAIA activity                                                                                                                                       |                                         |
|                 | (such as webinars and                                                                                                                                        |                                         |
|                 | workshops) <i>[yes/ no]</i><br>Support through one MAIA                                                                                                      | No                                      |
|                 | activity (such as webinars                                                                                                                                   | NU                                      |
|                 | and workshops) [yes/ no]                                                                                                                                     |                                         |
| Notes           |                                                                                                                                                              | l                                       |
| References      | De Nocker I. Broeky S. Liel                                                                                                                                  | kens I. Becky (° Dams I. Hambsch I. Van |
| neier chees     | De Nocker, L., Broekx, S., Liekens, I., Beckx, C., Dams, J., Hambsch, L., Van<br>den Abeele, L., Poelmans, L., De Jong, R., De Smet, L., 2020. Pilootproject |                                         |
|                 | Natural Capital Accounting in Vlaanderen. Studie uitgevoerd in opdracht                                                                                      |                                         |
|                 | van het Departement Omgeving, Vlaams Planbureau voor Omgeving                                                                                                |                                         |

## 6.1.4. Ecosystem service accounts - monetary

| Country                                     |                                                                                                                                                                                                                 | Belgium                                                                                                                                                                        |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type                                |                                                                                                                                                                                                                 | Ecosystem service account (monetary)                                                                                                                                           |
| Account code                                |                                                                                                                                                                                                                 | BE_ESm_R_1                                                                                                                                                                     |
| Funding partners                            |                                                                                                                                                                                                                 | VITO and INBO (within the Horizon 2020<br>MAIA project); co-funded by Department for<br>Spatial development, environment, energy,<br>climate, green economy and animal welfare |
| Other involved                              | partners                                                                                                                                                                                                        |                                                                                                                                                                                |
|                                             | Planned/ ongoing/ done                                                                                                                                                                                          | Done                                                                                                                                                                           |
| Status                                      | (Estimated) completion<br>date                                                                                                                                                                                  |                                                                                                                                                                                |
| Ecosystems                                  | Ecosystem types                                                                                                                                                                                                 | Forests                                                                                                                                                                        |
| Ecosystem<br>service                        | Ecosystem service<br>category                                                                                                                                                                                   | Provisioning                                                                                                                                                                   |
|                                             | Ecosystem service                                                                                                                                                                                               | Wood production                                                                                                                                                                |
| Temporal                                    | Temporal coverage                                                                                                                                                                                               | 2013, 2016                                                                                                                                                                     |
| specifics                                   | Frequency of updates                                                                                                                                                                                            | Updated every 10 years                                                                                                                                                         |
| Spatial specifics                           | Spatial scale [local, regional, national]                                                                                                                                                                       | Regional                                                                                                                                                                       |
|                                             | If sub-national, please specify area                                                                                                                                                                            | Flanders                                                                                                                                                                       |
|                                             | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]<br>If aggregated, please<br>specify administrative or | Aggregated at administrative scale                                                                                                                                             |
|                                             | ecological scale                                                                                                                                                                                                |                                                                                                                                                                                |
|                                             | Spatial resolution                                                                                                                                                                                              |                                                                                                                                                                                |
|                                             |                                                                                                                                                                                                                 | 1                                                                                                                                                                              |
| Methodology                                 |                                                                                                                                                                                                                 |                                                                                                                                                                                |
| General<br>description                      | Resource-rent approach, expert evaluation                                                                                                                                                                       |                                                                                                                                                                                |
| Specific<br>software/<br>model/tool<br>used |                                                                                                                                                                                                                 |                                                                                                                                                                                |
| Following                                   | Yes/ partly/no                                                                                                                                                                                                  | Partly                                                                                                                                                                         |
| SEEA-EA<br>guidelines                       | If partly, please specify                                                                                                                                                                                       |                                                                                                                                                                                |
| Indicators used                             | Yes/ no                                                                                                                                                                                                         | No                                                                                                                                                                             |
|                                             | If yes, please specify                                                                                                                                                                                          |                                                                                                                                                                                |
| Aggregation                                 | Yes/ no                                                                                                                                                                                                         | No                                                                                                                                                                             |

|                |                                                                     | ,                                    |
|----------------|---------------------------------------------------------------------|--------------------------------------|
|                | If yes, please specify (e.g.                                        |                                      |
|                | aggregation level and                                               |                                      |
|                | method)                                                             |                                      |
| Validation     | Yes/ no                                                             | No                                   |
| process and/   | If yes, please specify                                              |                                      |
| or uncertainty |                                                                     |                                      |
| assessment     |                                                                     |                                      |
| Data assess(a) |                                                                     |                                      |
| Data source(s) | National data     Economic statistics                               | on the forestmy coston               |
|                |                                                                     | on the forestry sector               |
|                | <ul> <li>Forest inventory,</li> <li>Surveys (European c)</li> </ul> | overages used for data gaps)         |
|                |                                                                     | s Ecoplan, Natuurwaardeverkenner of  |
|                | Sim4Tree]                                                           | s Ecopian, Natuul waarueverkenner of |
|                | Simme                                                               |                                      |
| Output(s)      |                                                                     |                                      |
| Report(s)      | Yes/ no                                                             |                                      |
| Report(s)      | Open access [yes/ no]                                               |                                      |
|                |                                                                     |                                      |
|                | Status [planned/ in preparation/ published]                         |                                      |
|                | Note(s)                                                             |                                      |
|                | If possible, specify link/                                          |                                      |
|                | source                                                              |                                      |
| Accounting     | Yes/no                                                              |                                      |
| spreadsheet(s) | Open access [yes/ no]                                               |                                      |
|                | Status [planned/ in                                                 |                                      |
|                | preparation/ published]                                             |                                      |
|                | Note(s)                                                             |                                      |
|                | If possible, specify link/                                          |                                      |
|                | source                                                              |                                      |
| Map(s)         | Yes/no                                                              |                                      |
| (formatted)    | Open access [yes/ no]                                               |                                      |
|                | Status [planned/ in                                                 |                                      |
|                | preparation/ published]                                             |                                      |
|                | Note(s)                                                             |                                      |
|                | If possible, specify link/                                          |                                      |
|                | source                                                              |                                      |
| Geodata        | Yes/ no                                                             |                                      |
|                | Open access [yes/ no]                                               |                                      |
|                | Status [planned/ in                                                 |                                      |
|                | preparation/ published]                                             |                                      |
|                | Note(s)                                                             |                                      |
|                | If possible, specify link/                                          |                                      |
|                | source                                                              |                                      |
| Scientific     | Yes/ no                                                             |                                      |
| publication(s) | Open access [yes/ no]                                               |                                      |
|                | Status [planned/ in                                                 |                                      |
|                | preparation/ published]                                             |                                      |
|                | Note(s)                                                             |                                      |
|                |                                                                     |                                      |

| If no acialo, and cify link /                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Yes/ no                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Open access [yes/ no]                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Status [planned/ in                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| preparation/ published]                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Note(s)                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| If possible, specify link/                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| source                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Support through funding                                                       | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| [yes/ no]                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Personalized support from                                                     | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| MAIA community [yes/ no]                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Support through more                                                          | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| than one MAIA activity                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| (such as webinars and                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                               | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| De Nocker, L., Broekx, S., Liekens, I., Beckx, C., Dams, J., Hambsch, L., Van |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| den Abeele, L., Poelmans, L., De Jong, R., De Smet, L., 2020. Pilootproject   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Natural Capital Accounting in Vlaanderen. Studie uitgevoerd in opdracht       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| van het Departement Omgeving, Vlaams Planbureau voor Omgeving                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                               | Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Support through funding<br>[yes/ no]<br>Personalized support from<br>MAIA community [yes/ no]<br>Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no]<br>Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no]<br>De Nocker, L., Broekx, S., Liel<br>den Abeele, L., Poelmans, L.,<br>Natural Capital Accounting in |

| Country                 |                              | Belgium                                    |
|-------------------------|------------------------------|--------------------------------------------|
| Account type            |                              | Ecosystem service account (monetary)       |
| Account code            |                              | BE_ESm_R_2                                 |
| Funding partners        |                              | VITO and INBO (within the Horizon 2020     |
|                         |                              | MAIA project); co-funded by Department for |
|                         |                              | Spatial development, environment, energy,  |
|                         |                              | climate, green economy and animal welfare  |
| Other involved partners |                              |                                            |
|                         | Planned/ ongoing/ done       | Done                                       |
| Status                  | (Estimated) completion       |                                            |
|                         | date                         |                                            |
| Ecosystems              | Ecosystem types              | Forests, coastal ecosystems                |
| Ecosystem               | Ecosystem service            | Regulating                                 |
| service                 | category                     |                                            |
|                         | Ecosystem service            | Carbon storage in biomass                  |
| Temporal                | Temporal coverage            | 2013, 2016                                 |
| specifics               | Frequency of updates         | one time study                             |
| Spatial                 | Spatial scale <i>[local,</i> | Regional                                   |
| specifics               | regional, national]          |                                            |
|                         | If sub-national, please      | Flanders                                   |
|                         | specify area                 |                                            |

|                 |                              | 1 1                                |
|-----------------|------------------------------|------------------------------------|
|                 | Spatial coverage [not        | Aggregated at administrative scale |
|                 | spatially explicit,          |                                    |
|                 | aggregated at                |                                    |
|                 | administrative scale,        |                                    |
|                 | aggregated at ecological     |                                    |
|                 | scale, fully spatially       |                                    |
|                 | explicit]                    |                                    |
|                 | If aggregated, please        |                                    |
|                 | specify administrative or    |                                    |
|                 | ecological scale             |                                    |
|                 | Spatial resolution           |                                    |
|                 |                              |                                    |
| Methodology     |                              |                                    |
| General         | market price                 |                                    |
| description     |                              |                                    |
| Specific        |                              |                                    |
| software/       |                              |                                    |
| model/ tool     |                              |                                    |
| used            |                              |                                    |
| Following       | Yes/ partly/no               | Partly                             |
| SEEA-EA         | If partly, please specify    |                                    |
| guidelines      |                              |                                    |
| Indicators used | Yes/ no                      | No                                 |
|                 | If yes, please specify       |                                    |
| Aggregation     | Yes/ no                      | No                                 |
|                 | If yes, please specify (e.g. |                                    |
|                 | aggregation level and        |                                    |
|                 | method)                      |                                    |
| Validation      | Yes/ no                      | No                                 |
| process and/    | If yes, please specify       |                                    |
| or uncertainty  |                              |                                    |
| assessment      |                              |                                    |
|                 |                              |                                    |
| Data source(s)  | CO2eq. price from Er         | nission Trading Schemes (ETS)      |
|                 |                              |                                    |
| Output(s)       |                              |                                    |
| Report(s)       | Yes/ no                      |                                    |
|                 | Open access [yes/ no]        |                                    |
|                 | Status [planned/ in          |                                    |
|                 | preparation/ published]      |                                    |
|                 | Note(s)                      |                                    |
|                 | If possible, specify link/   |                                    |
|                 | source                       |                                    |
| Accounting      | Yes/ no                      |                                    |
| spreadsheet(s)  | Open access [yes/ no]        |                                    |
|                 |                              |                                    |
|                 | Status [planned/ in          |                                    |
|                 | preparation/published]       |                                    |
|                 | Note(s)                      |                                    |
|                 | If possible, specify link/   |                                    |
|                 | source                       |                                    |

| Map(s)          | Yes/no                                                                        |                                      |  |
|-----------------|-------------------------------------------------------------------------------|--------------------------------------|--|
| (formatted)     | Open access [yes/ no]                                                         |                                      |  |
| (ioimatteu)     | Status [planned/ in                                                           |                                      |  |
|                 | preparation/ published]                                                       |                                      |  |
|                 |                                                                               |                                      |  |
|                 | Note(s)                                                                       |                                      |  |
|                 | If possible, specify link/                                                    |                                      |  |
|                 | source                                                                        |                                      |  |
| Geodata         | Yes/no                                                                        |                                      |  |
|                 | Open access [yes/ no]                                                         |                                      |  |
|                 | Status [planned/ in                                                           |                                      |  |
|                 | preparation/ published]                                                       |                                      |  |
|                 | Note(s)                                                                       |                                      |  |
|                 | If possible, specify link/                                                    |                                      |  |
|                 | source                                                                        |                                      |  |
| Scientific      | Yes/ no                                                                       |                                      |  |
| publication(s)  | Open access [yes/ no]                                                         |                                      |  |
|                 | Status [planned/ in                                                           |                                      |  |
|                 | preparation/ published]                                                       |                                      |  |
|                 | Note(s)                                                                       |                                      |  |
|                 | If possible, specify link/                                                    |                                      |  |
|                 | source                                                                        |                                      |  |
| Other output(s) | Yes/ no                                                                       |                                      |  |
| 1 ()            | Open access [yes/ no]                                                         |                                      |  |
|                 | Status [planned/ in                                                           |                                      |  |
|                 | preparation/ published]                                                       |                                      |  |
|                 | Note(s)                                                                       |                                      |  |
|                 | If possible, specify link/                                                    |                                      |  |
|                 | source                                                                        |                                      |  |
|                 | bource                                                                        |                                      |  |
| MAIA            | Support through funding                                                       | Yes                                  |  |
| contribution    | [yes/no]                                                                      |                                      |  |
|                 | Personalized support from                                                     | No                                   |  |
|                 | MAIA community [yes/ no]                                                      |                                      |  |
|                 | Support through more                                                          | No                                   |  |
|                 | than one MAIA activity                                                        |                                      |  |
|                 | (such as webinars and                                                         |                                      |  |
|                 | workshops) [yes/ no]                                                          |                                      |  |
|                 | Support through one MAIA                                                      | Yes                                  |  |
|                 | activity (such as webinars                                                    |                                      |  |
|                 | and workshops) <i>[yes/ no]</i>                                               |                                      |  |
| Notes           |                                                                               |                                      |  |
| References      | De Nocker, L., Broekx, S., Liekens, I., Beckx, C., Dams, J., Hambsch, L., Van |                                      |  |
|                 | den Abeele, L., Poelmans, L., De Jong, R., De Smet, L., 2020. Pilootproject   |                                      |  |
|                 | Natural Capital Accounting in Vlaanderen. Studie uitgevoerd in opdracht       |                                      |  |
|                 | van het Departement Omgev                                                     | ing, Vlaams Planbureau voor Omgeving |  |

| Country      | Belgium                              |
|--------------|--------------------------------------|
| Account type | Ecosystem service account (monetary) |

| Account code                                 |                                                                                                                                                           | BE_ESm_R_3                                                                                                                                                                     |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Funding partne                               | rs                                                                                                                                                        | VITO and INBO (within the Horizon 2020<br>MAIA project); co-funded by Department for<br>Spatial development, environment, energy,<br>climate, green economy and animal welfare |
| Other involved                               | partners                                                                                                                                                  |                                                                                                                                                                                |
|                                              | Planned/ ongoing/ done                                                                                                                                    | Done                                                                                                                                                                           |
| Status                                       | (Estimated) completion date                                                                                                                               | Not applicable                                                                                                                                                                 |
| Ecosystems                                   | Ecosystem types                                                                                                                                           | All (terrestrial) ecosystems                                                                                                                                                   |
| Ecosystem<br>service                         | Ecosystem service<br>category                                                                                                                             | Provisioning<br>Water evailability                                                                                                                                             |
| Tomporal                                     | Ecosystem service                                                                                                                                         | Water availability                                                                                                                                                             |
| Temporal specifics                           | Temporal coverage                                                                                                                                         | 2013, 2016                                                                                                                                                                     |
| -                                            | Frequency of updates                                                                                                                                      | One time study                                                                                                                                                                 |
| Spatial specifics                            | Spatial scale [local, regional, national]                                                                                                                 | Regional                                                                                                                                                                       |
| op comos                                     | If sub-national, please specify area                                                                                                                      | Flanders                                                                                                                                                                       |
|                                              | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit] | Fully spatially explicit                                                                                                                                                       |
|                                              | If aggregated, please<br>specify administrative or<br>ecological scale<br>Spatial resolution                                                              | Not applicable                                                                                                                                                                 |
|                                              | 1                                                                                                                                                         |                                                                                                                                                                                |
| Methodology                                  |                                                                                                                                                           |                                                                                                                                                                                |
| General<br>description                       | Resource-rent approach, ex                                                                                                                                | pert evaluation                                                                                                                                                                |
| Specific<br>software/<br>model/ tool<br>used |                                                                                                                                                           |                                                                                                                                                                                |
| Following                                    | Yes/ partly/no                                                                                                                                            | Partly                                                                                                                                                                         |
| SEEA-EA<br>guidelines                        | If partly, please specify                                                                                                                                 |                                                                                                                                                                                |
| Indicators used                              | Yes/ no                                                                                                                                                   | Yes                                                                                                                                                                            |
| indicators used                              | If yes, please specify                                                                                                                                    | Health benefits                                                                                                                                                                |
| Aggregation                                  | Yes/ no                                                                                                                                                   | No                                                                                                                                                                             |
| 11561 CEAUOII                                | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                          |                                                                                                                                                                                |
| Validation                                   | Yes/ no                                                                                                                                                   | No                                                                                                                                                                             |
| process and/                                 | If yes, please specify                                                                                                                                    |                                                                                                                                                                                |

| or uncertainty    |                                             |   |
|-------------------|---------------------------------------------|---|
| assessment        |                                             |   |
| <u>assessment</u> |                                             |   |
| Data source(s)    | Γ                                           |   |
| Data source(s)    |                                             |   |
| 0 ( )             |                                             |   |
| Output(s)         |                                             |   |
| Report(s)         | Yes/ no                                     |   |
|                   | Open access [yes/ no]                       |   |
|                   | Status [planned/ in                         |   |
|                   | preparation/ published]                     |   |
|                   | Note(s)                                     |   |
|                   | If possible, specify link/                  |   |
| • • •             | source                                      |   |
| Accounting        | Yes/no                                      |   |
| spreadsheet(s)    | Open access [yes/ no]                       |   |
|                   | Status [planned/ in                         |   |
|                   | preparation/published]                      |   |
|                   | Note(s)                                     |   |
|                   | If possible, specify link/                  |   |
| Marca             | source                                      |   |
| Map(s)            | Yes/ no                                     |   |
| (formatted)       | Open access [yes/ no]                       |   |
|                   | Status [planned/ in                         |   |
|                   | preparation/ published]                     |   |
|                   | Note(s)                                     |   |
|                   | If possible, specify link/                  |   |
| Geodata           | source<br>Yes/ no                           | - |
| Geouala           | · ·                                         |   |
|                   | Open access [yes/ no]                       |   |
|                   | Status [planned/ in preparation/ published] |   |
|                   | · · · · · ·                                 |   |
|                   | Note(s)                                     | - |
|                   | If possible, specify link/<br>source        |   |
| Scientific        | Yes/ no                                     |   |
| publication(s)    | Open access [yes/ no]                       |   |
| publication(5)    | Status [planned/ in                         |   |
|                   | preparation/ published]                     |   |
|                   | Note(s)                                     |   |
|                   | If possible, specify link/                  |   |
|                   | source                                      |   |
| Other output(s)   | Yes/no                                      |   |
|                   | Open access [yes/ no]                       |   |
|                   | Status [planned/ in                         |   |
|                   | preparation/ published]                     |   |
|                   | Note(s)                                     |   |
|                   | If possible, specify link/                  |   |
|                   | source                                      |   |
|                   |                                             |   |

| MAIA         | Support through funding                                                       | Yes                                   |
|--------------|-------------------------------------------------------------------------------|---------------------------------------|
| contribution | [yes/ no]                                                                     |                                       |
|              | Personalized support from                                                     | No                                    |
|              | MAIA community [yes/ no]                                                      |                                       |
|              | Support through more                                                          | Yes                                   |
|              | than one MAIA activity                                                        |                                       |
|              | (such as webinars and                                                         |                                       |
|              | workshops) [yes/ no]                                                          |                                       |
|              | Support through one MAIA                                                      | No                                    |
|              | activity (such as webinars                                                    |                                       |
|              | and workshops) [yes/ no]                                                      |                                       |
| Notes        |                                                                               |                                       |
| References   | De Nocker, L., Broekx, S., Liekens, I., Beckx, C., Dams, J., Hambsch, L., Van |                                       |
|              | den Abeele, L., Poelmans, L., De Jong, R., De Smet, L., 2020. Pilootproject   |                                       |
|              | Natural Capital Accounting in Vlaanderen. Studie uitgevoerd in opdracht       |                                       |
|              | van het Departement Omgev                                                     | ring, Vlaams Planbureau voor Omgeving |

| Country          |                                                                                                                                                           | Belgium                                                                                                                                                                        |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type     |                                                                                                                                                           | Ecosystem service account (monetary)                                                                                                                                           |
| Account code     |                                                                                                                                                           | BE_ESm_R_4                                                                                                                                                                     |
| Funding partners |                                                                                                                                                           | VITO and INBO (within the Horizon 2020<br>MAIA project); co-funded by Department for<br>Spatial development, environment, energy,<br>climate, green economy and animal welfare |
| Other involved   | partners                                                                                                                                                  |                                                                                                                                                                                |
|                  | Planned/ ongoing/ done                                                                                                                                    | Done                                                                                                                                                                           |
| Status           | (Estimated) completion date                                                                                                                               |                                                                                                                                                                                |
| Ecosystems       | Ecosystem types                                                                                                                                           | All (terrestrial) ecosystems                                                                                                                                                   |
| Ecosystem        | Ecosystem service                                                                                                                                         | Cultural                                                                                                                                                                       |
| service          | category                                                                                                                                                  |                                                                                                                                                                                |
|                  | Ecosystem service                                                                                                                                         | Health benefits of green and blue areas in the living environment                                                                                                              |
| Temporal         | Temporal coverage                                                                                                                                         | 2013, 2016                                                                                                                                                                     |
| specifics        | Frequency of updates                                                                                                                                      | One time study                                                                                                                                                                 |
| Spatial          | Spatial scale <i>[local,</i>                                                                                                                              | Regional                                                                                                                                                                       |
| specifics        | regional, national]                                                                                                                                       |                                                                                                                                                                                |
|                  | If sub-national, please specify area                                                                                                                      | Flanders                                                                                                                                                                       |
|                  | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit] | Aggregated at administrative scale                                                                                                                                             |
|                  | If aggregated, please<br>specify administrative or<br>ecological scale<br>Spatial resolution                                                              |                                                                                                                                                                                |

| Methodology     |                              |              |
|-----------------|------------------------------|--------------|
| General         | Cost indicator per disease o | or mortality |
| description     |                              |              |
| Specific        |                              |              |
| software/       |                              |              |
| model/ tool     |                              |              |
| used            |                              |              |
| Following       | Yes/ partly/no               | Partly       |
| SEEA-EA         | If partly, please specify    |              |
| guidelines      |                              |              |
| Indicators used | Yes/ no                      | No           |
|                 | If yes, please specify       |              |
| Aggregation     | Yes/no                       | No           |
| 00 0            | If yes, please specify (e.g. |              |
|                 | aggregation level and        |              |
|                 | method)                      |              |
| Validation      | Yes/ no                      | No           |
| process and/    | If yes, please specify       |              |
| or uncertainty  | i jes, preuse speens         |              |
| assessment      |                              |              |
|                 |                              |              |
| Data source(s)  | •                            |              |
|                 | •                            |              |
|                 |                              |              |
| Output(s)       |                              |              |
| Report(s)       | Yes/ no                      |              |
|                 | Open access [yes/ no]        |              |
|                 | Status [planned/ in          |              |
|                 | preparation/ published]      |              |
|                 | Note(s)                      |              |
|                 | If possible, specify link/   |              |
|                 | source                       |              |
| Accounting      | Yes/ no                      |              |
| spreadsheet(s)  | Open access [yes/ no]        |              |
|                 | Status [planned/ in          |              |
|                 | preparation/ published]      |              |
|                 | Note(s)                      |              |
|                 | If possible, specify link/   |              |
|                 | source                       |              |
| Map(s)          | Yes/ no                      |              |
| (formatted)     | Open access [yes/ no]        |              |
|                 | Status [planned/ in          |              |
|                 | preparation/ published]      |              |
|                 | Note(s)                      |              |
|                 | If possible, specify link/   |              |
|                 | source                       |              |
| Geodata         | Yes/no                       |              |
|                 | Open access [yes/ no]        |              |
|                 | Status [planned/ in          |              |
|                 | preparation/ published]      |              |
|                 | proparation, published       |              |

|                 | Note(s)                                                                                                                                                                                                                                                                                                  |     |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|                 | If possible, specify link/                                                                                                                                                                                                                                                                               |     |
|                 | source                                                                                                                                                                                                                                                                                                   |     |
| Scientific      | Yes/ no                                                                                                                                                                                                                                                                                                  |     |
| publication(s)  | Open access [yes/ no]                                                                                                                                                                                                                                                                                    |     |
|                 | Status [planned/ in<br>preparation/ published]                                                                                                                                                                                                                                                           |     |
|                 | Note(s)                                                                                                                                                                                                                                                                                                  |     |
|                 | If possible, specify link/<br>source                                                                                                                                                                                                                                                                     |     |
| Other output(s) | Yes/ no                                                                                                                                                                                                                                                                                                  |     |
|                 | Open access [yes/ no]                                                                                                                                                                                                                                                                                    |     |
|                 | Status [planned/ in                                                                                                                                                                                                                                                                                      |     |
|                 | preparation/ published]                                                                                                                                                                                                                                                                                  |     |
|                 | Note(s)                                                                                                                                                                                                                                                                                                  |     |
|                 | If possible, specify link/                                                                                                                                                                                                                                                                               |     |
|                 | source                                                                                                                                                                                                                                                                                                   |     |
|                 |                                                                                                                                                                                                                                                                                                          |     |
| MAIA            | Support through funding                                                                                                                                                                                                                                                                                  | Yes |
| contribution    | [yes/no]                                                                                                                                                                                                                                                                                                 | N.  |
|                 | Personalized support from MAIA community [yes/ no]                                                                                                                                                                                                                                                       | No  |
|                 | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no]                                                                                                                                                                                                          | Yes |
|                 | Support through one MAIA                                                                                                                                                                                                                                                                                 | No  |
|                 | activity (such as webinars                                                                                                                                                                                                                                                                               |     |
|                 | and workshops) [yes/ no]                                                                                                                                                                                                                                                                                 |     |
| Notes           |                                                                                                                                                                                                                                                                                                          |     |
| References      | De Nocker, L., Broekx, S., Liekens, I., Beckx, C., Dams, J., Hambsch, L., Van<br>den Abeele, L., Poelmans, L., De Jong, R., De Smet, L., 2020. Pilootproject<br>Natural Capital Accounting in Vlaanderen. Studie uitgevoerd in opdracht<br>van het Departement Omgeving, Vlaams Planbureau voor Omgeving |     |

# 6.2. Annex: Bulgaria

## 6.2.1. Ecosystem extent accounts

| Country                 |                        | Bulgaria                                                                                            |
|-------------------------|------------------------|-----------------------------------------------------------------------------------------------------|
| Account type            |                        | Ecosystem extent account                                                                            |
| Account code            |                        | BG_EE_N_1                                                                                           |
| Funding partners        |                        | Bulgarian Academy of Sciences, National<br>Statistical Institute of Bulgaria (NSI), MAIA<br>project |
| Other involved partners |                        | Executive Environment agency (ExEA) by the Ministry of environment and water                        |
| Status                  | Planned/ ongoing/ done | Ongoing                                                                                             |

|                                              | (Estimated) completion date                                                                                                                                                                                                                                                                                                                                                                                                | 30.05.2022                                                                                                                                                                                         |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                              | (Sub-)national/<br>International                                                                                                                                                                                                                                                                                                                                                                                           | International                                                                                                                                                                                      |
| Ecosystem<br>type                            | If possible, please specify                                                                                                                                                                                                                                                                                                                                                                                                | For terrestrial ecosystems: EU MAES<br>ecosystem type classification level 2 (linked<br>to CLC class 3); for marine ecosystems:<br>EUNIS classification level 3                                    |
| classification                               | If (sub-)national,<br>compatible with<br>international classification<br>(if yes, please specify<br>which)                                                                                                                                                                                                                                                                                                                 | MAES BG ecosystem type classification level<br>3 (linked to CLC class 3 and EUNIS<br>classification level 3 and level 4)                                                                           |
| Ecosystems                                   | Ecosystem types                                                                                                                                                                                                                                                                                                                                                                                                            | All ecosystems                                                                                                                                                                                     |
| Temporal                                     | Temporal coverage                                                                                                                                                                                                                                                                                                                                                                                                          | 2000, 2006, 2012, 2018                                                                                                                                                                             |
| specifics                                    | Frequency of updates                                                                                                                                                                                                                                                                                                                                                                                                       | Pluri-annual                                                                                                                                                                                       |
| Spatial<br>specifics                         | Spatial scale [local,<br>regional, national]                                                                                                                                                                                                                                                                                                                                                                               | National                                                                                                                                                                                           |
|                                              | If sub-national, please specify area                                                                                                                                                                                                                                                                                                                                                                                       | Not applicable                                                                                                                                                                                     |
|                                              | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]                                                                                                                                                                                                                                                                  | Fully spatially explicit                                                                                                                                                                           |
|                                              | If aggregated, please<br>specify administrative or<br>ecological scale                                                                                                                                                                                                                                                                                                                                                     | National level, Biogeographical regions and<br>marine regions – Alpine, Continental, Black<br>sea, Marine region "Black sea", Districts,<br>Municipalities, Settlements and ETRS grids<br>10x10 km |
|                                              | Spatial resolution                                                                                                                                                                                                                                                                                                                                                                                                         | 25 ha                                                                                                                                                                                              |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                            | 1^                                                                                                                                                                                                 |
| Methodology                                  |                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                    |
| General<br>description                       | Combination of a. o. land cover data and population grid; spatial (GIS)<br>assessment; ecosystems will be mapped at different levels as – national –<br>whole country, biogeographical level, marine area part of Bulgarian<br>Exclusive Economic zone, Natura 2000 sites (34 % of the country),<br>Districts (28), Municipalities (265), Settlements and ETRS grids 10x10<br>sq.km, EUNIS level 3 and 4 on national level |                                                                                                                                                                                                    |
| Specific<br>software/<br>model/ tool<br>used | ArcGIS, QGIS and MS EXCEL                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                    |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                                             | Yes                                                                                                                                                                                                |
| SEEA-EA<br>guidelines                        | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                  | Not applicable                                                                                                                                                                                     |
| Validation                                   | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                                                                                                                                                                                                |
| process and/                                 | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                     | We use validated datasets from CLC database                                                                                                                                                        |

| or uncertainty               |                                                                                                                                                                                                                                                    |                                                                                       |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| assessment                   |                                                                                                                                                                                                                                                    |                                                                                       |
|                              |                                                                                                                                                                                                                                                    |                                                                                       |
| Data<br>source(s)            | <ul> <li>Corine land cover databases from 2000, 2006, 2012 and 2018</li> <li>for marine ecosystems: usage of the results from Mapping and assessment of marine ecosystems within EEA grands project - BG03"Biodiversity and ecosystems"</li> </ul> |                                                                                       |
|                              |                                                                                                                                                                                                                                                    |                                                                                       |
| Output(s)                    |                                                                                                                                                                                                                                                    |                                                                                       |
| Report(s)                    | Yes/ no                                                                                                                                                                                                                                            | No (not yet)                                                                          |
|                              | Open access [yes/ no]                                                                                                                                                                                                                              | No                                                                                    |
|                              | Status [planned/ in preparation/ published]                                                                                                                                                                                                        | Planned                                                                               |
|                              | Note(s)                                                                                                                                                                                                                                            |                                                                                       |
|                              | If possible, specify link/                                                                                                                                                                                                                         |                                                                                       |
| A                            | source                                                                                                                                                                                                                                             | V                                                                                     |
| Accounting                   | Yes/ no                                                                                                                                                                                                                                            | Yes                                                                                   |
| spreadsheet(s)               | Open access [yes/ no]                                                                                                                                                                                                                              | No                                                                                    |
|                              | Status [planned/ in preparation/ published]                                                                                                                                                                                                        | Planned                                                                               |
|                              | Note(s)                                                                                                                                                                                                                                            | We plan to publish the results at the ExEA<br>MAIA web pages; the link will be shared |
|                              | If possible, specify link/                                                                                                                                                                                                                         | asap                                                                                  |
|                              | source                                                                                                                                                                                                                                             |                                                                                       |
| Map(s)                       | Yes/ no                                                                                                                                                                                                                                            | Yes                                                                                   |
| (formatted)                  | Open access [yes/ no]                                                                                                                                                                                                                              | Yes                                                                                   |
| ()                           | Status [planned/ in                                                                                                                                                                                                                                | Published                                                                             |
|                              | preparation/ published]                                                                                                                                                                                                                            | i ublisheu                                                                            |
|                              | Note(s)                                                                                                                                                                                                                                            |                                                                                       |
|                              | If possible, specify link/                                                                                                                                                                                                                         | https://ecosys.eea.government.bg/corinem                                              |
|                              | source                                                                                                                                                                                                                                             | <u>aesecosystems/</u>                                                                 |
| Geodata                      | Yes/ no                                                                                                                                                                                                                                            | Yes                                                                                   |
|                              | Open access [yes/ no]                                                                                                                                                                                                                              | Yes                                                                                   |
|                              | Status [planned/ in                                                                                                                                                                                                                                | Published                                                                             |
|                              | preparation/ published]                                                                                                                                                                                                                            | 1 ublioliou                                                                           |
|                              | Note(s)                                                                                                                                                                                                                                            |                                                                                       |
|                              | If possible, specify link/                                                                                                                                                                                                                         | https://ecosys.eea.government.bg/                                                     |
|                              | source                                                                                                                                                                                                                                             |                                                                                       |
| Scientific<br>publication(s) | Yes/ no                                                                                                                                                                                                                                            | No                                                                                    |
|                              | Open access [yes/ no]                                                                                                                                                                                                                              |                                                                                       |
|                              | Status [planned/ in preparation/ published]                                                                                                                                                                                                        | Planned                                                                               |
|                              | Note(s)                                                                                                                                                                                                                                            |                                                                                       |
|                              | If possible, specify link/                                                                                                                                                                                                                         |                                                                                       |
|                              | source                                                                                                                                                                                                                                             |                                                                                       |
| Other                        | Yes/ no                                                                                                                                                                                                                                            | No                                                                                    |
| output(s)                    | Open access [yes/ no]                                                                                                                                                                                                                              |                                                                                       |
|                              | open access [yes/ noj                                                                                                                                                                                                                              |                                                                                       |

|                      | Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source |     |
|----------------------|---------------------------------------------------------------------------------------------------|-----|
|                      |                                                                                                   |     |
| MAIA<br>contribution | Support through funding [yes/ no]                                                                 | Yes |
|                      | Personalized support from MAIA community [yes/ no]                                                | No  |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no]   | Yes |
|                      | Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no]                | Yes |
| Notes                |                                                                                                   |     |
| References           |                                                                                                   |     |

| Country                             |                                                                         | Bulgaria                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type                        |                                                                         | Ecosystem extent account<br>(forest and woodland extent accounts on<br>national level)                                                                                                                                                                                                                                                                                                                                                                                             |
| Account code                        |                                                                         | BG_EE_N_2                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Funding partners                    |                                                                         | Bulgarian Academy of Sciences (FRI-BAS),<br>National Statistical Institute of Bulgaria<br>(NSI), Executive Environment agency<br>(ExEA) by the Ministry of environment and<br>water, MAIA project                                                                                                                                                                                                                                                                                  |
| Other involved                      | partners                                                                | Forest Research Institute                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Status                              | Planned/ ongoing/ done<br>(Estimated) completion<br>date                | Ongoing                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ecosystem<br>type<br>classification | <i>(Sub-)national/<br/>International</i><br>If possible, please specify | International<br>MAES classification level 2 (broad-leaved,<br>coniferous, mixed forests, transitional<br>woodland/shrub); for FMP the type of forest<br>according to version 2 data format and<br>nomenclatures is linked to these categories<br>using a crosswalk table; the forest<br>immovable properties (parcels) are<br>presented according to cadastral code<br>nomenclature; forest and woodlands are<br>classified as Forest Land (FL) in the physical<br>blocks of land |
|                                     | If (sub-)national,<br>compatible with                                   | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                                            |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
|                      | international classification                                                                                                                                                                                                                                                                                                                                                                                                         |                                              |
|                      | (if yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                              |                                              |
| Ecosystems           | which)<br>Ecosystem types                                                                                                                                                                                                                                                                                                                                                                                                            | Forest and woodland ecosystems               |
| Temporal             | Temporal coverage                                                                                                                                                                                                                                                                                                                                                                                                                    | 2000, 2006, 2012, 2018, 2019-2021            |
| specifics            | Frequency of updates                                                                                                                                                                                                                                                                                                                                                                                                                 |                                              |
| Spatial              | Spatial scale <i>[local,</i>                                                                                                                                                                                                                                                                                                                                                                                                         | National                                     |
| specifics            | regional, national]                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |
| -                    | If sub-national, please                                                                                                                                                                                                                                                                                                                                                                                                              | Not applicable                               |
|                      | specify area                                                                                                                                                                                                                                                                                                                                                                                                                         |                                              |
|                      | Spatial coverage [not                                                                                                                                                                                                                                                                                                                                                                                                                | Spatially explicit on national level         |
|                      | spatially explicit,                                                                                                                                                                                                                                                                                                                                                                                                                  |                                              |
|                      | aggregated at                                                                                                                                                                                                                                                                                                                                                                                                                        |                                              |
|                      | administrative scale,<br>aggregated at ecological                                                                                                                                                                                                                                                                                                                                                                                    |                                              |
|                      | scale, fully spatially                                                                                                                                                                                                                                                                                                                                                                                                               |                                              |
|                      | explicit]                                                                                                                                                                                                                                                                                                                                                                                                                            |                                              |
|                      | If aggregated, please                                                                                                                                                                                                                                                                                                                                                                                                                | National level                               |
|                      | specify administrative or                                                                                                                                                                                                                                                                                                                                                                                                            |                                              |
|                      | ecological scale                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |
|                      | Spatial resolution                                                                                                                                                                                                                                                                                                                                                                                                                   |                                              |
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
| Methodology          |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
| General              |                                                                                                                                                                                                                                                                                                                                                                                                                                      | est and woodland ecosystem types on          |
| description          | national GRID 1x1 km2 and calculation of net changes, additions and<br>reductions to extent in every grid cell for Corine Landcover (2000-2018)<br>and State Cadastre (2019, 2020 and 2021). Present area of forest<br>ecosystems from Forest Management Plans by type of forest, EUNIS and                                                                                                                                          |                                              |
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
|                      | level 2 MAES                                                                                                                                                                                                                                                                                                                                                                                                                         |                                              |
| Specific             | QGIS, MapINFO, IBM SPSS and Microsoft Excel                                                                                                                                                                                                                                                                                                                                                                                          |                                              |
| software/            |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
| model/ tool          |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
| used                 | Vac/narthu/no                                                                                                                                                                                                                                                                                                                                                                                                                        | Vec                                          |
| Following<br>SEEA-EA | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                                                       | Yes                                          |
| guidelines           | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                            | Not applicable                               |
| Validation           | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                              | No                                           |
| process and/         | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                               | Not applicable                               |
| or uncertainty       |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
| assessment           |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
| Dete                 |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
| Data                 | 5                                                                                                                                                                                                                                                                                                                                                                                                                                    | renced data sources for forests and woodland |
| source(s)            | <ul> <li>area include:</li> <li>1) Corine Landcover for 1990, 2000, 2006, 2012 and 2018 years</li> <li>2) Bulgarian Geodesy, Cartography and Cadastre Agency maps including immovable properties and building layers (State Cadastre maps of forest parcels)</li> <li>3) Forest Management Projects (FMP) including data for types of forest, tree species and their composition produced from Executive Forestry Agency.</li> </ul> |                                              |
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                              |

|                    | <ul> <li>4) Data on the physical blocks of land (land use) of the Ministry of Agriculture, Foods and Forestry</li> <li>Attributive data for actual timber removal from logging permits from 2018, 2019 and 2020, killed game and prices from hunting and fishing report for 2017, 2018 and 2019</li> </ul> |                                                 |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Output(a)          |                                                                                                                                                                                                                                                                                                            |                                                 |
| Output(s)          | Vac/na                                                                                                                                                                                                                                                                                                     | Yes                                             |
| Report(s)          | Yes/ no                                                                                                                                                                                                                                                                                                    | Tes                                             |
|                    | Open access [yes/ no]                                                                                                                                                                                                                                                                                      |                                                 |
|                    | Status [planned/ in                                                                                                                                                                                                                                                                                        | In preparation                                  |
|                    | preparation/ published]<br>Note(s)                                                                                                                                                                                                                                                                         |                                                 |
|                    | If possible, specify link/                                                                                                                                                                                                                                                                                 | We plan to publish the results at the NSI       |
|                    | source                                                                                                                                                                                                                                                                                                     | MAIA web pages, the link will be shared<br>asap |
| Accounting         | Yes/ no                                                                                                                                                                                                                                                                                                    | Yes                                             |
| spreadsheet(s)     | Open access [yes/ no]                                                                                                                                                                                                                                                                                      | Yes                                             |
|                    | Status [planned/ in preparation/ published]                                                                                                                                                                                                                                                                | In preparation                                  |
|                    | Note(s)                                                                                                                                                                                                                                                                                                    |                                                 |
|                    | If possible, specify link/                                                                                                                                                                                                                                                                                 |                                                 |
|                    | source                                                                                                                                                                                                                                                                                                     |                                                 |
| Map(s)             | Yes/ no                                                                                                                                                                                                                                                                                                    | Yes                                             |
| (formatted)        | Open access [yes/ no]                                                                                                                                                                                                                                                                                      |                                                 |
|                    | Status [planned/ in preparation/ published]                                                                                                                                                                                                                                                                | In preparation                                  |
|                    | Note(s)                                                                                                                                                                                                                                                                                                    |                                                 |
|                    | If possible, specify link/                                                                                                                                                                                                                                                                                 |                                                 |
|                    | source                                                                                                                                                                                                                                                                                                     |                                                 |
| Geodata            | Yes/ no                                                                                                                                                                                                                                                                                                    | Yes                                             |
|                    | Open access [yes/ no]                                                                                                                                                                                                                                                                                      |                                                 |
|                    | Status [planned/ in                                                                                                                                                                                                                                                                                        |                                                 |
|                    | preparation/ published]                                                                                                                                                                                                                                                                                    |                                                 |
|                    | Note(s)                                                                                                                                                                                                                                                                                                    |                                                 |
|                    | If possible, specify link/                                                                                                                                                                                                                                                                                 |                                                 |
| <u> </u>           | source                                                                                                                                                                                                                                                                                                     |                                                 |
| Scientific         | Yes/ no                                                                                                                                                                                                                                                                                                    |                                                 |
| publication(s)     | Open access [yes/ no]                                                                                                                                                                                                                                                                                      |                                                 |
|                    | Status [planned/ in                                                                                                                                                                                                                                                                                        |                                                 |
|                    | preparation/ published]                                                                                                                                                                                                                                                                                    |                                                 |
|                    | Note(s)                                                                                                                                                                                                                                                                                                    |                                                 |
|                    | If possible, specify link/                                                                                                                                                                                                                                                                                 |                                                 |
|                    |                                                                                                                                                                                                                                                                                                            |                                                 |
| Other              | source                                                                                                                                                                                                                                                                                                     | No                                              |
| Other<br>output(s) | source<br>Yes/ no                                                                                                                                                                                                                                                                                          | No<br>Not applicable                            |
| Other<br>output(s) | source<br>Yes/ no<br>Open access [yes/ no]                                                                                                                                                                                                                                                                 | Not applicable                                  |
|                    | source<br>Yes/ no                                                                                                                                                                                                                                                                                          |                                                 |

|                      | If possible, specify link/<br>source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Not applicable |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |
| MAIA<br>contribution | Support through funding [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes            |
|                      | Personalized support from MAIA community [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Yes            |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes            |
|                      | Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | No             |
| Notes                | The objective of the project is to develop a methodology and describe the potential data sources used for calculation of the extent of forest, woodland and other woodland ecosystems on the national level and their changes over time in square kilometres (km <sup>2</sup> ). EAA covers the whole territory of the country and the basic spatial units are different forest types and cadaster parcels. The other main objective is to present methods for estimating ecosystem provisioning services from forests and woodland in particular wood supply (timber harvest) and hunting meat. The timber harvest is part of NA data but hunting is not. For both services we used market prices for calculating the services. |                |
| References           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |

## 6.2.2. Ecosystem service account - biophysical

| Country              |                               | Bulgaria                                                                                                    |
|----------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------|
| Account type         |                               | Ecosystem service account (biophysical)                                                                     |
| Account code         |                               | BG_ESb_R_1                                                                                                  |
| Funding partners     |                               | Bulgarian Academy of Sciences (National<br>Institute of Geophysics, Geodesy and<br>Geography), MAIA project |
| Other involved       | partners                      |                                                                                                             |
|                      | Planned/ ongoing/ done        | Ongoing                                                                                                     |
| Status               | (Estimated) completion date   | 31.10.2022/31.12.2022*                                                                                      |
| Ecosystems           | Ecosystem types               | Woodland, forest, heathland, shrub,<br>grassland, cropland and urban ecosystems                             |
| Ecosystem<br>service | Ecosystem service<br>category | Regulating                                                                                                  |
|                      | Ecosystem service             | Flood regulation                                                                                            |
| Temporal             | Temporal coverage             |                                                                                                             |
| specifics            | Frequency of updates          | One time study                                                                                              |
| Spatial              | Spatial scale <i>[local,</i>  | Regional                                                                                                    |
| specifics            | regional, national]           |                                                                                                             |

|                                              | If sub-national, please<br>specify area<br>Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Ogosta, Malki Iskar and Yantra watershed -<br>three mountain watersheds<br>Fully spatially explicit                                        |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
|                                              | explicit]<br>If aggregated, please<br>specify administrative or<br>ecological scale<br>Spatial resolution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Not applicable                                                                                                                             |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                            |
| Methodology                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                            |
| General<br>description                       | GIS-based AGWA tool, which utilizes the KINEROS (Kinematic Runoff and<br>Erosion model) hydrologic model applied in Malki Iskar Yantra<br>watersheds, GIS-based ArcSWAT model applied in Ogosta watershed:<br>The accounting of flood regulation is based on the assumption that<br>specific ecosystems can reduce the extent and intensity of floods, thus<br>reducing the risk of damage to build environments. The ecosystems<br>which provide the flood control functions (ES supply) are located at a<br>particular distance from the demand areas. The spatial relationship<br>between them is conceptualized by the Service Providing Areas (SPA)<br>and the Service Benefiting Areas (SBA). The flood regulation accounting<br>is based on the calculation of the Actual Flow (AF) as a function of SBA<br>and SDA. The accounting tables contain calculations of the ES Potential,<br>ES Demand, and ES Actual flow areas per ecosystem subtypes. |                                                                                                                                            |
| Specific<br>software/<br>model/tool<br>used  | GIS, AGWA tool, KINEROS model, ArcSWAT tool, SWAT model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                            |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes                                                                                                                                        |
| SEEA-EA<br>guidelines                        | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Not applicable                                                                                                                             |
| Indicators used                              | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                                                                                                                                        |
|                                              | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <ul> <li>Soil water infiltration (mm)</li> <li>Surface runoff (m<sup>3</sup>/sec)</li> <li>Peak flow (m<sup>3</sup>/sec) (SWAT)</li> </ul> |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                                                                                                                                        |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Aggregation in the accounting tables of the<br>SPA and SBA areas for ecosystem type<br>based on CORINE data                                |
| Validation                                   | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No (planned for the second stage*)                                                                                                         |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Not applicable                                                                                                                             |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                            |
| Data source(s)                               | Initial datasets for flood regu<br>studies:<br>• 30m DEM;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ulation modelling include of the three case                                                                                                |

|                | <ul> <li>Land Cover data correlated to 4rd level CORINE classes<br/>downscaled to 1:25000;</li> <li>1:25000 soil map data correlated to FAO classification;</li> <li>Rainfall data</li> <li>Runoff data (used for model calibration</li> <li>Data derived from KINEROS model (Malki Iskar and Yantra) and SWAT<br/>(Ogosta):</li> <li>Soil water infiltration (mm) per subbasin (KINEROS) and HRU<br/>(SWAT)</li> <li>Surface runoff (m<sup>3</sup>/sec) per subbasin (KINEROS) and HRU<br/>(SWAT)</li> <li>Peak flow (m<sup>3</sup>/sec) per subbasin (KINEROS) and HRU (SWAT)</li> </ul> |                                   |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Output(s)      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |
| Report(s)      | Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes                               |
| icport(s)      | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes                               |
|                | Status [planned/ in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Planned                           |
|                | preparation/ published]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Tanneu                            |
|                | Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                   |
|                | If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                   |
|                | source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                   |
| Accounting     | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                               |
| spreadsheet(s) | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes                               |
|                | Status [planned/ in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | In preparation                    |
|                | preparation/ published]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                   |
|                | Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                   |
|                | If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                   |
|                | source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                   |
| Map(s)         | Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes                               |
| (formatted)    | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes                               |
|                | Status [planned/ in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Published/in preparation          |
|                | preparation/published]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                   |
|                | Note(s)<br>If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                   |
|                | source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                   |
| Geodata        | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                               |
|                | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | No                                |
|                | Status [planned/ in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Could be published if appropriate |
|                | preparation/ published]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | conditions are available          |
|                | Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                   |
|                | If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                   |
|                | source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                   |
| Scientific     | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                               |
| publication(s) | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                   |
|                | Status [planned/ in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | One published/ One planned        |
|                | preparation/ published]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                   |
|                | Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                   |

|                 | If possible, specify link/                                                | https://publications.jrc.ec.europa.eu/re       |
|-----------------|---------------------------------------------------------------------------|------------------------------------------------|
|                 | source                                                                    | pository/handle/JRC123667?mode=full            |
| Other output(s) | Yes/ no                                                                   |                                                |
|                 | Open access [yes/ no]                                                     |                                                |
|                 | Status [planned/ in                                                       |                                                |
|                 | preparation/ published]                                                   |                                                |
|                 | Note(s)                                                                   |                                                |
|                 | If possible, specify link/                                                |                                                |
|                 | source                                                                    |                                                |
|                 |                                                                           |                                                |
| MAIA            | Support through funding                                                   | Yes                                            |
| contribution    | [yes/ no]                                                                 |                                                |
|                 | Personalized support from                                                 | Yes                                            |
|                 | MAIA community [yes/ no]                                                  |                                                |
|                 | Support through more                                                      | Yes                                            |
|                 | than one MAIA activity                                                    |                                                |
|                 | (such as webinars and                                                     |                                                |
|                 | workshops) <i>[yes/ no]</i>                                               |                                                |
|                 | Support through one MAIA                                                  | No                                             |
|                 | activity (such as webinars                                                |                                                |
|                 | and workshops) [yes/ no]                                                  |                                                |
| Notes           |                                                                           |                                                |
| References      | Hristova, D., Nedkov, S., Katsarski, N., 2021. Modelling flood regulation |                                                |
|                 | ecosystem services in suppo                                               | rt of ecosystem accounting in Bulgaria. In: La |
|                 | Notte A., Grammatikopoulou I., Grunewald K., Barton D.N., Ekinci B.,      |                                                |
|                 | Ecosystem and ecosystem se                                                | ervices accounts: time for applications. EUR   |
|                 | 30588 EN, Publications Offic                                              | e of the European Union, Luxembourg, 2021,     |
|                 | ISBN 978-92-76-30142-4, do                                                | oi:10.2760/01033, JRC123667,                   |
|                 | https://op.europa.eu/en/pu                                                | blication-detail/-/publication/90a6db49-       |
|                 | 700a-11eb-9ac9-01aa75ed7                                                  | 1a1                                            |
|                 |                                                                           |                                                |

\* The account is planned in two stages: 1<sup>st</sup> stage - Account based of the three case studies to be done within MAIA project until the end of the project (the report will be ready by the end of March); 2<sup>nd</sup> stage account at national scale to be done within INES project funded by the Bulgarian National Science Fund, the project has already started but the tasks on flood regulation accounting are planned to start in November 2022.

| Country          |                             | Bulgaria                                                                                                    |
|------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------|
| Account type     |                             | Ecosystem service account (biophysical)                                                                     |
| Account code     |                             | BG_ESb_R_2                                                                                                  |
| Funding partners |                             | Bulgarian Academy of Sciences (National<br>Institute of Geophysics, Geodesy and<br>Geography), MAIA project |
| Other involved   | partners                    | SU, IG, NSI                                                                                                 |
|                  | Planned/ ongoing/ done      | Ongoing                                                                                                     |
| Status           | (Estimated) completion date |                                                                                                             |
| Ecosystems       | Ecosystem types             | All ecosystems                                                                                              |

| Factor                | Factorian contrine                                                       | Culturel                                                                                     |  |
|-----------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--|
| Ecosystem<br>service  | Ecosystem service                                                        | Cultural                                                                                     |  |
| Service               | category<br>Ecosystem service                                            | Outdoor recreation                                                                           |  |
| Tomporal              | Temporal coverage                                                        |                                                                                              |  |
| Temporal specifics    |                                                                          |                                                                                              |  |
| -                     | Frequency of updates                                                     | One time study                                                                               |  |
| Spatial<br>specifics  | Spatial scale [local,<br>regional, national]                             | National/ sub-national                                                                       |  |
|                       | If sub-national, please specify area                                     | Smolyan municipality                                                                         |  |
|                       | Spatial coverage [not spatially explicit,                                | Administrative scale                                                                         |  |
|                       | aggregated at                                                            |                                                                                              |  |
|                       | administrative scale,                                                    |                                                                                              |  |
|                       | aggregated at ecological                                                 |                                                                                              |  |
|                       | scale, fully spatially<br>explicit]                                      |                                                                                              |  |
|                       | If aggregated, please                                                    |                                                                                              |  |
|                       | specify administrative or                                                |                                                                                              |  |
|                       | ecological scale                                                         |                                                                                              |  |
|                       | Spatial resolution                                                       | 1 km <sup>2</sup>                                                                            |  |
|                       |                                                                          |                                                                                              |  |
| Methodology           |                                                                          |                                                                                              |  |
| General               | The ESTIMAP model is adap                                                | ted and successfully tested at national scale                                                |  |
| description           |                                                                          | uate and map the potential supply of the                                                     |  |
|                       | ecosystem services to support outdoor recreational, leisure and sport    |                                                                                              |  |
|                       | activities, in relation to the proximity to the population sett          |                                                                                              |  |
| 0                     | roads (considered some of the main drivers of recreation resources use). |                                                                                              |  |
| Specific<br>software/ | GIS                                                                      |                                                                                              |  |
| model/ tool           |                                                                          |                                                                                              |  |
| used                  |                                                                          |                                                                                              |  |
| Following             | Yes/ partly/no                                                           | No                                                                                           |  |
| SEEA-EA               | If partly, please specify                                                | Not applicable                                                                               |  |
| guidelines            |                                                                          | appresse                                                                                     |  |
| Indicators used       | Yes/ no                                                                  |                                                                                              |  |
|                       | If yes, please specify                                                   |                                                                                              |  |
| Aggregation           | Yes/no                                                                   |                                                                                              |  |
|                       | If yes, please specify (e.g.                                             |                                                                                              |  |
|                       | aggregation level and                                                    |                                                                                              |  |
|                       | method)                                                                  |                                                                                              |  |
| Validation            | Yes/ no                                                                  |                                                                                              |  |
| process and/          | If yes, please specify                                                   |                                                                                              |  |
| or uncertainty        |                                                                          |                                                                                              |  |
| assessment            |                                                                          |                                                                                              |  |
| Data arrest (1)       | Data made and lable for                                                  | ningt "Concentralization flam"                                                               |  |
| Data source(s)        | -                                                                        | oject "Conceptualization, flexible                                                           |  |
|                       |                                                                          | ospatial platform for access of the Bulgarian<br>pean digital single market of knowledge and |  |
|                       | _                                                                        |                                                                                              |  |
|                       | information services", CE Heritage BG                                    |                                                                                              |  |
|                       |                                                                          |                                                                                              |  |
| Output(s)             |                                                                          |                                                                                              |  |

| Report(s)      | Yes/ no                    | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | Open access [yes/ no]      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | Status [planned/ in        | In preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                | preparation/ published]    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | Note(s)                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | If possible, specify link/ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | source                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Accounting     | Yes/ no                    | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| spreadsheet(s) | Open access [yes/ no]      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | Status [planned/ in        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | preparation/ published]    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | Note(s)                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | If possible, specify link/ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | source                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Map(s)         | Yes/ no                    | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| (formatted)    |                            | (a) Recreational Provision Potential map                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                |                            | Recreation potential                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            | Recreation potential CLL Research Recreation potential 0 25 50 100 190 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                            | High potential Medium potential Los potential                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                |                            | (b) Decreation Ownerstructure (DOC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                |                            | (b) Recreation Opportunity Spectrum (ROS)<br>map, applied here to reclassify the land                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                |                            | cover, according to the possibilities it offers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            | and the proximity to potential users. The                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                |                            | assessment of potential benefits estimates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                            | the percentage of potential trips for each                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                            | ROS category.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                |                            | Recreation Opportunity Spectrum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            | and the second sec |
|                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            | The start for the second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                |                            | A Company of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            | The second se                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                |                            | Recreation oportunity spectrum     ngh potential - not easily accessible     Log potential - not easily accessible     Log potential - not easily accessible     Log potential - not easily accessible                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                |                            | Very high potential - accessible Medium potential - accessible Urban Areas<br>High potential - easily accessible Medium potential - not easily accessible                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                |                            | ing potential - accessible                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                |                            | (c) The national scale study identifies the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                |                            | places with high and very high recreation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                |                            | notontial at the local scale Mast of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                |                            | potential at the local scale. Most of them are protected areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                 |                                                | <figure></figure>                                                                                                                                                              |
|-----------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | Open access [yes/ no]                          | Very high potential - easily accessible Yes                                                                                                                                    |
|                 | Status [planned/ in<br>preparation/ published] | Planned for sub-national level (Smolyan<br>Mun.) and published for national level<br>(Ihtimanski et al, 2020)                                                                  |
|                 | Note(s)                                        | Smolyan municipality assessment is under preparation                                                                                                                           |
|                 | If possible, specify link/<br>source           | Ihtimanski I, Nedkov S, Semerdzhieva L<br>(2020) Mapping the natural heritage as a<br>source of recreation services at national<br>scale in Bulgaria. One Ecosystem 5: e54621. |
| Geodata         | Yes/ no                                        | Yes                                                                                                                                                                            |
|                 | Open access [yes/ no]<br>Status [planned/ in   | No<br>In preparation                                                                                                                                                           |
|                 | preparation/ published]<br>Note(s)             |                                                                                                                                                                                |
|                 | If possible, specify link/<br>source           |                                                                                                                                                                                |
| Scientific      | Yes/no                                         | Yes                                                                                                                                                                            |
| publication(s)  | Open access [yes/ no]                          |                                                                                                                                                                                |
|                 | Status [planned/ in                            | Planned                                                                                                                                                                        |
|                 | preparation/published]<br>Note(s)              |                                                                                                                                                                                |
|                 | If possible, specify link/                     |                                                                                                                                                                                |
|                 | source                                         |                                                                                                                                                                                |
| Other output(s) | Yes/ no                                        | Yes                                                                                                                                                                            |

|                      | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                            | Yes                                                                                                                                                                                                                                                                           |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      | Status [planned/ in                                                                                                                                                                                                                                                                                                                                                                                                                              | Published                                                                                                                                                                                                                                                                     |
|                      | preparation/ published]                                                                                                                                                                                                                                                                                                                                                                                                                          | i ublished                                                                                                                                                                                                                                                                    |
|                      | Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                          | The research is funded from the project<br>"Conceptualization, flexible methodology,<br>and a pilot geospatial platform for access of<br>the Bulgarian natural heritage to the<br>European digital single market of<br>knowledge and information services", CE<br>Heritage BG |
|                      | If possible, specify link/<br>source                                                                                                                                                                                                                                                                                                                                                                                                             | https://jbgs.arphahub.com/issue/3547/                                                                                                                                                                                                                                         |
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                               |
| MAIA<br>contribution | Support through funding [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                | Yes                                                                                                                                                                                                                                                                           |
|                      | Personalized support from MAIA community [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                               | Yes                                                                                                                                                                                                                                                                           |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no]                                                                                                                                                                                                                                                                                                                                                  | Yes                                                                                                                                                                                                                                                                           |
|                      | Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no]                                                                                                                                                                                                                                                                                                                                                               | No                                                                                                                                                                                                                                                                            |
| Notes                |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                               |
| References           | Ihtimanski I, Nedkov S, Semerdzhieva L (2020) Mapping the natural<br>heritage as a source of recreation services at national scale in Bulgaria.<br>One Ecosystem 5: e54621.<br>Dodev, Y.; Zhiyanski, M.; Glushkova, M.; Borisova, B.; Semerdzhieva, L.;<br>Ihtimanski, I.; Dimitrov, S.; Nedkov, S.; Nikolova, M.; Shin, W.S. An<br>Integrated Approach to Assess the Potential of Forest Areas for Therapy<br>Services. Land 2021, 10(12), 1354 |                                                                                                                                                                                                                                                                               |

# 6.3. Annex: Czech Republic

#### 6.3.1. Ecosystem extent account

| Country                 |                        | Czech Republic                          |
|-------------------------|------------------------|-----------------------------------------|
| Account type            |                        | Ecosystem extent account                |
| Account code            |                        | CZE_EE_N_1                              |
| Funding partne          | ers                    | MAIA project; Global Change Research    |
|                         |                        | Institute CAS; Technology Agency of the |
|                         |                        | Czech Republic                          |
| Other involved partners |                        | Czech Statistical Office                |
|                         | Planned/ ongoing/ done | Done                                    |
| Status                  | (Estimated) completion | Not applicable                          |
|                         | date                   |                                         |
|                         | (Sub-)national/        | International                           |
|                         | international          |                                         |

| Ecocystom                                                                                                                                                 | If possible places specify                                                                                                                                                                                                                                                                                 | CORINE Land Cover                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Ecosystem                                                                                                                                                 | If possible, please specify                                                                                                                                                                                                                                                                                |                                                                                                                    |
| type<br>classification                                                                                                                                    | If (sub-)national,                                                                                                                                                                                                                                                                                         | Not applicable                                                                                                     |
| classification                                                                                                                                            | compatible with international classification                                                                                                                                                                                                                                                               |                                                                                                                    |
|                                                                                                                                                           | (if yes, please specify                                                                                                                                                                                                                                                                                    |                                                                                                                    |
|                                                                                                                                                           | which)                                                                                                                                                                                                                                                                                                     |                                                                                                                    |
| Ecosystems                                                                                                                                                | Ecosystem types                                                                                                                                                                                                                                                                                            | All ecosystems                                                                                                     |
| Temporal                                                                                                                                                  | Temporal coverage                                                                                                                                                                                                                                                                                          | 2000, 2006, 2012, 2018                                                                                             |
| specifics                                                                                                                                                 | Frequency of updates                                                                                                                                                                                                                                                                                       | Pluri-annual (Land accounts are based on<br>Corine Land Cover database which is being<br>developed pluri-annually) |
| Spatial specifics                                                                                                                                         | Spatial scale <i>[local,</i>                                                                                                                                                                                                                                                                               | National                                                                                                           |
| specifics                                                                                                                                                 | <i>regional, national]</i><br>If sub-national, please                                                                                                                                                                                                                                                      | Not applicable                                                                                                     |
|                                                                                                                                                           | specify area                                                                                                                                                                                                                                                                                               | Not applicable                                                                                                     |
|                                                                                                                                                           | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially                                                                                                                                                               | Fully spatially explicit                                                                                           |
|                                                                                                                                                           | explicit]                                                                                                                                                                                                                                                                                                  |                                                                                                                    |
|                                                                                                                                                           | If aggregated, please<br>specify administrative or<br>ecological scale                                                                                                                                                                                                                                     | Not applicable                                                                                                     |
|                                                                                                                                                           | Spatial resolution                                                                                                                                                                                                                                                                                         |                                                                                                                    |
|                                                                                                                                                           |                                                                                                                                                                                                                                                                                                            |                                                                                                                    |
| Methodology                                                                                                                                               |                                                                                                                                                                                                                                                                                                            |                                                                                                                    |
| General<br>description                                                                                                                                    | Original extent accounts have been developed based on the methodology<br>of Land and Ecosystem Accounting (LEAC) by the European Environment<br>Agency. With the adoption of SEEA-EA framework, extent account has<br>been revised according to the accounting methodology of the statistical<br>standard. |                                                                                                                    |
|                                                                                                                                                           | standard.                                                                                                                                                                                                                                                                                                  | e accounting methodology of the statistical                                                                        |
| Specific<br>software/<br>model/tool<br>used                                                                                                               | 0                                                                                                                                                                                                                                                                                                          | e accounting methodology of the statistical                                                                        |
| software/<br>model/ tool<br>used<br>Following                                                                                                             | standard.                                                                                                                                                                                                                                                                                                  | e accounting methodology of the statistical<br>Yes                                                                 |
| software/<br>model/ tool<br>used<br>Following<br>SEEA-EA                                                                                                  | standard.<br>GIS                                                                                                                                                                                                                                                                                           |                                                                                                                    |
| software/<br>model/ tool<br>used<br>Following<br>SEEA-EA<br>guidelines                                                                                    | standard.<br>GIS<br><u>Yes/ partly/no</u><br>If partly, please specify                                                                                                                                                                                                                                     | Yes<br>Not applicable                                                                                              |
| software/<br>model/ tool<br>used<br>Following<br>SEEA-EA<br>guidelines<br>Validation                                                                      | standard.<br>GIS<br>Yes/partly/no<br>If partly, please specify<br>Yes/ no                                                                                                                                                                                                                                  | Yes<br>Not applicable<br>No                                                                                        |
| software/<br>model/ tool<br>used<br>Following<br>SEEA-EA<br>guidelines                                                                                    | standard.<br>GIS<br><u>Yes/ partly/no</u><br>If partly, please specify                                                                                                                                                                                                                                     | Yes<br>Not applicable                                                                                              |
| software/<br>model/ tool<br>used<br>Following<br>SEEA-EA<br>guidelines<br>Validation<br>process and/<br>or uncertainty                                    | standard.<br>GIS<br>Yes/partly/no<br>If partly, please specify<br>Yes/ no                                                                                                                                                                                                                                  | Yes<br>Not applicable<br>No                                                                                        |
| software/<br>model/ tool<br>used<br>Following<br>SEEA-EA<br>guidelines<br>Validation<br>process and/<br>or uncertainty                                    | standard.<br>GIS<br>Yes/partly/no<br>If partly, please specify<br>Yes/ no                                                                                                                                                                                                                                  | Yes<br>Not applicable<br>No<br>Not applicable                                                                      |
| software/<br>model/ tool<br>used<br>Following<br>SEEA-EA<br>guidelines<br>Validation<br>process and/<br>or uncertainty<br>assessment<br>Data              | standard.<br>GIS<br><i>Yes/ partly/no</i><br>If partly, please specify<br><i>Yes/ no</i><br>If yes, please specify                                                                                                                                                                                         | Yes<br>Not applicable<br>No<br>Not applicable                                                                      |
| software/<br>model/ tool<br>used<br>Following<br>SEEA-EA<br>guidelines<br>Validation<br>process and/<br>or uncertainty<br>assessment<br>Data              | standard.<br>GIS<br><i>Yes/ partly/no</i><br>If partly, please specify<br><i>Yes/ no</i><br>If yes, please specify                                                                                                                                                                                         | Yes<br>Not applicable<br>No<br>Not applicable                                                                      |
| software/<br>model/ tool<br>used<br>Following<br>SEEA-EA<br>guidelines<br>Validation<br>process and/<br>or uncertainty<br>assessment<br>Data<br>source(s) | standard.<br>GIS<br><i>Yes/ partly/no</i><br>If partly, please specify<br><i>Yes/ no</i><br>If yes, please specify                                                                                                                                                                                         | Yes<br>Not applicable<br>No<br>Not applicable                                                                      |

|                | Status Inlannad / in                        | In propagation                                                         |
|----------------|---------------------------------------------|------------------------------------------------------------------------|
|                | Status [planned/ in preparation/ published] | In preparation                                                         |
|                | Note(s)                                     | The extent account is planned to be                                    |
|                | Note(s)                                     | published by the Czech Statistical Office                              |
|                | If possible, specify link/                  | published by the obeen statistical onlice                              |
|                | source                                      |                                                                        |
| Accounting     | Yes/ no                                     | Yes                                                                    |
| spreadsheet(s) | Open access [yes/ no]                       | Yes                                                                    |
|                | Status [planned/ in                         | In preparation                                                         |
|                | preparation/ published]                     | r r · r · · · ·                                                        |
|                | Note(s)                                     |                                                                        |
|                | If possible, specify link/                  |                                                                        |
|                | source                                      |                                                                        |
| Map(s)         | Yes/ no                                     | Yes                                                                    |
| (formatted)    | Open access [yes/ no]                       | Yes                                                                    |
|                | Status [planned/ in                         | Planned                                                                |
|                | preparation/ published]                     |                                                                        |
|                | Note(s)                                     |                                                                        |
|                | If possible, specify link/                  |                                                                        |
|                | source                                      |                                                                        |
| Geodata        | Yes/ no                                     | No                                                                     |
|                | Open access [yes/ no]                       | Not applicable                                                         |
|                | Status [planned/ in                         | Not applicable                                                         |
|                | preparation/ published]                     |                                                                        |
|                | Note(s)                                     | Not applicable                                                         |
|                | If possible, specify link/                  | Not applicable                                                         |
| <u> </u>       | source                                      |                                                                        |
| Scientific     | Yes/ no                                     | Yes                                                                    |
| publication(s) | Open access [yes/ no]                       | Yes                                                                    |
|                | Status [planned/ in                         | Published                                                              |
|                | preparation/published]                      |                                                                        |
|                | Note(s)                                     |                                                                        |
|                | If possible, specify link/                  | https://www.tandfonline.com/doi/full/10.<br>1080/20964129.2018.1560233 |
| Other          | source<br>Yes/ no                           | No                                                                     |
| output(s)      | Open access [yes/ no]                       | Not applicable                                                         |
| such ar(o)     | Status [planned/ in                         | Not applicable                                                         |
|                | preparation/ published]                     | ποι αρμιταυτε                                                          |
|                | Note(s)                                     | Not applicable                                                         |
|                | If possible, specify link/                  | Not applicable                                                         |
|                | source                                      | approuble                                                              |
|                |                                             | · · · · · · · · · · · · · · · · · · ·                                  |
| MAIA           | Support through funding                     | Yes                                                                    |
| contribution   | [yes/no]                                    |                                                                        |
|                | Personalized support from                   | No                                                                     |
|                | MAIA community [yes/ no]                    |                                                                        |
|                | Support through more                        | Yes                                                                    |
|                | than one MAIA activity                      |                                                                        |
|                | (such as webinars and                       |                                                                        |
|                | workshops) <i>[yes/ no]</i>                 |                                                                        |

|            | Support through one MAIA activity (such as webinars and workshops) [yes/ no] | No                                                                                                       |
|------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Notes      |                                                                              |                                                                                                          |
| References |                                                                              | llou, I., 2019. Toward development of<br>the national level. Ecosystem Health and<br>964129.2018.1560233 |

## 6.3.2. Ecosystem service accounts – biophysical

| Country                                         |                                                                                                                                                           | Czech Republic                                        |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Account type                                    |                                                                                                                                                           | Ecosystem service account (biophysical)               |
| Account code                                    |                                                                                                                                                           | CZE_ESb_N_1                                           |
| Funding partners                                |                                                                                                                                                           | MAIA project; Global Change Research<br>Institute CAS |
| Other involved                                  | partners                                                                                                                                                  | Ministry of Agriculture                               |
|                                                 | Planned/ ongoing/ done                                                                                                                                    | Ongoing                                               |
| Status                                          | (Estimated) completion date                                                                                                                               | 2022                                                  |
| Ecosystems                                      | Ecosystem types                                                                                                                                           | Freshwater ecosystems, groundwater                    |
| Ecosystem<br>service                            | Ecosystem service                                                                                                                                         | Regulating                                            |
| service                                         | category<br>Ecosystem service                                                                                                                             | Water purification                                    |
| Temporal                                        | Temporal coverage                                                                                                                                         | 2018                                                  |
| specifics                                       | Frequency of updates                                                                                                                                      |                                                       |
| Spatial<br>specifics                            | Spatial scale [local,<br>regional, national]                                                                                                              | National                                              |
|                                                 | If sub-national, please specify area                                                                                                                      | Not applicable                                        |
|                                                 | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit] | Aggregated at ecological scale                        |
|                                                 | If aggregated, please<br>specify administrative or<br>ecological scale<br>Spatial resolution                                                              | Ecosystem types MAES                                  |
|                                                 |                                                                                                                                                           |                                                       |
| Methodology                                     |                                                                                                                                                           |                                                       |
| General<br>description<br>Specific<br>software/ | Delineation of basins to wat<br>basins.<br>MS Excel, GIS                                                                                                  | er withdrawal points. Land cover of the               |
| model/ tool<br>used                             |                                                                                                                                                           |                                                       |

| Ves/narth/no                                   | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| in particy, please specify                     | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Yes/no                                         | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| · · ·                                          | Aggregation of land cover (ecosystem                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                | types) extents - the sum of the areas of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| method)                                        | individual ecosystems for all sampling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| -                                              | points.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Yes/ no                                        | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| If yes, please specify                         | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Τ                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                | yearly water withdrawal, water analysis, unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| -                                              | onsumption of electrical power, raw water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                | nent technologies (data was provided by the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Charge rates (own c                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Vas/no                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| · · ·                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                | In preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                | In preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| source                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Yes/ no                                        | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Onen eccess [use / nel                         | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Open access <i>[yes/ no]</i>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Open access [yes/ no]<br>Status [planned/ in   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Status [planned/ in<br>preparation/ published] | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Status [planned/ in                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Status [planned/ in preparation/ published]    | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                | Yes/ no<br>If yes, please specify<br>Dataset containing y<br>production costs, co<br>quality, water treath<br>Ministry of Agricult<br>Charge rates (own of<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no |

| Scientific      | Yes/no                                      | No             |
|-----------------|---------------------------------------------|----------------|
| publication(s)  | Open access [yes/ no]                       | Not applicable |
|                 | Status [planned/ in                         | Not applicable |
|                 | preparation/ published]                     |                |
|                 | Note(s)                                     | Not applicable |
|                 | If possible, specify link/                  | Not applicable |
|                 | source                                      |                |
| Other output(s) | Yes/ no                                     | No             |
|                 | Open access [yes/ no]                       | Not applicable |
|                 | Status [planned/ in                         | Not applicable |
|                 | preparation/ published]                     |                |
|                 | Note(s)                                     | Not applicable |
|                 | If possible, specify link/                  | Not applicable |
|                 | source                                      | <u> </u>       |
|                 |                                             |                |
| MAIA            | Support through funding                     | Yes            |
| contribution    | [yes/no]                                    |                |
|                 | Personalized support from                   | Yes            |
|                 | MAIA community [yes/ no]                    | Yes            |
|                 | Support through more than one MAIA activity | ies            |
|                 | (such as webinars and                       |                |
|                 | workshops) [yes/ no]                        |                |
|                 | Support through one MAIA                    | No             |
|                 | activity (such as webinars                  |                |
|                 | and workshops) [yes/ no]                    |                |
| Notes           |                                             |                |
| References      |                                             |                |

| Country              |                                           | Czech Republic                                        |
|----------------------|-------------------------------------------|-------------------------------------------------------|
| Account type         |                                           | Ecosystem service account (biophysical)               |
| Account code         |                                           | CZE_ESb_N_2                                           |
|                      |                                           | MAIA project; Global Change Research<br>Institute CAS |
| Other involved       | partners                                  |                                                       |
|                      | Planned/ ongoing/ done                    | Ongoing                                               |
| Status               | (Estimated) completion date               | 2022                                                  |
| Ecosystems           | Ecosystem types                           | All ecosystems                                        |
| Ecosystem<br>service | Ecosystem service<br>category             | Regulating                                            |
|                      | Ecosystem service                         | Carbon sequestration                                  |
| Temporal             | Temporal coverage                         | 2018                                                  |
| specifics            | Frequency of updates                      |                                                       |
| Spatial<br>specifics | Spatial scale [local, regional, national] | National                                              |
|                      | If sub-national, please specify area      | Not applicable                                        |

|                                              | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]<br>If aggregated, please<br>specify administrative or<br>ecological scale<br>Spatial resolution | Fully spatially explicit Not applicable                                                                                                                                                           |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Methodology                                  |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                   |
| General<br>description                       | inventory, modelling of carb<br>LULUCF inventories (Eurost<br>emissions of CO2 eq. corresp                                                                                                                                                                | n LULUCF inventories, National forest<br>on sequestration and storage. Based on<br>at, FAO sources) the units refer to net<br>oonding to carbon sequestration<br>process-based modelling (InVEST) |
| Specific<br>software/<br>model/ tool<br>used | InVEST                                                                                                                                                                                                                                                    |                                                                                                                                                                                                   |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                            | Yes                                                                                                                                                                                               |
| SEEA-EA<br>guidelines                        | If partly, please specify                                                                                                                                                                                                                                 | Not applicable                                                                                                                                                                                    |
| Indicators used                              | Yes/ no                                                                                                                                                                                                                                                   |                                                                                                                                                                                                   |
|                                              | If yes, please specify                                                                                                                                                                                                                                    |                                                                                                                                                                                                   |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                                                   | Yes                                                                                                                                                                                               |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                          | Carbon data is aggregated at the level of ecosystem types                                                                                                                                         |
| Validation                                   | Yes/ no                                                                                                                                                                                                                                                   | No                                                                                                                                                                                                |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                                                    | Not applicable                                                                                                                                                                                    |
| Data cource(c)                               |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                   |
| Data source(s)                               | <ul> <li>LULUCF inventory</li> <li>National forest inver</li> </ul>                                                                                                                                                                                       | tory                                                                                                                                                                                              |
|                                              | <ul> <li>National forest liver</li> <li>Scientific literature</li> </ul>                                                                                                                                                                                  | itor y                                                                                                                                                                                            |
|                                              |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                   |
| Output(s)                                    |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                   |
| Report(s)                                    | Yes/ no                                                                                                                                                                                                                                                   | Yes                                                                                                                                                                                               |
| 1 (1)                                        | Open access [yes/ no]                                                                                                                                                                                                                                     | Yes                                                                                                                                                                                               |
|                                              | Status [planned/ in preparation/ published]                                                                                                                                                                                                               | Planned                                                                                                                                                                                           |
|                                              | Note(s)                                                                                                                                                                                                                                                   |                                                                                                                                                                                                   |
|                                              | If possible, specify link/                                                                                                                                                                                                                                |                                                                                                                                                                                                   |
|                                              | source<br>Yes/ no                                                                                                                                                                                                                                         | Yes                                                                                                                                                                                               |
|                                              | 105/110                                                                                                                                                                                                                                                   | 105                                                                                                                                                                                               |

| Accounting      | Open access [yes/ no]                  | Yes            |
|-----------------|----------------------------------------|----------------|
| spreadsheet(s)  | Status [planned/ in                    | In preparation |
| oproudoncet(e)  | preparation/ published]                |                |
|                 | Note(s)                                |                |
|                 | If possible, specify link/             |                |
|                 | source                                 |                |
| Map(s)          | Yes/ no                                | Yes            |
| (formatted)     | Open access [yes/ no]                  | Yes            |
|                 | Status [planned/ in                    | In preparation |
|                 | preparation/ published]                | p. oparation   |
|                 | Note(s)                                |                |
|                 | If possible, specify link/             |                |
|                 | source                                 |                |
| Geodata         | Yes/ no                                | No             |
|                 | Open access [yes/ no]                  | Not applicable |
|                 | Status [planned/ in                    | Not applicable |
|                 | preparation/ published]                |                |
|                 | Note(s)                                | Not applicable |
|                 | If possible, specify link/             | Not applicable |
|                 | source                                 |                |
| Scientific      | Yes/ no                                | No             |
| publication(s)  | Open access [yes/ no]                  | Not applicable |
|                 | Status [planned/ in                    | Not applicable |
|                 | preparation/ published]                |                |
|                 | Note(s)                                | Not applicable |
|                 | If possible, specify link/             | Not applicable |
|                 | source                                 |                |
| Other output(s) | Yes/ no                                | No             |
|                 | Open access [yes/ no]                  | Not applicable |
|                 | Status [planned/ in                    | Not applicable |
|                 | preparation/ published]                |                |
|                 | Note(s)                                | Not applicable |
|                 | If possible, specify link/             | Not applicable |
|                 | source                                 |                |
| 36474           |                                        |                |
| MAIA            | Support through funding                | Yes            |
| contribution    | [yes/ no]<br>Personalized support from | Yes            |
|                 | MAIA community [yes/ no]               | 105            |
|                 | Support through more                   | Yes            |
|                 | than one MAIA activity                 |                |
|                 | (such as webinars and                  |                |
|                 | workshops) [yes/ no]                   |                |
|                 | Support through one MAIA               | No             |
|                 | activity (such as webinars             |                |
|                 | and workshops) <i>[yes/ no]</i>        |                |
| Notes           |                                        |                |
| References      |                                        |                |

| country Gzeen Republic | Country | Czech Republic |  |
|------------------------|---------|----------------|--|
|------------------------|---------|----------------|--|

| Account type                  |                                                 | Ecosystem service account (biophysical)    |
|-------------------------------|-------------------------------------------------|--------------------------------------------|
| Account code                  |                                                 | CZE_ESb_N_3                                |
| Funding partners              |                                                 |                                            |
| Other involved                |                                                 |                                            |
|                               | Planned/ ongoing/ done                          | Ongoing                                    |
| Status                        | (Estimated) completion                          | Not to be fully developed within the       |
|                               | date                                            | runtime of the MAIA project                |
| Ecosystems                    | Ecosystem types                                 |                                            |
| Ecosystem                     | Ecosystem service                               | Regulating                                 |
| service                       | category                                        |                                            |
|                               | Ecosystem service                               | Water retention                            |
| Temporal                      | Temporal coverage                               | 2000-2018                                  |
| specifics                     | Frequency of updates                            | Yearly                                     |
| Spatial                       | Spatial scale <i>[local,</i>                    | National                                   |
| specifics                     | regional, national]                             | Regional                                   |
|                               | If sub-national, please specify area            | Main watersheds                            |
|                               | Spatial coverage [not                           | Spatially explicit                         |
|                               | spatially explicit,                             | Spatially explicit                         |
|                               | aggregated at                                   |                                            |
|                               | administrative scale,                           |                                            |
|                               | aggregated at ecological                        |                                            |
|                               | scale, fully spatially                          |                                            |
|                               | explicit]                                       |                                            |
|                               | If aggregated, please                           | Not applicable                             |
|                               | specify administrative or                       |                                            |
|                               | ecological scale                                | H. J.  |
|                               | Spatial resolution                              | Hydrological response units                |
| Methodology                   |                                                 |                                            |
| General                       | Modelling of water budged                       | by hydrological model                      |
| description                   | Modelling of water budged by hydrological model |                                            |
| Specific                      | Soil and water assessment t                     | ool (SWAT); R                              |
| software/                     |                                                 |                                            |
| model/ tool                   |                                                 |                                            |
| used                          |                                                 |                                            |
| Following                     | Yes/ partly/no                                  | Yes                                        |
| SEEA-EA                       | If partly, please specify                       | Not applicable                             |
| guidelines<br>Indicators used | Yes/ no                                         | Yes                                        |
| mulcators used                | If yes, please specify                          | Volume of water infiltration, number of    |
|                               | If yes, please specify                          | days with no water stress, possibly others |
| Aggregation                   | Yes/ no                                         |                                            |
|                               | If yes, please specify (e.g.                    |                                            |
|                               | aggregation level and                           |                                            |
|                               | method)                                         |                                            |
| Validation                    | Yes/ no                                         | Yes                                        |
| process and/                  | If yes, please specify                          | Model parameters adjusted against          |
| or uncertainty                |                                                 | measured stream flows                      |
| assessment                    |                                                 |                                            |

| Data source(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <ul> <li>Hydrometeorological data</li> <li>Digital terrain model EU-DEM</li> <li>SoilGrids</li> <li>Corine land cover</li> </ul> |                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------|
| Or the state of th |                                                                                                                                  |                |
| Output(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                  |                |
| Report(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes/no                                                                                                                           | Yes            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Open access [yes/ no]                                                                                                            | Yes            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Status [planned/ in                                                                                                              | Planned        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | preparation/published]                                                                                                           |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Note(s)                                                                                                                          |                |
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| Accounting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes/ no                                                                                                                          | Yes            |
| spreadsheet(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Open access [yes/ no]                                                                                                            | Yes            |
| 1 ()                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Status [planned/ in                                                                                                              | Planned        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | preparation/ published]                                                                                                          |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Note(s)                                                                                                                          |                |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | source                                                                                                                           |                |
| Map(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes/ no                                                                                                                          | Yes            |
| (formatted)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Open access [yes/ no]                                                                                                            | Yes            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Status [planned/ in                                                                                                              | Planned        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | preparation/ published]                                                                                                          |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Note(s)                                                                                                                          |                |
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| Geodata                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | source<br>Yes/ no                                                                                                                | Yes            |
| Geouata                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Open access [yes/ no]                                                                                                            | Yes            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Status [planned/ in                                                                                                              | Planned        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | preparation/ published]                                                                                                          | Tanneu         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Note(s)                                                                                                                          |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | If possible, specify link/                                                                                                       |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | source                                                                                                                           |                |
| Scientific                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes/ no                                                                                                                          | Yes            |
| publication(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Open access [yes/ no]                                                                                                            | No             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Status [planned/ in                                                                                                              | Planned        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | preparation/published]                                                                                                           |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Note(s)                                                                                                                          |                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | If possible, specify link/<br>source                                                                                             |                |
| Other output(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes/ no                                                                                                                          | No             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Open access [yes/ no]                                                                                                            | Not applicable |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Status [planned/ in                                                                                                              | Not applicable |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | preparation/ published]                                                                                                          | **             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Note(s)                                                                                                                          | Not applicable |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | If possible, specify link/                                                                                                       | Not applicable |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | source                                                                                                                           |                |

| MAIA         | Support through funding                    | No  |
|--------------|--------------------------------------------|-----|
| contribution | [yes/ no]                                  |     |
|              | Personalized support from                  | Yes |
|              | MAIA community [yes/ no]                   |     |
|              | Support through more                       | Yes |
|              | than one MAIA activity                     |     |
|              | (such as webinars and                      |     |
|              | workshops) <i>[yes/ no]</i>                |     |
|              | Support through one MAIA                   | No  |
|              | activity (such as webinars                 |     |
|              | and workshops) <i>[yes/ no]</i>            |     |
| Notes        | The account has been addressed in MAIA WP4 |     |
| References   |                                            |     |

## 6.3.3. Ecosystem service accounts – monetary

| Country              |                                                                                                                                                           | Czech Republic                                        |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Account type         |                                                                                                                                                           | Ecosystem service account (monetary)                  |
| Account code         |                                                                                                                                                           | CZE_ESm_N_1                                           |
| Funding partners     |                                                                                                                                                           | MAIA project; Global Change Research<br>Institute CAS |
| Other involved       | partners                                                                                                                                                  |                                                       |
|                      | Planned/ ongoing/ done                                                                                                                                    | Ongoing                                               |
| Status               | (Estimated) completion date                                                                                                                               | 2022                                                  |
| Ecosystems           | Ecosystem types                                                                                                                                           | Freshwater ecosystems, groundwater                    |
| Ecosystem<br>service | Ecosystem service<br>category                                                                                                                             | Regulating                                            |
|                      | Ecosystem service                                                                                                                                         | Water filtration                                      |
| Temporal             | Temporal coverage                                                                                                                                         | 2018                                                  |
| specifics            | Frequency of updates                                                                                                                                      |                                                       |
| Spatial<br>specifics | Spatial scale [local, regional, national]                                                                                                                 | National                                              |
|                      | If sub-national, please specify area                                                                                                                      | Not applicable                                        |
|                      | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit] | Not spatially explicit                                |
|                      | If aggregated, please<br>specify administrative or<br>ecological scale                                                                                    | Not applicable                                        |
|                      | Spatial resolution                                                                                                                                        | Not applicable                                        |
|                      |                                                                                                                                                           |                                                       |
| Methodology          |                                                                                                                                                           |                                                       |

| General                                             | Replacement cost approach                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                               |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description<br>Specific                             | STATA, linear regression                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                               |
| software/                                           | STATA, inteal regression                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                               |
| model/ tool                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                               |
| used                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                               |
| Following                                           | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Yes                                                                                                                                                                                                                                           |
| SEEA-EA                                             | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Not applicable                                                                                                                                                                                                                                |
| guidelines                                          | in paray, prease speeny                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                               |
| Indicators used                                     | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | No                                                                                                                                                                                                                                            |
|                                                     | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Not applicable                                                                                                                                                                                                                                |
| Aggregation                                         | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                                                                                                                                                                                                                                           |
|                                                     | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | The sum of the groundwater purification value for the whole Czech Republic                                                                                                                                                                    |
| Validation                                          | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                               |
| process and/                                        | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | The difference in production costs of                                                                                                                                                                                                         |
| or uncertainty                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | drinking water from groundwater and                                                                                                                                                                                                           |
| assessment                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | surface water depended on the model                                                                                                                                                                                                           |
|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | specification. It ranged between 0.078 and 0.093 EUR/m3. We used the cost difference                                                                                                                                                          |
|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | of the model specification with significant                                                                                                                                                                                                   |
|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | variables only, which was 0.085 EUR/m3                                                                                                                                                                                                        |
|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | variables only, when was 0.005 hord ins                                                                                                                                                                                                       |
|                                                     | <ul> <li>Dataset containing yearly water withdrawal, water analysis, unit production costs, consumption of electrical power, raw water quality, water treatment technologies (data was provided by the Ministry of Agriculture)</li> <li>Charge rates (own data collection)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                               |
|                                                     | Charge rates (own of the second |                                                                                                                                                                                                                                               |
|                                                     | Charge rates (own of the second |                                                                                                                                                                                                                                               |
| Output(s)                                           | Charge rates (own of the second |                                                                                                                                                                                                                                               |
| Output(s)<br>Report(s)                              | Charge rates (own of the second |                                                                                                                                                                                                                                               |
|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | lata collection)                                                                                                                                                                                                                              |
|                                                     | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | lata collection)<br>Yes                                                                                                                                                                                                                       |
|                                                     | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Yes       Yes                                                                                                                                                                                                                                 |
|                                                     | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Yes       Yes                                                                                                                                                                                                                                 |
| Report(s)<br>Accounting                             | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes       Yes                                                                                                                                                                                                                                 |
| Report(s)                                           | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes       Yes       Yes       In preparation                                                                                                                                                                                                  |
| Report(s)<br>Accounting                             | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Ata collection)         Yes         Yes         In preparation         Yes         Yes         Yes                                                                                                                                            |
| Report(s)<br>Accounting                             | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Ata collection)   Yes   Yes   In preparation   Yes   Yes   Yes                                                                                                                                                                                |
| Report(s)<br>Accounting                             | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Ata collection)   Yes   Yes   In preparation   Yes   Yes   Yes                                                                                                                                                                                |
| Report(s)<br>Accounting                             | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ata collection)   Yes   Yes   In preparation   Yes   Yes   Yes                                                                                                                                                                                |
| Report(s)<br>Accounting<br>spreadsheet(s)           | Yes/ noOpen access [yes/ no]Status [planned/ in<br>preparation/ published]Note(s)If possible, specify link/<br>sourceYes/ noOpen access [yes/ no]Status [planned/ in<br>preparation/ published]Note(s)If possible, specify link/<br>sourceIf possible, specify link/<br>source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Ata collection)         Yes         Yes         In preparation         Yes         Yes         Yes         In preparation         In preparation         In preparation         In preparation         Yes         Yes         In preparation |
| Report(s)<br>Accounting<br>spreadsheet(s)<br>Map(s) | Yes/ noOpen access [yes/ no]Status [planned/ in<br>preparation/ published]Note(s)If possible, specify link/<br>sourceYes/ noOpen access [yes/ no]Status [planned/ in<br>preparation/ published]Note(s)If possible, specify link/<br>sourceYes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Ata collection)   Yes   Yes   In preparation   Yes   Yes   Yes   In preparation   In preparation                                                                                                                                              |
| Report(s)<br>Accounting<br>spreadsheet(s)           | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Ata collection)   Yes   Yes   In preparation   Yes   Yes   Yes   Yes   In preparation   In preparation   No   No   Not applicable                                                                                                             |
| Report(s)<br>Accounting<br>spreadsheet(s)<br>Map(s) | Yes/ noOpen access [yes/ no]Status [planned/ in<br>preparation/ published]Note(s)If possible, specify link/<br>sourceYes/ noOpen access [yes/ no]Status [planned/ in<br>preparation/ published]Note(s)If possible, specify link/<br>sourceYes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Ata collection)   Yes   Yes   In preparation   Yes   Yes   Yes   In preparation   No                                                                                                                                                          |

|                      | If possible, specify link/                                                                                                                                                | Not applicable            |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|                      | source                                                                                                                                                                    | Not applicable            |
| Geodata              | Yes/ no                                                                                                                                                                   | No                        |
|                      | Open access [yes/ no]                                                                                                                                                     | Not applicable            |
|                      | Status [planned/ in<br>preparation/ published]                                                                                                                            | Not applicable            |
|                      | Note(s)                                                                                                                                                                   | Not applicable            |
|                      | If possible, specify link/<br>source                                                                                                                                      | Not applicable            |
| Scientific           | Yes/ no                                                                                                                                                                   | Yes                       |
| publication(s)       | Open access [yes/ no]                                                                                                                                                     | Yes                       |
|                      | Status [planned/ in preparation/ published]                                                                                                                               | In preparation: submitted |
|                      | Note(s)<br>If possible, specify link/<br>source                                                                                                                           |                           |
| Other output(s)      | Yes/ no                                                                                                                                                                   | No                        |
|                      | Open access [yes/ no]                                                                                                                                                     | Not applicable            |
|                      | Status [planned/ in preparation/ published]                                                                                                                               | Not applicable            |
|                      | Note(s)                                                                                                                                                                   | Not applicable            |
|                      | If possible, specify link/<br>source                                                                                                                                      | Not applicable            |
|                      |                                                                                                                                                                           |                           |
| MAIA<br>contribution | Support through funding [yes/ no]                                                                                                                                         | Yes                       |
|                      | Personalized support from MAIA community [yes/ no]                                                                                                                        | Yes                       |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no]                                                                           | Yes                       |
|                      | Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no]                                                                                        | No                        |
| Notes                |                                                                                                                                                                           |                           |
| References           | Horváthová, E. Analysis of Drinking Water Treatment Costs – with an Application to Groundwater Purification Valuation. One Ecosystem. (submitted), 10.3897/oneeco.coll.94 |                           |

| Country                 |                        | Czech Republic                       |
|-------------------------|------------------------|--------------------------------------|
| Account type            |                        | Ecosystem service account (monetary) |
| Account code            |                        | CZE_ESm_N_2                          |
| Funding partners        |                        | MAIA project; Global Change Research |
|                         |                        | Institute CAS                        |
| Other involved partners |                        |                                      |
| Status                  | Planned/ ongoing/ done | Ongoing                              |

|                                              | (Estimated) completion                                                                                                                                                                                                                                                                                                                                                                  | 2022                                       |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
|                                              | date                                                                                                                                                                                                                                                                                                                                                                                    |                                            |
| Ecosystems                                   | Ecosystem types                                                                                                                                                                                                                                                                                                                                                                         | All ecosystems                             |
| Ecosystem                                    | Ecosystem service                                                                                                                                                                                                                                                                                                                                                                       | Regulating                                 |
| service                                      | category                                                                                                                                                                                                                                                                                                                                                                                |                                            |
|                                              | Ecosystem service                                                                                                                                                                                                                                                                                                                                                                       | Carbon sequestration                       |
| Temporal                                     | Temporal coverage                                                                                                                                                                                                                                                                                                                                                                       | 2018                                       |
| specifics                                    | Frequency of updates                                                                                                                                                                                                                                                                                                                                                                    |                                            |
| Spatial                                      | Spatial scale <i>[local,</i>                                                                                                                                                                                                                                                                                                                                                            | National                                   |
| specifics                                    | <i>regional, national]</i><br>If sub-national, please                                                                                                                                                                                                                                                                                                                                   | Not applicable                             |
|                                              | specify area                                                                                                                                                                                                                                                                                                                                                                            | Not applicable                             |
|                                              | Spatial coverage [not                                                                                                                                                                                                                                                                                                                                                                   | Not spatially explicit                     |
|                                              | spatially explicit,                                                                                                                                                                                                                                                                                                                                                                     | ······································     |
|                                              | aggregated at                                                                                                                                                                                                                                                                                                                                                                           |                                            |
|                                              | administrative scale,                                                                                                                                                                                                                                                                                                                                                                   |                                            |
|                                              | aggregated at ecological                                                                                                                                                                                                                                                                                                                                                                |                                            |
|                                              | scale, fully spatially<br>explicit]                                                                                                                                                                                                                                                                                                                                                     |                                            |
|                                              | If aggregated, please                                                                                                                                                                                                                                                                                                                                                                   | Not applicable                             |
|                                              | specify administrative or                                                                                                                                                                                                                                                                                                                                                               | Not applicable                             |
|                                              | ecological scale                                                                                                                                                                                                                                                                                                                                                                        |                                            |
|                                              | Spatial resolution                                                                                                                                                                                                                                                                                                                                                                      | Not applicable                             |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                         |                                            |
| Methodology                                  |                                                                                                                                                                                                                                                                                                                                                                                         |                                            |
| General<br>description                       | The Damage based approach or the social cost of carbon (SCC); Values<br>estimated by Integrated Assessment Models as calculated by the United<br>States Government; Values estimated by applying a meta-analysis value<br>transfer on the estimated SCC; The market based or marginal abatement<br>cost (MAC) Values provide by the European Union Emissions Trading<br>System (EU ETS) |                                            |
| Specific<br>software/<br>model/tool<br>used  |                                                                                                                                                                                                                                                                                                                                                                                         |                                            |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                          | Yes                                        |
| SEEA-EA<br>guidelines                        | If partly, please specify                                                                                                                                                                                                                                                                                                                                                               | Not applicable                             |
| Indicators used                              | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                 |                                            |
|                                              | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                  |                                            |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                        |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                                                                                                                                        | Value transfer per tonne of carbon         |
| Validation                                   | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                 | No                                         |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                  | Not applicable                             |
| Data source(s)                               | Values estimated by the estimated SCC                                                                                                                                                                                                                                                                                                                                                   | applying a meta-analysis value transfer on |

|                 |                                                | he European Union Emissions Trading System |
|-----------------|------------------------------------------------|--------------------------------------------|
|                 | (EU ETS)                                       |                                            |
| Output(c)       |                                                |                                            |
| Output(s)       | Vac/ma                                         | Yes                                        |
| Report(s)       | Yes/no                                         | Yes                                        |
|                 | Open access [yes/ no]                          |                                            |
|                 | Status [planned/ in<br>preparation/ published] | Planned                                    |
|                 | Note(s)                                        |                                            |
|                 | If possible, specify link/                     |                                            |
|                 | source                                         |                                            |
| Accounting      | Yes/ no                                        | Yes                                        |
| spreadsheet(s)  | Open access [yes/ no]                          | Yes                                        |
| ,               | Status [planned/ in                            | In preparation                             |
|                 | preparation/ published]                        |                                            |
|                 | Note(s)                                        |                                            |
|                 | If possible, specify link/                     |                                            |
|                 | source                                         |                                            |
| Map(s)          | Yes/ no                                        | No                                         |
| (formatted)     | Open access [yes/ no]                          | Not applicable                             |
|                 | Status [planned/ in                            | Not applicable                             |
|                 | preparation/ published]                        |                                            |
|                 | Note(s)                                        | Not applicable                             |
|                 | If possible, specify link/                     | Not applicable                             |
|                 | source                                         |                                            |
| Geodata         | Yes/ no                                        | No                                         |
|                 | Open access [yes/ no]                          | Not applicable                             |
|                 | Status [planned/ in                            | Not applicable                             |
|                 | preparation/ published]                        | Neteralizable                              |
|                 | Note(s)                                        | Not applicable                             |
|                 | If possible, specify link/<br>source           | Not applicable                             |
| Scientific      | Yes/ no                                        | Yes                                        |
| publication(s)  | Open access [yes/ no]                          | Yes                                        |
| p 451104 (0)    | Status [planned/ in                            | Published                                  |
|                 | preparation/ published]                        | i ublisheu                                 |
|                 | Note(s)                                        |                                            |
|                 | If possible, specify link/                     | https://www.sciencedirect.com/science/ar   |
|                 | source                                         | ticle/pii/S2212041621000206                |
| Other output(s) | Yes/ no                                        | No                                         |
|                 | Open access [yes/ no]                          | Not applicable                             |
|                 | Status [planned/ in                            | Not applicable                             |
|                 | preparation/ published]                        |                                            |
|                 | Note(s)                                        | Not applicable                             |
|                 | If possible, specify link/                     | Not applicable                             |
|                 | source                                         |                                            |
|                 |                                                |                                            |
| MAIA            | Support through funding                        | Yes                                        |
| contribution    | [yes/ no]                                      |                                            |

|            | Personalized support from                                                | Yes |
|------------|--------------------------------------------------------------------------|-----|
|            | MAIA community [yes/ no]                                                 |     |
|            | Support through more                                                     | Yes |
|            | than one MAIA activity                                                   |     |
|            | (such as webinars and                                                    |     |
|            | workshops) <i>[yes/ no]</i>                                              |     |
|            | Support through one MAIA                                                 | No  |
|            | activity (such as webinars                                               |     |
|            | and workshops) <i>[yes/ no]</i>                                          |     |
| Notes      |                                                                          |     |
| References | Grammatikopulou, I., Vačkářová, D. (2021). The value of forest ecosystem |     |
|            | services: A meta-analysis at the European scale and application to       |     |
|            | national ecosystem accounting. Ecosystem Services 48, 101262.            |     |

| Country          |                                                                                                                                                 | Czech Republic                               |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Account type     |                                                                                                                                                 | Ecosystem service account (monetary)         |
| Account code     |                                                                                                                                                 | CZE_ESm_N_3                                  |
| Funding partners |                                                                                                                                                 |                                              |
| Other involved   | partners                                                                                                                                        | Czech Statistical Office                     |
|                  | Planned/ ongoing/ done                                                                                                                          | Ongoing                                      |
| Status           | (Estimated) completion                                                                                                                          | Not to be fully developed within the         |
|                  | date                                                                                                                                            | runtime of the MAIA project                  |
| Ecosystems       | Ecosystem types                                                                                                                                 | All – not distinguished                      |
| Ecosystem        | Ecosystem service                                                                                                                               | Cultural                                     |
| service          | category                                                                                                                                        |                                              |
|                  | Ecosystem service                                                                                                                               | Nature-motivated tourism                     |
| Temporal         | Temporal coverage                                                                                                                               | 2018, 2019                                   |
| specifics        |                                                                                                                                                 | 2020 - when statistics released (possibly in |
|                  | Frequency of updates                                                                                                                            | 03/2022)<br>Annual                           |
| Spatial          | Spatial scale <i>[local,</i>                                                                                                                    | National                                     |
| specifics        | regional, national]                                                                                                                             |                                              |
| speemes          | If sub-national, please                                                                                                                         | Not applicable                               |
|                  | specify area                                                                                                                                    |                                              |
|                  | Spatial coverage [not                                                                                                                           | Not spatially explicit at the moment; it is  |
|                  | spatially explicit,                                                                                                                             | foreseeable that the account can be made     |
|                  | aggregated at                                                                                                                                   | (fully) spatially explicit in the future     |
|                  | administrative scale,                                                                                                                           |                                              |
|                  | aggregated at ecological                                                                                                                        |                                              |
|                  | scale, fully spatially<br>explicit]                                                                                                             |                                              |
|                  | If aggregated, please                                                                                                                           | Not applicable                               |
|                  | specify administrative or                                                                                                                       |                                              |
|                  | ecological scale                                                                                                                                |                                              |
|                  | Spatial resolution                                                                                                                              | Not applicable                               |
|                  |                                                                                                                                                 |                                              |
| Methodology      |                                                                                                                                                 |                                              |
| General          | The account uses expenditu                                                                                                                      | re data from the Tourism Satellite Account   |
| description      | and two survey sources conducted with tourist in the Czech Republic to determine portion of tourism spending that could be attributed to nature |                                              |
|                  |                                                                                                                                                 |                                              |

|                              | I                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | related activities. Broadly speaking we are following the Dutch approach                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 0                            | with some modifications.                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Specific                     |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| software/                    |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| model/tool                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| used                         | Vac / nanthy /na                                                                                                                                                                                                                                                  | Voc or Dorthy                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Following<br>SEEA-EA         | Yes/ partly/no                                                                                                                                                                                                                                                    | Yes or Partly                                                                                                                                                                                                                                                                                                                                                                                                                   |
| guidelines                   | If partly, please specify                                                                                                                                                                                                                                         | SEEA guidelines is not detailed enough to<br>be sure (no published report or scientific<br>paper really is). We are using expenditure<br>data from the Tourism Satellite Account,<br>which should be correct in principle. As per<br>"9.47 Where travel cost data are not                                                                                                                                                       |
|                              |                                                                                                                                                                                                                                                                   | available, an alternative method to obtain                                                                                                                                                                                                                                                                                                                                                                                      |
|                              |                                                                                                                                                                                                                                                                   | the exchange value of recreation related                                                                                                                                                                                                                                                                                                                                                                                        |
|                              |                                                                                                                                                                                                                                                                   | services is to sum relevant consumption                                                                                                                                                                                                                                                                                                                                                                                         |
|                              |                                                                                                                                                                                                                                                                   | expenditures (e.g., using data from tourism                                                                                                                                                                                                                                                                                                                                                                                     |
| Indicators used              | Vac/ma                                                                                                                                                                                                                                                            | satellite accounts)."<br>No                                                                                                                                                                                                                                                                                                                                                                                                     |
| mulcators used               | Yes/no                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| A                            | If yes, please specify                                                                                                                                                                                                                                            | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Aggregation                  | Yes/no                                                                                                                                                                                                                                                            | Yes                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                  | The data is already aggregated from the<br>Satellite account, done by the National<br>Statistical Office                                                                                                                                                                                                                                                                                                                        |
| Validation                   | Yes/ no                                                                                                                                                                                                                                                           | Yes – uncertainty assessment, to some                                                                                                                                                                                                                                                                                                                                                                                           |
| process and/                 |                                                                                                                                                                                                                                                                   | extent.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                                                            | We are using different approaches and get<br>different results: 1) using two survey<br>methods to have a lower and upper bound<br>and an average; 2) using input expert<br>assessment to determine proportionality of<br>different activities that could be attributed<br>to nature; and 3) estimating values for<br>recreation only activities and for all<br>activities (following discussion with the<br>statistical office) |
|                              |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Data source(s)               | <ul> <li>Czech Tourism Satellite Account data<br/><u>https://www.czso.cz/csu/czso/tourism satellite account tables</u></li> <li>Two surveys: 1) Official Tourism Survey by the Czech Statistical<br/>Office and 2) survey from the CzechTourism Agency</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Output(c)                    |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Output(s)                    | Vac/ma                                                                                                                                                                                                                                                            | No (not yet)                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Report(s)                    | Yes/no                                                                                                                                                                                                                                                            | No (not yet)                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                              | Open access [yes/ no]                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Status [planned/ in preparation/ published]                                                                                                                                                                                                                       | In preparation                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                              | Note(s)                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | If possible, specify link/                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | source                                                                                                                                                                                                                                                            | No                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                              | Yes/ no                                                                                                                                                                                                                                                           | No                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Accounting      | Open access [yes/ no]                                      | No                    |
|-----------------|------------------------------------------------------------|-----------------------|
| spreadsheet(s)  | Status [planned/ in                                        | Planned in the future |
| opreudoneer(o)  | preparation/ published]                                    |                       |
|                 | Note(s)                                                    |                       |
|                 | If possible, specify link/                                 |                       |
|                 | source                                                     |                       |
| Map(s)          | Yes/ no                                                    | No                    |
| (formatted)     | Open access [yes/ no]                                      | No                    |
|                 | Status [planned/ in                                        | Possibly planned      |
|                 | preparation/ published]                                    |                       |
|                 | Note(s)                                                    |                       |
|                 | If possible, specify link/                                 |                       |
|                 | source                                                     |                       |
| Geodata         | Yes/ no                                                    | No                    |
|                 | Open access [yes/ no]                                      | Not applicable        |
|                 | Status [planned/ in                                        | Not applicable        |
|                 | preparation/ published]                                    |                       |
|                 | Note(s)                                                    | Not applicable        |
|                 | If possible, specify link/                                 | Not applicable        |
|                 | source                                                     |                       |
| Scientific      | Yes/ no                                                    | No                    |
| publication(s)  | Open access [yes/ no]                                      |                       |
|                 | Status [planned/ in                                        | Planned               |
|                 | preparation/published]                                     |                       |
|                 | Note(s)                                                    |                       |
|                 | If possible, specify link/                                 |                       |
|                 | source                                                     | N.                    |
| Other output(s) | Yes/ no                                                    | No                    |
|                 | Open access [yes/ no]                                      | Not applicable        |
|                 | Status [planned/ in                                        | Not applicable        |
|                 | preparation/ published] Note(s)                            | Not applicable        |
|                 | If possible, specify link/                                 | Not applicable        |
|                 | source                                                     | ποι αρμιταυτε         |
|                 |                                                            | 1                     |
| MAIA            | Support through funding                                    | No                    |
| contribution    | [yes/no]                                                   |                       |
|                 | Personalized support from                                  | Yes                   |
|                 | MAIA community [yes/ no]                                   |                       |
|                 | Support through more                                       | Yes                   |
|                 | than one MAIA activity                                     |                       |
|                 | (such as webinars and                                      |                       |
|                 | workshops) [yes/ no]                                       |                       |
|                 | Support through one MAIA                                   | No                    |
|                 | activity (such as webinars and workshops) <i>[yes/ no]</i> |                       |
| Notes           | and workshopsj [yes/ 110]                                  | 1                     |
| References      |                                                            |                       |
| Nelei elites    |                                                            |                       |

## 6.4. Annex: Finland

#### 6.4.1. Ecosystem extent account

| Country                |                                                                                                                                                           | Finland                                                                                                                                              |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type           |                                                                                                                                                           | Ecosystem extent account                                                                                                                             |
| Account code           |                                                                                                                                                           | FI_EE_N_1                                                                                                                                            |
| Funding partners       |                                                                                                                                                           | Finnish Environment Institute (SYKE),<br>funded by InterReg Central Baltic (2020)<br>and the MAIA Project                                            |
| Other involved         | partners                                                                                                                                                  |                                                                                                                                                      |
|                        | Planned/ ongoing/ done                                                                                                                                    | Ongoing                                                                                                                                              |
| Status                 | (Estimated) completion date                                                                                                                               | 2023                                                                                                                                                 |
|                        | (Sub-)national/<br>international                                                                                                                          | National                                                                                                                                             |
| Ecosystem              | If possible, please specify                                                                                                                               | Marine environment (species and habitat based assessment)                                                                                            |
| type<br>classification | If (sub-)national,<br>compatible with<br>international classification<br>(if yes, please specify<br>which)                                                | Habitats Directive Annex I habitats, Habitat<br>types based on IUCN Red List of Ecosystems<br>classification, broad habitats types (MSFD)            |
| Ecosystems             | Ecosystem types                                                                                                                                           | Marine ecosystems                                                                                                                                    |
| Temporal<br>specifics  | Temporal coverage                                                                                                                                         | Data from a national inventory programme,<br>complemented with monitoring data.<br>Assessment of the extent can be repeated at<br>regular intervals. |
|                        | Frequency of updates                                                                                                                                      | Extent calculations piloted. Updates can be done annually, if data allows.                                                                           |
| Spatial specifics      | Spatial scale [local, regional, national]                                                                                                                 | National                                                                                                                                             |
|                        | If sub-national, please specify area                                                                                                                      | Not applicable                                                                                                                                       |
|                        | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit] | Spatially explicit. Finnish sea areas, covering 81,500 km2.                                                                                          |
|                        | If aggregated, please<br>specify administrative or<br>ecological scale                                                                                    | Not applicable                                                                                                                                       |
|                        | Spatial resolution                                                                                                                                        | 20 m resolution                                                                                                                                      |
|                        |                                                                                                                                                           |                                                                                                                                                      |
| Methodology            |                                                                                                                                                           |                                                                                                                                                      |
| General                | Species-based extents rely on extensive spatial inventory data, from over                                                                                 |                                                                                                                                                      |
| description            | 160 000 underwater sites. Based on the data, distributions of species                                                                                     |                                                                                                                                                      |

| Specific<br>software/<br>model/ tool<br>used | have been modelled at a high resolution (20 m). Additional data includes<br>approximately 50 environmental variables, such as salinity, turbidity, or<br>topographical complexity, that may be used in modelling. The models<br>describe benthic invertebrates, vascular plants, alga and mosses, and as<br>such form the extent of Finnish marine ecosystems. The most of species<br>can be linked to international habitat classifications. As the distribution<br>models only describe the probability of detecting a species at a given<br>modelling grid (here, 400 m2), the probabilities need to be transformed<br>into spatial extent units. The challenge is that discretization degrades the<br>information content. For this reason, we calculated the median cover (%)<br>for each species, based on the VELMU inventory data (assessed by a diver<br>for 4 m2 sampling units). Then the extent per modelling unit (400m2 )<br>was calculated: median cover in dive * 0.04 * 100 * probability of<br>occurrence. For mobile species, it was assumed that the whole grid can be<br>suitable (400 * probability of occurrence). Calculations were done for all<br>~200 modelled species.<br>Data also includes Habitats Directive Annex I habitats, which are expert-<br>based assessments, and include eight habitats associated with marine<br>environments: reefs, narrow inlets, lagoons, estuaries, shallow bays, sand<br>banks and underwater parts of the Baltic Sea esker islands and islets. The<br>data also cover the broad habitat types as formulated by the Marine<br>Strategy Framework Directive, and habitat types based on the threatened<br>status assessment and habitat typology of the IUCN Red Listed<br>Ecosystems. All extents of individual species and habitats can be linked to<br>ecosystem services. Fish are excluded of the assessment, as such data is<br>not available.<br>The distribution of species was modelled based on an ensemble<br>modelling method, Boosted regression trees (BRT), which combine<br>statistical and machine learning traditions.<br>BRTs combine multiple best models instead of one, and they are able to<br>model interactions. BRTs are a comm |                                                                                            |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ey are used for various purposes. A general<br>an be found e.g. Elith et al., (2008), doi: |
|                                              | 10.1111/j.1365-2656.2008.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 01390.x                                                                                    |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Partly                                                                                     |
| SEEA-EA<br>guidelines                        | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The IUCN Global Ecosystem Typology (level six hierarchy)                                   |
| Validation                                   | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                                                                                        |
| process and/<br>or uncertainty               | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Species and habitat models are validated with data.                                        |
| assessment                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                            |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                            |
| Data<br>source(s)                            | Georeferenced data on mari                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ne environments:<br>rogramme for Marine Underwater Diversity                               |
| 300100(3)                                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | gae, vascular plants and invertebrates,                                                    |
|                                              | collected in 2004-20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 20 from ca. 160 000 sites.                                                                 |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | of soft bottom macrofauna and environmental                                                |
|                                              | <ul> <li>parameters (2004-2020)</li> <li>Spatial data on human activities and anthropogenic pressures on</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                            |
|                                              | and at sea, based on aerial image surveys and remote sensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                            |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                            |

| Output(s)                                    |                                             |                                          |
|----------------------------------------------|---------------------------------------------|------------------------------------------|
| Report(s)                                    | Yes/ no                                     | Yes (MAIA report)                        |
|                                              | Open access [yes/ no]                       | No                                       |
|                                              | Status [planned/ in                         | MAIA report published; scientific paper  |
|                                              | preparation/ published]                     | planned                                  |
|                                              | Note(s)                                     |                                          |
|                                              | If possible, specify link/                  |                                          |
|                                              | source                                      |                                          |
| Accounting                                   | Yes/ no                                     | No                                       |
| spreadsheet(s)                               | Open access [yes/ no]                       |                                          |
|                                              | Status [planned/ in                         | No. Only extent and condition assessment |
|                                              | preparation/ published]                     | done.                                    |
|                                              | Note(s)                                     |                                          |
|                                              | If possible, specify link/                  |                                          |
| Marca                                        | source                                      | V                                        |
| Map(s)                                       | Yes/ no                                     | Yes                                      |
| (formatted)                                  | Open access [yes/ no]                       | No                                       |
|                                              | Status [planned/ in preparation/ published] | In preparation                           |
|                                              | Note(s)                                     | Method of map production published in a  |
|                                              |                                             | MAIA project periodic report; scientific |
|                                              |                                             | publication planned                      |
|                                              | If possible, specify link/                  |                                          |
| Geodata                                      | source<br>Yes/ no                           | Yes                                      |
| Geouala                                      |                                             | No                                       |
|                                              | Open access [yes/ no]                       |                                          |
|                                              | Status [planned/ in preparation/ published] | No                                       |
|                                              | Note(s)                                     | Geodata used for estimating extent and   |
|                                              |                                             | condition available in SYKE              |
|                                              | If possible, specify link/                  |                                          |
|                                              | source                                      |                                          |
| Scientific                                   | Yes/ no                                     | No                                       |
| publication(s)                               | Open access [yes/ no]                       |                                          |
|                                              | Status [planned/ in                         | Planned                                  |
|                                              | preparation/ published]                     |                                          |
|                                              | Note(s)                                     |                                          |
|                                              | If possible, specify link/                  |                                          |
| 0.1                                          | source                                      | N N                                      |
| Other                                        | Yes/no                                      | No                                       |
| output(s)                                    | Open access [yes/ no]                       |                                          |
|                                              | Status [planned/ in                         |                                          |
|                                              | preparation/published]                      |                                          |
|                                              | Note(s)                                     |                                          |
|                                              | If possible, specify link/                  |                                          |
|                                              | source                                      |                                          |
| MAIA                                         | Support through funding                     | Yes                                      |
| contribution                                 | [yes/ no]                                   |                                          |
| - shurburburburburburburburburburburburburbu |                                             |                                          |

|            | Personalized support from MAIA community [yes/ no]                                              | Yes |
|------------|-------------------------------------------------------------------------------------------------|-----|
|            | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no] | Yes |
|            | Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no]              | No  |
| Notes      |                                                                                                 |     |
| References |                                                                                                 |     |

### 6.4.2. Ecosystem condition account

| Country                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Finland                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Ecosystem condition account                                                                                                                          |
| Account code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | FI_EC_N_1                                                                                                                                            |
| Funding partners                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Finnish Environment Institute (SYKE),<br>funded by InterReg Central Baltic (2020)<br>and the MAIA Project                                            |
| Other involved partners                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                      |
| Planned/ ongoing/ done                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Ongoing                                                                                                                                              |
| Status (Estimated) completion date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2023                                                                                                                                                 |
| <b>Ecosystems</b> Ecosystem types                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Marine ecosystem                                                                                                                                     |
| Temporal     Temporal coverage       specifics     Image: specific speci | Data from a national inventory programme,<br>complemented with monitoring data.<br>Assessment of the extent can be repeated at<br>regular intervals. |
| Frequency of updates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Condition calculated only once. Updates not yet done, dependent on data availability.                                                                |
| SpatialSpatial scale [local,specificsregional, national]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | National                                                                                                                                             |
| If sub-national, please specify area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Not applicable                                                                                                                                       |
| Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Spatially explicit. Finnish sea areas,<br>covering 81,500 km2.                                                                                       |
| If aggregated, please<br>specify administrative or<br>ecological scale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Not applicable                                                                                                                                       |
| Spatial resolution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 20 meters                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                      |
| Methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                      |

| General                  | -                                                                                                                                                                                                                                                                                                                                                                          | scribe the distribution of species, at the        |  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--|
| description              | -                                                                                                                                                                                                                                                                                                                                                                          | condition of the environment, which usually is    |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            | riod over years. Thus, degradation of habitats    |  |
|                          | and species due to factors such as eutrophication has already been<br>accounted for, based on information on turbidity or oxygen deficiency.<br>What is missing is their degradation status due to direct human activities,<br>such as conversion of coastal shores into infrastructure, dredging and<br>dumping, resulting in modification of the seafloor, habitat loss, |                                                   |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            |                                                   |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            |                                                   |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            |                                                   |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            | urbance. Such degradations necessarily do         |  |
|                          | 0                                                                                                                                                                                                                                                                                                                                                                          | is, and are thus less likely to be accounted for. |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            | f such activities on ecosystem extent was         |  |
|                          | -                                                                                                                                                                                                                                                                                                                                                                          | ased estimates on the magnitude and               |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            | tial context (Second Holistic Assessment of       |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            | Baltic Sea, HELCOM SPICE project,                 |  |
|                          | -                                                                                                                                                                                                                                                                                                                                                                          | workshops, unpublished), but was modified to      |  |
|                          | finer spatial scales (20 m). T                                                                                                                                                                                                                                                                                                                                             | 'he condition here is reported for human          |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            | itat loss (and species loss) per grid cell (400   |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            | ased on the average extent (m2) of the            |  |
| 0                        | activity in question, estimate                                                                                                                                                                                                                                                                                                                                             |                                                   |  |
| Specific                 | -                                                                                                                                                                                                                                                                                                                                                                          | vas modelled based on an ensemble                 |  |
| software/<br>model/ tool | statistical and machine learn                                                                                                                                                                                                                                                                                                                                              | regression trees (BRT), which combine             |  |
| used                     |                                                                                                                                                                                                                                                                                                                                                                            | models instead of one, and they are able to       |  |
| useu                     | -                                                                                                                                                                                                                                                                                                                                                                          | e a common approach for developing species        |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            | ey are used for various purposes. A general       |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            | an be found e.g. Elith et al., (2008), doi:       |  |
|                          | 10.1111/j.1365-2656.2008.                                                                                                                                                                                                                                                                                                                                                  |                                                   |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            |                                                   |  |
|                          | 0 1 1                                                                                                                                                                                                                                                                                                                                                                      | habitats was estimated in R, and raster-based     |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            | most impacted got a value of 0 (habitat lost),    |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            | dition (no human activity) a value of 1 (no       |  |
| Following                | decline in the habitat status                                                                                                                                                                                                                                                                                                                                              | j.<br>No                                          |  |
| SEEA-EA                  | If partly, please specify                                                                                                                                                                                                                                                                                                                                                  | Not applicable                                    |  |
| guidelines               | in particy, prease speeny                                                                                                                                                                                                                                                                                                                                                  | Not applicable                                    |  |
| Indicators used          | Yes/ no                                                                                                                                                                                                                                                                                                                                                                    | No                                                |  |
|                          | If yes, please specify                                                                                                                                                                                                                                                                                                                                                     | Not applicable                                    |  |
| Aggregation              | Yes/ no                                                                                                                                                                                                                                                                                                                                                                    |                                                   |  |
|                          | If yes, please specify (e.g.                                                                                                                                                                                                                                                                                                                                               |                                                   |  |
|                          | aggregation level and                                                                                                                                                                                                                                                                                                                                                      |                                                   |  |
| Validation               | method)                                                                                                                                                                                                                                                                                                                                                                    |                                                   |  |
| Validation process and/  | Yes/ no                                                                                                                                                                                                                                                                                                                                                                    |                                                   |  |
| or uncertainty           | If yes, please specify                                                                                                                                                                                                                                                                                                                                                     |                                                   |  |
| assessment               |                                                                                                                                                                                                                                                                                                                                                                            |                                                   |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            |                                                   |  |
| Data source(s)           | Aerial image surveys and remote sensing of human activities                                                                                                                                                                                                                                                                                                                |                                                   |  |
|                          | Expert-based workshops on the impact levels                                                                                                                                                                                                                                                                                                                                |                                                   |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            |                                                   |  |
|                          |                                                                                                                                                                                                                                                                                                                                                                            |                                                   |  |
| Output(s)<br>Report(s)   | Yes/ no                                                                                                                                                                                                                                                                                                                                                                    | No                                                |  |

|                      | Open access [yes/ no]                                                                           | No             |
|----------------------|-------------------------------------------------------------------------------------------------|----------------|
|                      |                                                                                                 | Planned        |
|                      | Status [planned/ in                                                                             | Planned        |
|                      | preparation/ published] Note(s)                                                                 |                |
|                      | If possible, specify link/                                                                      |                |
|                      | source                                                                                          |                |
| Accounting           | Yes/ no                                                                                         | No             |
| spreadsheet(s)       | Open access [yes/ no]                                                                           | No             |
|                      | Status [planned/ in                                                                             | Planned        |
|                      | preparation/ published]                                                                         |                |
|                      | Note(s)                                                                                         |                |
|                      | If possible, specify link/                                                                      |                |
|                      | source                                                                                          |                |
| Map(s)               | Yes/ no                                                                                         | Yes            |
| (formatted)          | Open access [yes/ no]                                                                           | No             |
|                      | Status [planned/ in                                                                             | In preparation |
|                      | preparation/ published]                                                                         |                |
|                      | Note(s)                                                                                         |                |
|                      | If possible, specify link/                                                                      |                |
|                      | source                                                                                          |                |
| Geodata              | Yes/ no                                                                                         | Yes            |
|                      | Open access [yes/ no]                                                                           | No             |
|                      | Status [planned/ in                                                                             | In preparation |
|                      | preparation/ published]                                                                         |                |
|                      | Note(s)                                                                                         |                |
|                      | If possible, specify link/<br>source                                                            |                |
| Scientific           | Yes/ no                                                                                         | No             |
| publication(s)       | Open access [yes/ no]                                                                           | No             |
| Free cost            | Status [planned/ in                                                                             | Planned        |
|                      | preparation/ published]                                                                         | i iainicu      |
|                      | Note(s)                                                                                         |                |
|                      | If possible, specify link/                                                                      |                |
|                      | source                                                                                          |                |
| Other output(s)      | Yes/ no                                                                                         | No             |
|                      | Open access [yes/ no]                                                                           |                |
|                      | Status [planned/ in                                                                             |                |
|                      | preparation/ published]                                                                         |                |
|                      | Note(s)                                                                                         |                |
|                      | If possible, specify link/                                                                      |                |
|                      | source                                                                                          |                |
|                      |                                                                                                 |                |
| MAIA<br>contribution | Support through funding [yes/no]                                                                | Yes            |
|                      | Personalized support from<br>MAIA community [yes/ no]                                           | Yes            |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no] | Yes            |
|                      |                                                                                                 |                |

|            | Support through one MAIA        | No |
|------------|---------------------------------|----|
|            | activity (such as webinars      |    |
|            | and workshops) <i>[yes/ no]</i> |    |
| Notes      |                                 |    |
| References |                                 |    |

### 6.5. Annex: France

## 6.5.1. Ecosystem extent account

| Country                             |                                                                                                                                                           | France                                                                                                                                         |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type                        |                                                                                                                                                           | Ecosystem extent account                                                                                                                       |
| Account code                        |                                                                                                                                                           | FR_EE_N_1                                                                                                                                      |
| Funding partners                    |                                                                                                                                                           | MAIA project                                                                                                                                   |
| Other involved partners             |                                                                                                                                                           | AgroParisTech, CIRED, collaboration from<br>the French Biodiversity Office (OFB), the<br>French ministry for an ecological transition<br>(MTE) |
|                                     | Planned/ ongoing/ done                                                                                                                                    | Ongoing                                                                                                                                        |
| Status                              | (Estimated) completion date                                                                                                                               |                                                                                                                                                |
|                                     | (Sub-)national/<br>international                                                                                                                          | International                                                                                                                                  |
| Factor                              | If possible, please specify                                                                                                                               | EUNIS classification                                                                                                                           |
| Ecosystem<br>type<br>classification | If (sub-)national,<br>compatible with<br>international classification<br>(if yes, please specify<br>which)                                                | Not applicable                                                                                                                                 |
| Ecosystems                          | Ecosystem types                                                                                                                                           | Marine ecosystems                                                                                                                              |
| Temporal                            | Temporal coverage                                                                                                                                         | 2000-2018 (composite map)                                                                                                                      |
| specifics                           | Frequency of updates                                                                                                                                      | No recurrent update                                                                                                                            |
| Spatial specifics                   | Spatial scale [local, regional, national]                                                                                                                 | National                                                                                                                                       |
|                                     | If sub-national, please specify area                                                                                                                      | Not applicable                                                                                                                                 |
|                                     | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit] | Fully spatially explicit                                                                                                                       |
|                                     | If aggregated, please<br>specify administrative or<br>ecological scale                                                                                    | Economic Exclusive Zone of France and marine sub-regions                                                                                       |
|                                     | Spatial resolution                                                                                                                                        | One-minute arc grid                                                                                                                            |

| Methodology    |                                        |                                              |
|----------------|----------------------------------------|----------------------------------------------|
| General        | Surface aggregation of marine habitats |                                              |
| description    | Surface apprepation of marine habitats |                                              |
| Specific       | GIS, R, postgreSQL                     |                                              |
| software/      | ,-,-,-,                                |                                              |
| model/tool     |                                        |                                              |
| used           |                                        |                                              |
| Following      | Yes/ partly/no                         | Yes, with EUNIS typology of habitats instead |
| SEEA-EA        |                                        | of IUCN typology                             |
| guidelines     | If partly, please specify              | Not applicable                               |
| Validation     | Yes/ no                                | Yes                                          |
| process and/   | If yes, please specify                 | Sensitivity analysis on grid and spatial     |
| or uncertainty |                                        | resolution used versus best-available maps   |
| assessment     |                                        |                                              |
|                |                                        |                                              |
| Data           | French biodiversity                    | office (OFB)                                 |
| source(s)      | Ifremer                                |                                              |
|                |                                        | rmation System (SIMM)                        |
|                | Quemmerais-Amice                       | e et al. (2020)                              |
|                |                                        |                                              |
| Output(s)      |                                        |                                              |
| Report(s)      | Yes/ no                                | Yes                                          |
|                | Open access [yes/ no]                  | Yes                                          |
|                | Status [planned/ in                    | In preparation                               |
|                | preparation/ published]                |                                              |
|                | Note(s)                                |                                              |
|                | If possible, specify link/             |                                              |
|                | source                                 |                                              |
| Accounting     | Yes/ no                                | No                                           |
| spreadsheet(s) | Open access [yes/ no]                  | Not applicable                               |
|                | Status [planned/ in                    | Not applicable                               |
|                | preparation/ published]                |                                              |
|                | Note(s)                                | Not applicable                               |
|                | If possible, specify link/             | Not applicable                               |
|                | source                                 |                                              |
| Map(s)         | Yes/ no                                | No                                           |
| (formatted)    | Open access [yes/ no]                  | Not applicable                               |
|                | Status [planned/ in                    | Not applicable                               |
|                | preparation/ published]                |                                              |
|                | Note(s)                                | Not applicable                               |
|                | If possible, specify link/             | Not applicable                               |
|                | source                                 |                                              |
| Geodata        | Yes/ no                                | Yes                                          |
|                | Open access [yes/ no]                  | No (MAIA viewer)                             |
|                | Status [planned/ in                    | Published (MAIA viewer)                      |
|                | preparation/ published]                |                                              |
|                | Note(s)                                |                                              |
|                | If possible, specify link/             |                                              |
|                | source                                 |                                              |

| Scientific     | Yes/ no                                                                                                                   | No                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| publication(s) | Open access [yes/ no]                                                                                                     | Not applicable                                   |
| pasitonion(s)  | Status [planned/ in                                                                                                       | Not applicable                                   |
|                | preparation/ published]                                                                                                   | Not applicable                                   |
|                | Note(s)                                                                                                                   | Not applicable                                   |
|                | If possible, specify link/                                                                                                | Not applicable                                   |
|                | source                                                                                                                    |                                                  |
| Other          | Yes/ no                                                                                                                   | No                                               |
| output(s)      | Open access [yes/ no]                                                                                                     | Not applicable                                   |
|                | Status [planned/ in preparation/ published]                                                                               | Not applicable                                   |
|                | Note(s)                                                                                                                   | Not applicable                                   |
|                | If possible, specify link/                                                                                                | Not applicable                                   |
|                | source                                                                                                                    |                                                  |
|                |                                                                                                                           |                                                  |
| MAIA           | Support through funding                                                                                                   | Yes                                              |
| contribution   | [yes/ no]                                                                                                                 | Yes                                              |
|                | Personalized support from MAIA community [yes/ no]                                                                        | ies                                              |
|                | Support through more                                                                                                      | Yes                                              |
|                | than one MAIA activity                                                                                                    |                                                  |
|                | (such as webinars and                                                                                                     |                                                  |
|                | workshops) [yes/ no]                                                                                                      |                                                  |
|                | Support through one MAIA                                                                                                  | No                                               |
|                | activity (such as webinars                                                                                                |                                                  |
| Nataa          | and workshops) [yes/ no]                                                                                                  | Franch matrice liter Frankrise Francesia         |
| Notes          |                                                                                                                           | French metropolitan Exclusive Economic           |
| References     | Zone as a whole and divided by sub-regions.<br>Comte, A., Kervinio, Y., Levrel, H., 2020. Ecosystem accounting in support |                                                  |
| iterer ences   |                                                                                                                           | ble societies – the case for a parsimonious and  |
|                |                                                                                                                           | cosystem condition. CIRED Working Paper;         |
|                | Quemmerais-Amice, F., Barr                                                                                                | ere, J., La Rivière, M., Contin, G., Bailly, D., |
|                |                                                                                                                           | ool for Mapping the Risk of Cumulative Effects   |
|                | on Benthic Habitats. Frontie                                                                                              |                                                  |
|                |                                                                                                                           | ars.2020.569205 (research used in account);      |
|                | c4e1737895697701.pdf                                                                                                      | ge/app/uploads/public/60a/e4f/c4e/60ae4f         |

# 6.5.2. Ecosystem condition account

| Country                 |                        | France                                       |
|-------------------------|------------------------|----------------------------------------------|
| Account type            |                        | Ecosystem condition account                  |
| Account code            |                        | FR_EC_N_1                                    |
| Funding partners        |                        | MAIA project                                 |
| Other involved partners |                        | AgroParisTech, CIRED, collaboration from     |
|                         |                        | the French Biodiversity Office (OFB), the    |
|                         |                        | French ministry for an ecological transition |
|                         |                        | (MTE)                                        |
| Status                  | Planned/ ongoing/ done | Ongoing                                      |

|                                                 | (Estimated) completion                                                                                                                                                                                                              |                                                                                                                                     |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|                                                 | (Estimated) completion<br>date                                                                                                                                                                                                      |                                                                                                                                     |
| Ecosystems                                      | Ecosystem types                                                                                                                                                                                                                     | Marine ecosystems                                                                                                                   |
| Temporal                                        | Temporal coverage                                                                                                                                                                                                                   | 2000-2018                                                                                                                           |
| specifics                                       | Frequency of updates                                                                                                                                                                                                                | Depends on indicator, frequency of update<br>to be determined                                                                       |
| Spatial<br>specifics                            | Spatial scale [local,<br>regional, national]                                                                                                                                                                                        | National                                                                                                                            |
| - <b>F</b>                                      | If sub-national, please<br>specify area                                                                                                                                                                                             | Not applicable                                                                                                                      |
|                                                 | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]                                                                           | Spatially explicit                                                                                                                  |
|                                                 | If aggregated, please<br>specify administrative or<br>ecological scale                                                                                                                                                              | Tables aggregated by marine sub-regions and at national level                                                                       |
|                                                 | Spatial resolution                                                                                                                                                                                                                  | One-minute arc grid                                                                                                                 |
|                                                 | •                                                                                                                                                                                                                                   |                                                                                                                                     |
| Methodology                                     |                                                                                                                                                                                                                                     |                                                                                                                                     |
| General<br>description<br>Specific<br>software/ | Combination of three categories of indicators reflecting the distinct<br>values underlying ecosystem management, including heritage,<br>functionality, and capacity<br>QGIS, PostgreSQL, R, Excel                                   |                                                                                                                                     |
| model/ tool<br>used                             |                                                                                                                                                                                                                                     |                                                                                                                                     |
| Following                                       | Yes/ partly/no                                                                                                                                                                                                                      | Yes                                                                                                                                 |
| SEEA-EA<br>guidelines                           | If partly, please specify                                                                                                                                                                                                           | Not applicable                                                                                                                      |
| Indicators used                                 | Yes/ no                                                                                                                                                                                                                             | Yes                                                                                                                                 |
|                                                 | If yes, please specify                                                                                                                                                                                                              | Biophyscial indicators with regard to<br>heritage (benthic and pealgic), functionality<br>(benthic and pealgic), capacity (pelagic) |
| Aggregation                                     | Yes/no                                                                                                                                                                                                                              |                                                                                                                                     |
|                                                 | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                    |                                                                                                                                     |
| Validation                                      | Yes/ no                                                                                                                                                                                                                             | No                                                                                                                                  |
| process and/<br>or uncertainty<br>assessment    | If yes, please specify                                                                                                                                                                                                              | Not applicable                                                                                                                      |
|                                                 |                                                                                                                                                                                                                                     |                                                                                                                                     |
| Data source(s)                                  | <ul> <li>French biodiversity office (OFB)</li> <li>Ifremer</li> <li>French reporting of the Marine Strategy Framewory Directive</li> <li>French Marine Information System (SIMM)</li> <li>Quemmerais-Amice et al. (2020)</li> </ul> |                                                                                                                                     |

|                      | National History Mu                            | iseum (MNHN, INPN)                    |
|----------------------|------------------------------------------------|---------------------------------------|
|                      |                                                |                                       |
| Output(s)            |                                                |                                       |
| Report(s)            | Yes/ no                                        | Yes                                   |
| 1 ()                 | Open access [yes/ no]                          | Yes                                   |
|                      | Status [planned/ in                            | In preparation                        |
|                      | preparation/ published]                        | 1 1                                   |
|                      | Note(s)                                        |                                       |
|                      | If possible, specify link/                     |                                       |
|                      | source                                         |                                       |
| Accounting           | Yes/ no                                        | No                                    |
| spreadsheet(s)       | Open access [yes/ no]                          | Not applicable                        |
|                      | Status [planned/ in<br>preparation/ published] | Not applicable                        |
|                      | Note(s)                                        | Not applicable                        |
|                      | If possible, specify link/<br>source           | Not applicable                        |
| Map(s)               | Yes/no                                         | No                                    |
| (formatted)          | Open access [yes/ no]                          | Not applicable                        |
|                      | Status [planned/ in                            | Not applicable                        |
|                      | preparation/ published]                        | Not applicable                        |
|                      | Note(s)                                        | Not applicable                        |
|                      | If possible, specify link/<br>source           | Not applicable                        |
| Geodata              | Yes/ no                                        | Yes                                   |
|                      | Open access [yes/ no]                          | No (MAIA viewer)                      |
|                      | Status [planned/ in                            | Published (MAIA viewer)               |
|                      | preparation/ published]                        |                                       |
|                      | Note(s)                                        |                                       |
|                      | If possible, specify link/                     |                                       |
| Scientific           | source<br>Yes/ no                              | Yes                                   |
| publication(s)       | Open access [yes/ no]                          | 165                                   |
| publication(b)       | Status [planned/ in                            | In preparation                        |
|                      | preparation/ published]                        |                                       |
|                      | Note(s)                                        |                                       |
|                      | If possible, specify link/                     |                                       |
|                      | source                                         |                                       |
| Other output(s)      | Yes/ no                                        | Yes                                   |
|                      | Open access [yes/ no]                          | Yes                                   |
|                      | Status [planned/ in preparation/ published]    | In preparation                        |
|                      | Note(s)                                        | Executive summary (4 pages in French) |
|                      | If possible, specify link/                     |                                       |
|                      | source                                         |                                       |
|                      |                                                | V                                     |
| MAIA<br>contribution | Support through funding [yes/ no]              | Yes                                   |

|            | Personalized support from                                                | Yes                                           |
|------------|--------------------------------------------------------------------------|-----------------------------------------------|
|            | MAIA community [yes/ no]                                                 |                                               |
|            | Support through more                                                     | Yes                                           |
|            | than one MAIA activity                                                   |                                               |
|            | (such as webinars and                                                    |                                               |
|            | workshops) [yes/ no]                                                     |                                               |
|            | Support through one MAIA                                                 | No                                            |
|            | activity (such as webinars                                               |                                               |
|            | and workshops) [yes/ no]                                                 |                                               |
| Notes      | 5 I                                                                      | French metropolitan Exclusive Economic        |
|            | Zone as a whole and divided                                              | by sub-regions                                |
| References |                                                                          | el, H., 2020. Ecosystem accounting in support |
|            | of the transition to sustainable societies – the case for a parsimonious |                                               |
|            | and inclusive measurement of ecosystem condition. CIRED Working          |                                               |
|            | Paper;                                                                   |                                               |
|            |                                                                          | ge/app/uploads/public/60a/e4f/c4e/60ae4       |
|            | fc4e1737895697701.pdf                                                    |                                               |

# 6.5.3. Ecosystem asset account

| Country                 |                                                                                                                                                           | France                                                                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type            |                                                                                                                                                           | Ecosystem asset account                                                                                                                        |
| Account code            |                                                                                                                                                           | FR_EA_N_1                                                                                                                                      |
| Funding partners        |                                                                                                                                                           | MAIA project                                                                                                                                   |
| Other involved partners |                                                                                                                                                           | AgroParisTech, CIRED, collaboration from<br>the French Biodiversity Office (OFB), the<br>French ministry for an ecological transition<br>(MTE) |
|                         | Planned/ ongoing/ done                                                                                                                                    | Ongoing                                                                                                                                        |
| Status                  | (Estimated) completion date                                                                                                                               |                                                                                                                                                |
| Ecosystems              | Ecosystem types                                                                                                                                           | Marine ecosystems                                                                                                                              |
| Temporal                | Temporal coverage                                                                                                                                         |                                                                                                                                                |
| specifics               | Frequency of updates                                                                                                                                      |                                                                                                                                                |
| Spatial<br>specifics    | Spatial scale [local, regional, national]                                                                                                                 | National                                                                                                                                       |
| •                       | If sub-national, please specify area                                                                                                                      | Not applicable                                                                                                                                 |
|                         | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit] | Not spatially explicit, aggregated by marine<br>sub-regions and aggregated at the national<br>level                                            |
|                         | If aggregated, please<br>specify administrative or<br>ecological scale                                                                                    | Aggregated by marine sub-regions and aggregated at the national level                                                                          |
|                         | Spatial resolution                                                                                                                                        | Not applicable                                                                                                                                 |

| Methodology              |                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General                  | Unpaid ecological costs (approach) based on dose-response modelling                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                 |
| description              | and on avoiding and restoration costs                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                 |
| Specific                 | R, Excel                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                 |
| software/                |                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |
| model/ tool              |                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |
| used                     |                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |
| Following                | Yes/ partly/no                                                                                                                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                             |
| SEEA-EA                  | If partly, please specify                                                                                                                                                                                                                                                      | Not applicable                                                                                                                                                                                                                                                                                                                                  |
| guidelines               |                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |
| Indicators used          | Yes/ no                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                 |
|                          | If yes, please specify                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                 |
| Aggregation              | Yes/ no                                                                                                                                                                                                                                                                        | Yes                                                                                                                                                                                                                                                                                                                                             |
|                          | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                               | Marine sub-regions and national level                                                                                                                                                                                                                                                                                                           |
| Validation               | Yes/ no                                                                                                                                                                                                                                                                        | No                                                                                                                                                                                                                                                                                                                                              |
| process and/             | If yes, please specify                                                                                                                                                                                                                                                         | Not applicable                                                                                                                                                                                                                                                                                                                                  |
| or uncertainty           |                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |
| assessment               |                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                 |
| Output(s)                |                                                                                                                                                                                                                                                                                | The Marine Strategy Framework Directive                                                                                                                                                                                                                                                                                                         |
| Report(s)                | Yes/ no                                                                                                                                                                                                                                                                        | No                                                                                                                                                                                                                                                                                                                                              |
|                          | Open access [yes/ no]                                                                                                                                                                                                                                                          | Not applicable                                                                                                                                                                                                                                                                                                                                  |
|                          | Status [planned/ in                                                                                                                                                                                                                                                            | Not applicable                                                                                                                                                                                                                                                                                                                                  |
|                          | preparation/ published]                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                 |
|                          | Note(s)                                                                                                                                                                                                                                                                        | Not applicable                                                                                                                                                                                                                                                                                                                                  |
|                          | If manaihla, an a sife limb /                                                                                                                                                                                                                                                  | Not applicable                                                                                                                                                                                                                                                                                                                                  |
|                          | If possible, specify link/                                                                                                                                                                                                                                                     | Not applicable                                                                                                                                                                                                                                                                                                                                  |
| Accounting               | source                                                                                                                                                                                                                                                                         | Not applicable                                                                                                                                                                                                                                                                                                                                  |
|                          | source<br>Yes/ no                                                                                                                                                                                                                                                              | Not applicable       No                                                                                                                                                                                                                                                                                                                         |
| spreadsheet(s)           | source<br>Yes/ no<br>Open access [yes/ no]                                                                                                                                                                                                                                     | Not applicable       No       Not applicable                                                                                                                                                                                                                                                                                                    |
|                          | source<br>Yes/no<br>Open access [yes/no]<br>Status [planned/in                                                                                                                                                                                                                 | Not applicable       No                                                                                                                                                                                                                                                                                                                         |
|                          | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]                                                                                                                                                                                   | Not applicable       No       Not applicable       Not applicable       Not applicable                                                                                                                                                                                                                                                          |
|                          | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)                                                                                                                                                                        | Not applicable         No         Not applicable         Not applicable         Not applicable         Not applicable                                                                                                                                                                                                                           |
|                          | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/                                                                                                                                          | Not applicable       No       Not applicable       Not applicable       Not applicable                                                                                                                                                                                                                                                          |
| spreadsheet(s)           | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source                                                                                                                                | Not applicable         No         Not applicable         Not applicable         Not applicable         Not applicable         Not applicable         Not applicable                                                                                                                                                                             |
| spreadsheet(s)<br>Map(s) | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no                                                                                                                     | Not applicable         No         Not applicable                                                                                 |
| spreadsheet(s)           | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]                                                                                            | Not applicable         No         Not applicable         No         Not applicable                                                                                             |
| spreadsheet(s)<br>Map(s) | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in                                                                     | Not applicable         No         Not applicable                                                                                 |
| spreadsheet(s)<br>Map(s) | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]                                          | Not applicable         No         Not applicable            |
| spreadsheet(s)<br>Map(s) | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)                               | Not applicable         No         Not applicable         Not applicable         Not applicable         Not applicable         Not applicable         No         Not applicable         Not applicable |
| spreadsheet(s)<br>Map(s) | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/ | Not applicable         No         Not applicable            |
| spreadsheet(s)<br>Map(s) | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)                               | Not applicable         No         Not applicable         Not applicable         Not applicable         Not applicable         Not applicable         No         Not applicable         Not applicable |

|                 | Open access lugs/nol                                                                                                                        | Not applicable                                   |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
|                 | Open access [yes/ no]<br>Status [planned/ in                                                                                                | Not applicable                                   |
|                 | preparation/ published]                                                                                                                     | Not applicable                                   |
|                 | Note(s)                                                                                                                                     | Not applicable                                   |
|                 | If possible, specify link/                                                                                                                  | Not applicable                                   |
|                 | source                                                                                                                                      | 1 1                                              |
| Scientific      | Yes/ no                                                                                                                                     | Yes                                              |
| publication(s)  | Open access [yes/ no]                                                                                                                       |                                                  |
|                 | Status [planned/ in preparation/ published]                                                                                                 | In preparation                                   |
|                 | Note(s)                                                                                                                                     | One publication will be submitted to the         |
|                 |                                                                                                                                             | One Ecosystem Topical Collection                 |
|                 |                                                                                                                                             | "Monetary Valuation for Ecosystem<br>Accounting" |
|                 | If possible, specify link/                                                                                                                  |                                                  |
|                 | source                                                                                                                                      |                                                  |
| Other output(s) | Yes/ no                                                                                                                                     | No                                               |
|                 | Open access [yes/ no]                                                                                                                       | Not applicable                                   |
|                 | Status [planned/ in                                                                                                                         | Not applicable                                   |
|                 | preparation/ published]                                                                                                                     |                                                  |
|                 | Note(s)                                                                                                                                     | Not applicable                                   |
|                 | If possible, specify link/<br>source                                                                                                        | Not applicable                                   |
|                 | source                                                                                                                                      |                                                  |
| MAIA            | Support through funding                                                                                                                     | Yes                                              |
| contribution    | [yes/no]                                                                                                                                    |                                                  |
|                 | Personalized support from                                                                                                                   | Yes                                              |
|                 | MAIA community [yes/ no]                                                                                                                    |                                                  |
|                 | Support through more                                                                                                                        | Yes                                              |
|                 | than one MAIA activity                                                                                                                      |                                                  |
|                 | (such as webinars and workshops) <i>[yes/ no]</i>                                                                                           |                                                  |
|                 | Support through one MAIA                                                                                                                    | No                                               |
|                 | activity (such as webinars                                                                                                                  |                                                  |
|                 | and workshops) [yes/ no]                                                                                                                    |                                                  |
| Notes           |                                                                                                                                             | French metropolitan Exclusive Economic           |
| D.C.            | Zone as a whole and divided by sub-regions                                                                                                  |                                                  |
| References      | Comte, A., Kervinio, Y., Levrel, H., 2020. Ecosystem accounting in support                                                                  |                                                  |
|                 | of the transition to sustainable societies – the case for a parsimonious<br>and inclusive measurement of ecosystem condition. CIRED Working |                                                  |
|                 | Paper                                                                                                                                       | or cosystem condition. GIRED Working             |
|                 |                                                                                                                                             |                                                  |

## 6.6. Annex: Germany

### 6.6.1. Ecosystem extent account

| Country      | Germany                  |
|--------------|--------------------------|
| Account type | Ecosystem extent account |
| Account code | DE_EE_N_1                |

| Funding partne          | rs                                                      | German Federal Agency for Nature                                                                                                |
|-------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Other involved partners |                                                         | Conservation (BfN)<br>Institute for Ecological Urban and Regional                                                               |
|                         | Planned/ ongoing/ done                                  | Development Dresden (IOER), MAIA project<br>Done: For 2012, 2015, 2018 with first<br>version of land cover data from the German |
| Status                  |                                                         | Federal Agency of Cartography and<br>Geodesy, no MAIA support was provided                                                      |
| Status                  |                                                         | Ongoing: For 2012, 2015, 2018 with revised<br>(2nd version) land cover data ongoing with<br>MAIA support                        |
|                         | (Estimated) completion date                             |                                                                                                                                 |
|                         | (Sub-)national/<br>international                        | International                                                                                                                   |
| Ecosystem               | If possible, please specify                             | CLC                                                                                                                             |
| type                    | If (sub-)national,                                      | Not applicable                                                                                                                  |
| classification          | compatible with                                         |                                                                                                                                 |
|                         | international                                           |                                                                                                                                 |
|                         | classification (if yes,                                 |                                                                                                                                 |
| Ecosystems              | please specify which)<br>Ecosystem types                | All ecosystems                                                                                                                  |
| Temporal                | Temporal coverage                                       | 2012, 2015, 2018                                                                                                                |
| specifics               | Frequency of updates                                    | 1 update with revised data in 2022                                                                                              |
| Spatial                 | Spatial scale <i>[local,</i>                            | National                                                                                                                        |
| specifics               | regional, national]                                     |                                                                                                                                 |
| •                       | If sub-national, please                                 | Not applicable                                                                                                                  |
|                         | specify area                                            |                                                                                                                                 |
|                         | Spatial coverage [not                                   | Fully spatially explicit                                                                                                        |
|                         | spatially explicit,                                     |                                                                                                                                 |
|                         | aggregated at                                           |                                                                                                                                 |
|                         | administrative scale,                                   |                                                                                                                                 |
|                         | aggregated at ecological scale, fully spatially         |                                                                                                                                 |
|                         | explicit]                                               |                                                                                                                                 |
|                         | If aggregated, please                                   | Not applicable                                                                                                                  |
|                         | specify administrative or<br>ecological scale           |                                                                                                                                 |
|                         | Spatial resolution                                      | 1 hectare (CORINE land cover data, CLC)                                                                                         |
|                         |                                                         | and higher resolution linear elements,                                                                                          |
|                         |                                                         | hedges, rivers, roads, paths                                                                                                    |
| Methodology             |                                                         |                                                                                                                                 |
| General                 |                                                         |                                                                                                                                 |
| description             | Assessing the change of a can on ecosystem types.       |                                                                                                                                 |
| Specific                | GIS-software ArcGISpro, development environment PyCharm |                                                                                                                                 |
| software/               |                                                         |                                                                                                                                 |
| model/ tool             |                                                         |                                                                                                                                 |
| used                    | Vac ( nanthe /na                                        | Vec                                                                                                                             |
|                         | Yes/ partly/no                                          | Yes                                                                                                                             |

| Following<br>SEEA EA    | If partly, please specify                                                                                 | Not applicable                                                                                                                                                                                                                                               |
|-------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| guidelines              | Vasino                                                                                                    | Yes                                                                                                                                                                                                                                                          |
| Validation process and/ | Yes/no                                                                                                    |                                                                                                                                                                                                                                                              |
| or uncertainty          | If yes, please specify                                                                                    | Exchange with data delivering institution:<br>Bundesamt für Kartographie und Geodäsie                                                                                                                                                                        |
| assessment              |                                                                                                           | (Federal Agency for Cartography and                                                                                                                                                                                                                          |
|                         |                                                                                                           | Geodesy)                                                                                                                                                                                                                                                     |
|                         |                                                                                                           |                                                                                                                                                                                                                                                              |
| Data source(s)          | Dokumentation. Dig<br>Deutschland. LBM-I<br>Main: 61 p. Version<br>BKG/Bundesamt fü<br>Basis-Landschaftsm | r Kartographie und Geodäsie (2019):<br>gitales Landbedeckungsmodell für<br>DE2018. Stand: 15.2.2019. BKG. Frankfurt am<br>1<br>r Kartographie und Geodäsie (2016): Digitales<br>nodell (AAA-Modellierung). Stand der<br>4.2016. BKG. Frankfurt am Main: 6 S. |
|                         |                                                                                                           |                                                                                                                                                                                                                                                              |
| Output(s)               | ×  (                                                                                                      |                                                                                                                                                                                                                                                              |
| Report(s)               | Yes/no                                                                                                    | Yes                                                                                                                                                                                                                                                          |
|                         | Open access [yes/ no]                                                                                     | Yes                                                                                                                                                                                                                                                          |
|                         | Status [planned/ in                                                                                       | First draft available at German Federal                                                                                                                                                                                                                      |
|                         | preparation/ published]                                                                                   | Agency for Nature Conservation, final draft in preparation                                                                                                                                                                                                   |
|                         | Note(s)                                                                                                   |                                                                                                                                                                                                                                                              |
|                         | If possible, specify link/                                                                                | Grunewald, K., Meier, S., Syrbe, RU., Walz,                                                                                                                                                                                                                  |
|                         | source                                                                                                    | U. (2021): Ökosysteme Deutschlands.                                                                                                                                                                                                                          |
|                         |                                                                                                           | Klassifizierung und Kartierung der                                                                                                                                                                                                                           |
|                         |                                                                                                           | Ökosystemtypen sowie Indikatoren für ein                                                                                                                                                                                                                     |
|                         |                                                                                                           | bundesweites Assessment und Monitoring                                                                                                                                                                                                                       |
|                         |                                                                                                           | des Ökosystemzustands und der                                                                                                                                                                                                                                |
|                         |                                                                                                           | Ökosystemleistungen. Leibniz-Institut für                                                                                                                                                                                                                    |
|                         |                                                                                                           | ökologische Raumentwicklung e.V. (IOER),                                                                                                                                                                                                                     |
|                         |                                                                                                           | Dresden. <u>http://doi.org/10.26084/45xx-</u><br><u>rs50</u>                                                                                                                                                                                                 |
|                         |                                                                                                           | Research Report "Accounting II" for the                                                                                                                                                                                                                      |
|                         |                                                                                                           | German Federal Agency for Nature                                                                                                                                                                                                                             |
|                         |                                                                                                           | Conservation, publication planned                                                                                                                                                                                                                            |
| Accounting              | Yes/ no                                                                                                   | Yes                                                                                                                                                                                                                                                          |
| spreadsheet(s)          | Open access [yes/ no]                                                                                     |                                                                                                                                                                                                                                                              |
|                         | Status [planned/ in                                                                                       | November 2022                                                                                                                                                                                                                                                |
|                         | preparation/ published]                                                                                   |                                                                                                                                                                                                                                                              |
|                         | Note(s)                                                                                                   |                                                                                                                                                                                                                                                              |
|                         | If possible, specify link/                                                                                | German Federal Agency for Nature                                                                                                                                                                                                                             |
|                         | source                                                                                                    | Conservation: "Research Report Accounting II"                                                                                                                                                                                                                |
| Map(s)                  | Yes/ no                                                                                                   | Yes                                                                                                                                                                                                                                                          |
| (formatted)             | Open access [yes/ no]                                                                                     | Yes                                                                                                                                                                                                                                                          |
| (lor mation)            | Status [planned/ in                                                                                       | Published                                                                                                                                                                                                                                                    |
|                         | preparation/ published]                                                                                   | i ubiblicu                                                                                                                                                                                                                                                   |

|                | Note(s)                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | If possible, specify link/<br>source           | Will partly be published in the open access<br>German MAES-Report which will be<br>published at the end of 2022.<br>Some material is already published in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                |                                                | scientific publications (see below)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Geodata        | Yes/ no                                        | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                | Open access [yes/ no]                          | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                | Status [planned/ in<br>preparation/ published] |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | Note(s)                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | If possible, specify link/<br>source           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Scientific     | Yes/ no                                        | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| publication(s) | Open access [yes/ no]                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                | Status [planned/ in preparation/ published]    | Additional publication in German MAES<br>report in preparation (planned for end of<br>2022)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                | Note(s)                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | If possible, specify link/<br>source           | Grunewald, Karsten; Hartje, Volkmar; Meier,<br>Sophie; Sauer, Axel; Schweppe-Kraft,<br>Burkhard; Syrbe, Ralf-Uwe; Zieschank,<br>Roland; Ekinci, Beyhan; Hirschfeld, Jesko<br>National accounting of ecosystem extents<br>and services in Germany: a pilot project<br>In: La Notte, Alessandra;<br>Grammatikopoulou, Ioanna; Grunewald,<br>Karsten; Barton, David N.; Ekinci, Beyhan<br>(Eds.): Ecosystem and ecosystem services<br>accounts: time for applications.<br>Luxembourg: Publications Office of the<br>European Union, 2021, S.34-48<br>http://dx.doi.org/10.2760/01033<br>Grunewald, Karsten; Schweppe-Kraft,<br>Burkhard; Syrbe, Ralf-Uwe; Meier, Sophie;<br>Krüger, Tobias; Schorcht, Martin; Walz,<br>Ulrich<br>Hierarchical classification system of<br>Germany's ecosystems as basis for an<br>ecosystem accounting – methods and first<br>results<br>In: One Ecosystem 5 (2020) e50648, S.1-41<br>https://doi.org/10.3897/oneeco.5.e50648<br>Grunewald, K., Meier, S., Syrbe, RU., Walz,<br>U. (2021): Ökosysteme Deutschlands.<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein |

|                      |                                                                                                 | des Ökosystemzustands und der<br>Ökosystemleistungen. Leibniz-Institut für<br>ökologische Raumentwicklung e.V. (IOER),<br>Dresden. http://doi.org/10.26084/45xx-<br>rs50 |
|----------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other output(s)      | Yes/ no                                                                                         |                                                                                                                                                                          |
|                      | Open access [yes/ no]                                                                           |                                                                                                                                                                          |
|                      | Status [planned/ in preparation/ published]                                                     |                                                                                                                                                                          |
|                      | Note(s)                                                                                         |                                                                                                                                                                          |
|                      | If possible, specify link/<br>source                                                            |                                                                                                                                                                          |
|                      | ·                                                                                               |                                                                                                                                                                          |
| MAIA<br>contribution | Support through funding [yes/no]                                                                | No <sup>i</sup>                                                                                                                                                          |
|                      | Personalized support<br>from MAIA community<br>[yes/ no]                                        | No                                                                                                                                                                       |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no] | Yes (Workshops, joint publication efforts)                                                                                                                               |
|                      | Support through one<br>MAIA activity (such as<br>webinars and workshops)<br>[yes/no]            | No                                                                                                                                                                       |
| Notes                |                                                                                                 |                                                                                                                                                                          |
| References           |                                                                                                 |                                                                                                                                                                          |

### 6.6.2. Ecosystem condition account

| Country          |                              | Germany                               |
|------------------|------------------------------|---------------------------------------|
| Account type     |                              | Ecosystem condition account           |
| Account code     |                              | DE_EC_N_1                             |
| Funding partners |                              | Federal Statistical Office of Germany |
| Other involved   | partners                     | Federal Agency for Cartography and    |
|                  |                              | Geodesy; MAIA project                 |
|                  | Planned/ ongoing/ done       | Ongoing                               |
| Status           | (Estimated) completion       | Spring 2023                           |
|                  | date                         |                                       |
| Ecosystems       | Ecosystem types              | All ecosystems                        |
| Temporal         | Temporal coverage            | Start 2015                            |
| specifics        | Frequency of updates         | Pluri-annual (every 3 years)          |
| Spatial          | Spatial scale <i>[local,</i> | National + Exclusive economic zone    |
| specifics        | regional, national]          |                                       |
|                  | If sub-national, please      | Not applicable                        |
|                  | specify area                 |                                       |

|                                              | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially                                    | Fully spatially explicit, whenever possible.<br>Publication of results aggregated on<br>administrative scale                                                                                                                                                                                       |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                              | <i>explicit]</i><br>If aggregated, please<br>specify administrative or<br>ecological scale                                                                                      | Level of local authorities association<br>("Gemeindeverbandsebene") or higher<br>(federal states)                                                                                                                                                                                                  |
|                                              | Spatial resolution                                                                                                                                                              | TBD                                                                                                                                                                                                                                                                                                |
|                                              |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                    |
| Methodology                                  |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                    |
| General description                          | TBD                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                    |
| Specific<br>software/<br>model/tool<br>used  | ArcGIS, Python, (further sof                                                                                                                                                    | tware TBD)                                                                                                                                                                                                                                                                                         |
| Following                                    | Yes/ partly/no                                                                                                                                                                  | Yes                                                                                                                                                                                                                                                                                                |
| SEEA-EA<br>guidelines                        | If partly, please specify                                                                                                                                                       | Not applicable                                                                                                                                                                                                                                                                                     |
| Indicators used                              | Yes/ no                                                                                                                                                                         | Yes                                                                                                                                                                                                                                                                                                |
|                                              | If yes, please specify                                                                                                                                                          | A variety of indicators describing the<br>ecosystem condition will be used for each<br>ecosystem; selection of indicators to be<br>decided                                                                                                                                                         |
| Aggregation                                  | Yes/ no                                                                                                                                                                         | Yes, when necessary                                                                                                                                                                                                                                                                                |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                | The aim is to represent information on the<br>most disaggregated level that is meaningful<br>for the public. Therefore, information will<br>be aggregated where necessary, but we will<br>avoid to construct weighted composite<br>indicators that include different ecosystem<br>characteristics. |
| Validation                                   | Yes/ no                                                                                                                                                                         | TBD                                                                                                                                                                                                                                                                                                |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                          | TBD                                                                                                                                                                                                                                                                                                |
|                                              |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                    |
| Data source(s)                               | <ul> <li>NDVI by remote sensing</li> <li>Copernicus satellite programme</li> <li>National data</li> <li>Data according to reporting duties towards the EU (like WFD)</li> </ul> |                                                                                                                                                                                                                                                                                                    |
|                                              |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                    |
| Output(s)                                    | · · · · ·                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                    |
| Report(s)                                    | Yes/no                                                                                                                                                                          | Yes                                                                                                                                                                                                                                                                                                |
|                                              | Open access [yes/ no]                                                                                                                                                           | Yes                                                                                                                                                                                                                                                                                                |
|                                              | Status [planned/ in<br>preparation/ published]                                                                                                                                  | Planned                                                                                                                                                                                                                                                                                            |
|                                              | Note(s)                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                    |

|                              | If a social society in the limit of                | TDD                                         |
|------------------------------|----------------------------------------------------|---------------------------------------------|
|                              | If possible, specify link/                         | TBD                                         |
| Accounting                   | source                                             | Yes                                         |
| Accounting<br>spreadsheet(s) | Yes/ no                                            |                                             |
| spreausneet(s)               | Open access [yes/ no]                              | Yes                                         |
|                              | Status [planned/ in                                | Planned                                     |
|                              | preparation/published]                             |                                             |
|                              | Note(s)                                            |                                             |
|                              | If possible, specify link/                         | TBD                                         |
|                              | source                                             | V                                           |
| Map(s)                       | Yes/no                                             | Yes                                         |
| (formatted)                  | Open access [yes/ no]                              | Yes                                         |
|                              | Status [planned/ in                                | Planned                                     |
|                              | preparation/published]                             |                                             |
|                              | Note(s)                                            | The maps that will be published will show   |
|                              |                                                    | information for small area grids as well as |
|                              | If possible specify light (                        | by administrative units TBD                 |
|                              | If possible, specify link/<br>source               |                                             |
| Geodata                      | Yes/ no                                            | TBD                                         |
|                              | Open access [yes/ no]                              | TBD                                         |
|                              | Status [planned/ in                                | planned                                     |
|                              | preparation/ published]                            |                                             |
|                              | Note(s)                                            |                                             |
|                              | If possible, specify link/                         |                                             |
|                              | source                                             |                                             |
| Scientific                   | Yes/ no                                            | No                                          |
| publication(s)               | Open access [yes/ no]                              |                                             |
|                              | Status [planned/ in                                |                                             |
|                              | preparation/ published]                            |                                             |
|                              | Note(s)                                            |                                             |
|                              | If possible, specify link/                         |                                             |
|                              | source                                             |                                             |
| Other output(s)              | Yes/ no                                            | No                                          |
|                              | Open access [yes/ no]                              |                                             |
|                              | Status [planned/ in                                |                                             |
|                              | preparation/ published]                            |                                             |
|                              | Note(s)                                            |                                             |
|                              | If possible, specify link/                         |                                             |
|                              | source                                             |                                             |
|                              |                                                    | N.                                          |
| MAIA                         | Support through funding                            | No                                          |
| contribution                 | [yes/ no]                                          | V                                           |
|                              | Personalized support from MAIA community [yes/ no] | Yes                                         |
|                              | Support through more                               | Yes                                         |
|                              | than one MAIA activity                             |                                             |
|                              | (such as webinars and                              |                                             |
|                              | workshops) <i>[yes/ no]</i>                        |                                             |

|            | Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no] | No |
|------------|------------------------------------------------------------------------------------|----|
| Notes      |                                                                                    |    |
| References |                                                                                    |    |

| Country              |                                              | Germany                                                                         |
|----------------------|----------------------------------------------|---------------------------------------------------------------------------------|
| Account type         |                                              | Ecosystem condition account                                                     |
| Account code         |                                              | DE_EC_N_2                                                                       |
| Funding partners     |                                              | German Federal Agency for Nature                                                |
|                      |                                              | Conservation (BfN)                                                              |
| Other involved       | partners                                     | Institute for Ecological Urban and Regional                                     |
|                      |                                              | Development Dresden (IOER), MAIA project                                        |
|                      | Planned/ ongoing/ done                       | Done                                                                            |
| Status               | (Estimated) completion date                  |                                                                                 |
| Ecosystems           | Ecosystem types                              | All ecosystems                                                                  |
| Temporal             | Temporal coverage                            | 2012, 2015 and/or 2018                                                          |
| specifics            | Frequency of updates                         |                                                                                 |
| Spatial<br>specifics | Spatial scale [local,<br>regional, national] | National                                                                        |
| specifics            | If sub-national, please                      | Not applicable                                                                  |
|                      | specify area                                 | 11                                                                              |
|                      | Spatial coverage [not                        | Fully spatially explicit                                                        |
|                      | spatially explicit,                          |                                                                                 |
|                      | aggregated at                                |                                                                                 |
|                      | administrative scale,                        |                                                                                 |
|                      | aggregated at ecological                     |                                                                                 |
|                      | scale, fully spatially                       |                                                                                 |
|                      | explicit]                                    |                                                                                 |
|                      | If aggregated, please                        |                                                                                 |
|                      | specify administrative or ecological scale   |                                                                                 |
|                      | Spatial resolution                           |                                                                                 |
|                      |                                              |                                                                                 |
| Methodology          |                                              |                                                                                 |
| General              | Capture the change of condi                  | tion with regard to the contribution of                                         |
| description          | 1 0                                          | ervation of biodiversity in Germany.                                            |
| Specific             | ArcGISpro, PyCharm                           |                                                                                 |
| software/            |                                              |                                                                                 |
| model/ tool          |                                              |                                                                                 |
| used                 |                                              |                                                                                 |
| Following            | Yes/ partly/no                               | Partly                                                                          |
| SEEA EA              | If partly, please specify                    |                                                                                 |
| guidelines           |                                              |                                                                                 |
| Indicators used      | Yes/no                                       | Yes                                                                             |
|                      | If yes, please specify                       | Indicator: "Landscape fragmentation"<br>(already published in the IOER monitor) |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Indicator: carbon stock in soil and<br>vegetation.<br>Data for 2018, calculation model for update<br>every three years based on LBM-DE,<br>BÜK200, NIR.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Indicator: Biodiversity area indicator<br>(biotope value points).<br>Data for 2018, calculation model for update<br>every three years based on LBM-DE.<br>- from reporting on the habitat directives<br>("structure and functions")<br>- from WFD reporting ("ecological status")<br>- from national monitoring of High Nature<br>Value ecosystems in agricultural landscapes<br>(3 ratings)<br>- naturalness of tree species (for forests not<br>captured by the habitat directives)<br>- age of tree species (for forests not<br>captured by the habitat directives)<br>Indicator: Protected areas (Nature- |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | emphasized areas and nature reserves in<br>Germany, already published in the IOER<br>monitor)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Indicator: Critical load exceedance –<br>nitrogen. Data for 2015, calculation model<br>for regular updates on the basis of UBA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Indicator: Proportion of woody ecotones<br>Indicator: Hemeroby index (already<br>published in the IOER monitor)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Vac/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                                                                                                                                                                                                                              | Sum resp. weighted average                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Ongoing by external experts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <ul> <li>The data sources for most of the indicators are:</li> <li>BKG/Bundesamt für Kartographie und Geodäsie (2019):<br/>Dokumentation. Digitales Landbedeckungsmodell für<br/>Deutschland. LBM-DE2018. Stand: 15.2.2019. BKG. Frankfurt am<br/>Main: 61 p. Version 1</li> <li>BKG/Bundesamt für Kartographie und Geodäsie (2016):<br/>Digitales Basis-Landschaftsmodell (AAA-Modellierung). Stand<br/>der Dokumentation: 1.4.2016. BKG. Frankfurt am Main: 6 S.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | aggregation level and<br>method)<br>Yes/ no<br>If yes, please specify<br>The data sources for most of<br>BKG/Bundesamt für<br>Dokumentation. Dig<br>Deutschland. LBM-I<br>Main: 61 p. Version<br>BKG/Bundesamt für<br>Digitales Basis-Land                                                                                                                                                                                                                                                                                                                                                                    |

| Output(s)      |                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Report(s)      | Yes/ no                                                                            | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                | Open access [yes/ no]                                                              | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                | Status [planned/ in preparation/ published]                                        | First draft available at German Federal<br>Agency for Nature Conservation, final draft<br>in preparation                                                                                                                                                                                                                                                                                   |
|                | Note(s)                                                                            | FF                                                                                                                                                                                                                                                                                                                                                                                         |
|                | If possible, specify link/<br>source                                               | Grunewald, K., Meier, S., Syrbe, RU., Walz,<br>U. (2021): Ökosysteme Deutschlands.<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Leibniz-Institut für<br>ökologische Raumentwicklung e.V. (IOER),<br>Dresden. http://doi.org/10.26084/45xx-<br>rs50 |
| Accounting     | Yes/ no                                                                            | No                                                                                                                                                                                                                                                                                                                                                                                         |
| spreadsheet(s) | Open access [yes/ no]                                                              |                                                                                                                                                                                                                                                                                                                                                                                            |
|                | Status [planned/ in preparation/ published]                                        |                                                                                                                                                                                                                                                                                                                                                                                            |
|                | Note(s)                                                                            |                                                                                                                                                                                                                                                                                                                                                                                            |
|                | If possible, specify link/<br>source                                               |                                                                                                                                                                                                                                                                                                                                                                                            |
| Map(s)         | Yes/ no                                                                            | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
| (formatted)    | Open access [yes/ no]                                                              | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                | Status [planned/ in<br>preparation/ published]                                     | Partly published (s. link), others planned<br>for 2023                                                                                                                                                                                                                                                                                                                                     |
|                | Note(s)                                                                            |                                                                                                                                                                                                                                                                                                                                                                                            |
|                | If possible, specify link/                                                         | https://www.ioer-                                                                                                                                                                                                                                                                                                                                                                          |
| Geodata        | source<br>Yes/ no                                                                  | <u>monitor.de/en/indicators/#c257</u><br>Yes                                                                                                                                                                                                                                                                                                                                               |
| Geouala        |                                                                                    | No                                                                                                                                                                                                                                                                                                                                                                                         |
|                | Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]            | Planned for 2023                                                                                                                                                                                                                                                                                                                                                                           |
|                | Note(s)                                                                            |                                                                                                                                                                                                                                                                                                                                                                                            |
|                | If possible, specify link/                                                         | https://www.ioer-<br>monitor.de/en/indicators/#c257                                                                                                                                                                                                                                                                                                                                        |
| Scientific     | source<br>Yes/ no                                                                  | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
| publication(s) | · · · · · · · · · · · · · · · · · · ·                                              | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
| publication(s) | Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s) | Published                                                                                                                                                                                                                                                                                                                                                                                  |
|                | If possible, specify link/<br>source                                               | Schweppe-Kraft, Burkhard; Syrbe, Ralf-<br>Uwe; Meier, Sophie; Grunewald,<br>Karsten                                                                                                                                                                                                                                                                                                        |

|                      |                                                    | Datangrundlagen für einen                                       |
|----------------------|----------------------------------------------------|-----------------------------------------------------------------|
|                      |                                                    | Datengrundlagen für einen<br>Biodiversitätsflächenindikator auf |
|                      |                                                    | Bundesebene                                                     |
|                      |                                                    | In: Meinel, Gotthard; Schumacher,                               |
|                      |                                                    | Ulrich; Behnisch, Martin; Krüger, Tobias                        |
|                      |                                                    | (Hrsg.) : Flächennutzungsmonitoring                             |
|                      |                                                    | XII mit Beiträgen zum Monitoring von                            |
|                      |                                                    | Ökosystemleistungen und SDGs. Berlin :                          |
|                      |                                                    | Rhombos-Verlag, 2020, (IÖR-Schriften;                           |
|                      |                                                    | 78), S.191-202                                                  |
|                      |                                                    | https://doi.org/10.26084/12dfns-                                |
|                      |                                                    | <u>p020</u>                                                     |
|                      |                                                    | Grunewald, Karsten; Hartje, Volkmar;                            |
|                      |                                                    | Meier, Sophie; Sauer, Axel; Schweppe-                           |
|                      |                                                    | Kraft, Burkhard; Syrbe, Ralf-Uwe;                               |
|                      |                                                    | Zieschank, Roland; Ekinci, Beyhan;                              |
|                      |                                                    | Hirschfeld, Jesko<br>National accounting of ecosystem           |
|                      |                                                    | extents and services in Germany: a pilot                        |
|                      |                                                    | project                                                         |
|                      |                                                    | In: La Notte, Alessandra;                                       |
|                      |                                                    | Grammatikopoulou, Ioanna; Grunewald,                            |
|                      |                                                    | Karsten; Barton, David N.; Ekinci,                              |
|                      |                                                    | Beyhan (Eds.): Ecosystem and                                    |
|                      |                                                    | ecosystem services accounts: time for                           |
|                      |                                                    | applications. Luxembourg : Publications                         |
|                      |                                                    | Office of the European Union, 2021,<br>S.34-48                  |
|                      |                                                    | http://dx.doi.org/10.2760/01033                                 |
|                      |                                                    | <u>Intep.// unitolicity/10.2700/01035</u>                       |
| Other output(s)      | Yes/ no                                            |                                                                 |
|                      | Open access [yes/ no]                              |                                                                 |
|                      | Status [planned/ in preparation / published]       |                                                                 |
|                      | preparation/ published] Note(s)                    |                                                                 |
|                      | If possible, specify link/                         |                                                                 |
|                      | source                                             |                                                                 |
|                      |                                                    |                                                                 |
| MAIA<br>contribution | Support through funding [yes/ no]                  | No <sup>i</sup>                                                 |
|                      | Personalized support from MAIA community [yes/ no] | No                                                              |
|                      | Support through more                               | Yes (Workshops, joint publication efforts)                      |
|                      | than one MAIA activity                             |                                                                 |
|                      | (such as webinars and                              |                                                                 |
|                      | workshops) <i>[yes/ no]</i>                        |                                                                 |

|            | Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no] | No |
|------------|------------------------------------------------------------------------------------|----|
| Notes      |                                                                                    |    |
| References |                                                                                    |    |

| Country                 |                                                                                                                                    | Germany                                                                                 |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Account type            |                                                                                                                                    | Ecosystem condition account – near<br>natural open land ecosystems                      |
| Account code            |                                                                                                                                    | DE_EC_N_3                                                                               |
| Funding partne          | rs                                                                                                                                 | German Federal Agency for Nature<br>Conservation (BfN)                                  |
| Other involved          | partners                                                                                                                           | Institute for Ecological Urban and Regional<br>Development Dresden (IOER), MAIA project |
|                         | Planned/ ongoing/ done                                                                                                             | Done                                                                                    |
| Status                  | (Estimated) completion<br>date                                                                                                     |                                                                                         |
| Ecosystems              | Ecosystem types                                                                                                                    | near natural open land ecosystems                                                       |
| Temporal                | Temporal coverage                                                                                                                  | 2018                                                                                    |
| specifics               | Frequency of updates                                                                                                               |                                                                                         |
| Spatial specifics       | Spatial scale [local,<br>regional, national]                                                                                       | National                                                                                |
| -                       | If sub-national, please specify area                                                                                               | Not applicable                                                                          |
|                         | Spatial coverage [not<br>spatially explicit,                                                                                       |                                                                                         |
|                         | aggregated at                                                                                                                      |                                                                                         |
|                         | administrative scale,                                                                                                              |                                                                                         |
|                         | aggregated at ecological                                                                                                           |                                                                                         |
|                         | scale, fully spatially<br>explicit]                                                                                                |                                                                                         |
|                         | If aggregated, please                                                                                                              |                                                                                         |
|                         | specify administrative or                                                                                                          |                                                                                         |
|                         | ecological scale                                                                                                                   |                                                                                         |
|                         | Spatial resolution                                                                                                                 |                                                                                         |
| Mathadalam              |                                                                                                                                    |                                                                                         |
| Methodology             | Conturo the change of card                                                                                                         | tion with regard to the contribution of                                                 |
| General                 | Capture the change of condition with regard to the contribution of ecosystem types to the preservation of biodiversity in Germany. |                                                                                         |
| description<br>Specific | cosystem types to the pres                                                                                                         |                                                                                         |
| software/               |                                                                                                                                    |                                                                                         |
| model/ tool             |                                                                                                                                    |                                                                                         |
| used                    |                                                                                                                                    |                                                                                         |
| Following               | Yes/ partly/no                                                                                                                     | Partly                                                                                  |
| SEEA EA<br>guidelines   | If partly, please specify                                                                                                          |                                                                                         |
| Indicators used         | Yes/ no                                                                                                                            | Yes                                                                                     |
|                         | If yes, please specify                                                                                                             | Near-natural open land ecosystems                                                       |
|                         |                                                                                                                                    |                                                                                         |

| Aggregation<br>Validation<br>process and/<br>or uncertainty<br>assessment | Yes/ no<br>If yes, please specify (e.g.<br>aggregation level and<br>method)<br>Yes/ no<br>If yes, please specify | Indicator: Proportion of near-natural or<br>denaturalised peatlands Concept/data in<br>progress<br>Yes<br>Weighted average                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data source(s)                                                            | Dokumentation. Digi<br>Deutschland. LBM-D<br>Main: 61 p. Version 1<br>BKG/Bundesamt für<br>Basis-Landschaftsmo   | Kartographie und Geodäsie (2019):<br>tales Landbedeckungsmodell für<br>E2018. Stand: 15.2.2019. BKG. Frankfurt am<br>L.<br>Kartographie und Geodäsie (2016): Digitales<br>odell (AAA-Modellierung). Stand der<br>2016. BKG. Frankfurt am Main: 6 S.                                                                                                                                        |
| Output(s)<br>Report(s)                                                    | Ves/no                                                                                                           | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
| Report(S)                                                                 | Yes/ no Open access [yes/ no]                                                                                    | 105                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                           | Status [planned/ in<br>preparation/ published]<br>Note(s)                                                        | planned                                                                                                                                                                                                                                                                                                                                                                                    |
|                                                                           | If possible, specify link/<br>source                                                                             | Grunewald, K., Meier, S., Syrbe, RU., Walz,<br>U. (2021): Ökosysteme Deutschlands.<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Leibniz-Institut für<br>ökologische Raumentwicklung e.V. (IOER),<br>Dresden. http://doi.org/10.26084/45xx-<br>rs50 |
| Accounting                                                                | Yes/ no                                                                                                          | No                                                                                                                                                                                                                                                                                                                                                                                         |
| spreadsheet(s)                                                            | Open access [yes/ no]                                                                                            | -                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                           | Status [planned/ in<br>preparation/ published]<br>Note(s)                                                        |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                           | If possible, specify link/                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                            |
| Map(s)                                                                    | source                                                                                                           | No                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                           | Vac/no                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                           | Yes/no                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                            |
| (formatted)                                                               | Open access [yes/ no]                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                           |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                            |

|                      | If possible, specify link/<br>source                                                            |                                            |
|----------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------|
| Geodata              | Yes/ no                                                                                         | Yes                                        |
|                      | Open access [yes/ no]                                                                           | No                                         |
|                      | Status [planned/ in<br>preparation/ published]                                                  |                                            |
|                      | Note(s)                                                                                         |                                            |
|                      | If possible, specify link/<br>source                                                            |                                            |
| Scientific           | Yes/ no                                                                                         |                                            |
| publication(s)       | Open access [yes/ no]                                                                           |                                            |
|                      | Status [planned/ in<br>preparation/ published]                                                  |                                            |
|                      | Note(s)                                                                                         |                                            |
|                      | If possible, specify link/<br>source                                                            |                                            |
| Other output(s)      | Yes/ no                                                                                         |                                            |
|                      | Open access [yes/ no]                                                                           |                                            |
|                      | Status [planned/ in<br>preparation/ published]                                                  |                                            |
|                      | Note(s)                                                                                         |                                            |
|                      | If possible, specify link/<br>source                                                            |                                            |
|                      |                                                                                                 |                                            |
| MAIA<br>contribution | Support through funding [yes/ no]                                                               | No <sup>i</sup>                            |
|                      | Personalized support from MAIA community [yes/ no]                                              | No                                         |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no] | Yes (Workshops, joint publication efforts) |
|                      | Support through one MAIA activity (such as webinars and workshops) [yes/ no]                    | No                                         |
| Notes                |                                                                                                 |                                            |
| References           |                                                                                                 |                                            |

| Country                 |                        | Germany                                     |
|-------------------------|------------------------|---------------------------------------------|
| Account type            |                        | Ecosystem condition account – forest        |
|                         |                        | ecosystem                                   |
| Account code            |                        | DE_EC_N_4                                   |
| Funding partners        |                        | German Federal Agency for Nature            |
|                         |                        | Conservation (BfN)                          |
| Other involved partners |                        | Institute for Ecological Urban and Regional |
|                         |                        | Development Dresden (IOER), MAIA            |
|                         |                        | project                                     |
| Status                  | Planned/ ongoing/ done | Done                                        |

|                               | (Estimated) completion                                                                 |                                                                |
|-------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Factoria                      | date                                                                                   | Forest accountsma                                              |
| Ecosystems                    | Ecosystem types                                                                        | Forest ecosystems                                              |
| Temporal                      | Temporal coverage                                                                      | 2000, 2006, 2012, 2016, 2020                                   |
| specifics                     | Frequency of updates                                                                   |                                                                |
| Spatial                       | Spatial scale <i>[local,</i>                                                           | National                                                       |
| specifics                     | regional, national]                                                                    | NY                                                             |
|                               | If sub-national, please                                                                | Not applicable                                                 |
|                               | specify area                                                                           | Fully spatially explicit                                       |
|                               | Spatial coverage [not spatially explicit,                                              | Fully spatially explicit                                       |
|                               | aggregated at                                                                          |                                                                |
|                               | administrative scale,                                                                  |                                                                |
|                               | aggregated at ecological                                                               |                                                                |
|                               | scale, fully spatially explicit]                                                       |                                                                |
|                               | If aggregated, please                                                                  | Administrative                                                 |
|                               | specify administrative or                                                              |                                                                |
|                               | ecological scale                                                                       |                                                                |
|                               | Spatial resolution                                                                     |                                                                |
|                               |                                                                                        |                                                                |
| Methodology                   |                                                                                        |                                                                |
| General                       | Capture the change of condit                                                           | ion with regard to the contribution of                         |
| description                   | ecosystem types to the prese                                                           | rvation of biodiversity in Germany.                            |
| Specific                      |                                                                                        |                                                                |
| software/                     |                                                                                        |                                                                |
| model/ tool                   |                                                                                        |                                                                |
| used                          |                                                                                        |                                                                |
| Following                     | Yes/ partly/no                                                                         | Partly                                                         |
| SEEA EA                       | If partly, please specify                                                              |                                                                |
| guidelines<br>Indicators used | Yes/ no                                                                                | Yes                                                            |
| mulcators useu                |                                                                                        |                                                                |
|                               | If yes, please specify                                                                 | Forest ecosystems<br>Indicator: Forests fragmentation (already |
|                               |                                                                                        | in the IOER-monitor)                                           |
|                               |                                                                                        | Indicator: Annual wood increment (already                      |
|                               |                                                                                        | published in the IOER monitor)                                 |
| Aggregation                   | Yes/ no                                                                                | Yes                                                            |
|                               | If yes, please specify (e.g.                                                           | Weighted average                                               |
|                               | aggregation level and                                                                  |                                                                |
|                               | method)                                                                                |                                                                |
| Validation                    | Yes/no                                                                                 |                                                                |
| process and/                  | If yes, please specify                                                                 |                                                                |
| or uncertainty                |                                                                                        |                                                                |
| assessment                    |                                                                                        |                                                                |
|                               |                                                                                        |                                                                |
| Data source(s)                |                                                                                        | Kartographie und Geodäsie (2019):                              |
|                               | 0                                                                                      | tales Landbedeckungsmodell für                                 |
|                               | Deutschland. LBM-DE2018. Stand: 15.2.2019. BKG. Frankfurt am<br>Main: 61 p. Version 1. |                                                                |
|                               |                                                                                        |                                                                |

|                              | Basis-Landschaftsn                              | ir Kartographie und Geodäsie (2016): Digitales<br>nodell (AAA-Modellierung). Stand der<br>4.2016. BKG. Frankfurt am Main: 6 S.                                                                                                                                                                                                                                                             |
|------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              |                                                 |                                                                                                                                                                                                                                                                                                                                                                                            |
| Output(s)                    |                                                 |                                                                                                                                                                                                                                                                                                                                                                                            |
| Report(s)                    | Yes/ no                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                              | Open access [yes/ no]                           | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                              | Status [planned/ in<br>preparation/ published]  | published                                                                                                                                                                                                                                                                                                                                                                                  |
|                              | Note(s)                                         |                                                                                                                                                                                                                                                                                                                                                                                            |
|                              | If possible, specify link/<br>source            | Grunewald, K., Meier, S., Syrbe, RU., Walz,<br>U. (2021): Ökosysteme Deutschlands.<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Leibniz-Institut für<br>ökologische Raumentwicklung e.V. (IOER),<br>Dresden. http://doi.org/10.26084/45xx-<br>rs50 |
| Accounting                   | Yes/ no                                         | No                                                                                                                                                                                                                                                                                                                                                                                         |
| spreadsheet(s)               | Open access [yes/ no]                           |                                                                                                                                                                                                                                                                                                                                                                                            |
|                              | Status [planned/ in                             |                                                                                                                                                                                                                                                                                                                                                                                            |
|                              | preparation/ published]                         |                                                                                                                                                                                                                                                                                                                                                                                            |
|                              | Note(s)                                         |                                                                                                                                                                                                                                                                                                                                                                                            |
|                              | If possible, specify link/                      |                                                                                                                                                                                                                                                                                                                                                                                            |
|                              | source                                          |                                                                                                                                                                                                                                                                                                                                                                                            |
| Map(s)                       | Yes/ no                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
| (formatted)                  | Open access [yes/ no]                           | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                              | Status [planned/ in<br>preparation/ published]  | Published                                                                                                                                                                                                                                                                                                                                                                                  |
|                              | Note(s)                                         |                                                                                                                                                                                                                                                                                                                                                                                            |
|                              | If possible, specify link/                      | https://www.ioer-                                                                                                                                                                                                                                                                                                                                                                          |
| <u> </u>                     | source                                          | monitor.de/en/indicators/#c257                                                                                                                                                                                                                                                                                                                                                             |
| Geodata                      | Yes/ no                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                              | Open access [yes/ no]                           | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                              | Status [planned/ in                             | Published                                                                                                                                                                                                                                                                                                                                                                                  |
|                              | preparation/ published]                         |                                                                                                                                                                                                                                                                                                                                                                                            |
|                              | Note(s)                                         |                                                                                                                                                                                                                                                                                                                                                                                            |
|                              | If possible, specify link/                      | https://www.ioer-                                                                                                                                                                                                                                                                                                                                                                          |
| Scientific                   | source                                          | monitor.de/en/indicators/#c257                                                                                                                                                                                                                                                                                                                                                             |
| Scientific<br>publication(s) | Yes/no                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                              | Open access [yes/ no]                           | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                              | Status [planned/ in<br>preparation/ published]  | Published                                                                                                                                                                                                                                                                                                                                                                                  |
|                              | Note(s)<br>If possible, specify link/<br>source | Grunewald, Karsten; Hartje, Volkmar;<br>Meier, Sophie; Sauer, Axel; Schweppe-<br>Kraft, Burkhard; Syrbe, Ralf-Uwe;                                                                                                                                                                                                                                                                         |

|                      |                                                                                                 | Zieschank, Roland; Ekinci, Beyhan;<br>Hirschfeld, Jesko<br>National accounting of ecosystem<br>extents and services in Germany: a pilot<br>project<br>In: La Notte, Alessandra;<br>Grammatikopoulou, Ioanna;<br>Grunewald, Karsten; Barton, David N.;<br>Ekinci, Beyhan (Eds.): Ecosystem and<br>ecosystem services accounts: time for<br>applications. Luxembourg: Publications<br>Office of the European Union, 2021,<br>S.34-48<br>http://dx.doi.org/10.2760/01033<br>Grunewald, Karsten; Herold, Hendrik;<br>Marzelli, Stefan; Meinel, Gotthard;<br>Richter, Benjamin; Syrbe, Ralf-Uwe;<br>Walz, Ulrich<br>Assessment of ecosystem services at<br>the national level in Germany –<br>Illustration of the concept and the<br>development of indicators by way of<br>the example wood provision<br>In: Ecological Indicators 70 (2016), S.<br>181-195<br>http://dx.doi.org/10.1016/j.ecolind.20<br>16.06.010 |
|----------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other output(s)      | Yes/ no Open access [yes/ no]                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                      | Status [planned/ in                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                      | preparation/ published]<br>Note(s)                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                      | If possible, specify link/                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                      | source                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| MAIA                 | Support through for dire                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| MAIA<br>contribution | Support through funding [yes/no]                                                                | No <sup>i</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                      | Personalized support from                                                                       | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                      | MAIA community [yes/ no]                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                      | Support through more than<br>one MAIA activity (such as<br>webinars and workshops)<br>[yes/ no] | Yes (Workshops, joint publication efforts)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                      | Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no]              | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Notes                |                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| References           |                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Country              |                                           | Germany                                           |
|----------------------|-------------------------------------------|---------------------------------------------------|
| Account type         |                                           | Ecosystem condition account –                     |
|                      |                                           | agricultural ecosystems                           |
| Account code         |                                           | DE_EC_N_5                                         |
| Funding partners     |                                           | German Federal Agency for Nature                  |
|                      |                                           | Conservation (BfN)                                |
| Other involved       | partners                                  | Institute for Ecological Urban and Regional       |
|                      |                                           | Development Dresden (IOER), MAIA project          |
|                      | Planned/ ongoing/ done                    | Done                                              |
| Status               | (Estimated) completion                    |                                                   |
|                      | date                                      |                                                   |
| Ecosystems           | Ecosystem types                           | Agricultural ecosystems                           |
| Temporal             | Temporal coverage                         | s. indicator                                      |
| specifics            | Frequency of updates                      |                                                   |
| Spatial              | Spatial scale <i>[local,</i>              | National                                          |
| specifics            | regional, national]                       |                                                   |
|                      | If sub-national, please                   | Not applicable                                    |
|                      | specify area                              |                                                   |
|                      | Spatial coverage [not spatially explicit, |                                                   |
|                      | aggregated at                             |                                                   |
|                      | administrative scale,                     |                                                   |
|                      | aggregated at ecological                  |                                                   |
|                      | scale, fully spatially                    |                                                   |
|                      | explicit]                                 |                                                   |
|                      | If aggregated, please                     |                                                   |
|                      | specify administrative or                 |                                                   |
|                      | ecological scale                          |                                                   |
|                      | Spatial resolution                        |                                                   |
|                      |                                           |                                                   |
| Methodology          |                                           |                                                   |
| General              |                                           | tion with regard to the contribution of           |
| description          | ecosystem types to the pres               | ervation of biodiversity in Germany.              |
| Specific             |                                           |                                                   |
| software/            |                                           |                                                   |
| model/tool           |                                           |                                                   |
| used                 | Vac / narthy/na                           | Dortly                                            |
| Following<br>SEEA EA | Yes/ partly/no                            | Partly                                            |
| guidelines           | If partly, please specify                 |                                                   |
| Indicators used      | Yes/ no                                   | Yes                                               |
|                      | If yes, please specify                    | Indicator: Share of organic farming in            |
|                      | n yes, preuse speeny                      | area/LN/acre of land (2016)                       |
|                      |                                           | Indicator: livestock population (2010, 2016)      |
|                      |                                           |                                                   |
|                      |                                           | Indicator: loss of arable land (2012, 2015, 2018) |

|                                              |                                                                                                            | Indicator: Excess nitrogen land balance (3-<br>year averages of 1995-1997, 2016-2018)                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aggregation                                  | Yes/ no                                                                                                    | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                           | Several administrative levels                                                                                                                                                                                                                                                                                                                                                              |
| Validation                                   | Yes/ no                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                            |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              |                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                            |
| Data source(s)                               | Dokumentation. Dig<br>Deutschland. LBM-E<br>Main: 61 p. Version<br>BKG/Bundesamt für<br>Basis-Landschaftsm | r Kartographie und Geodäsie (2019):<br>gitales Landbedeckungsmodell für<br>DE2018. Stand: 15.2.2019. BKG. Frankfurt am<br>1.<br>r Kartographie und Geodäsie (2016): Digitales<br>odell (AAA-Modellierung). Stand der<br>.2016. BKG. Frankfurt am Main: 6 S.                                                                                                                                |
|                                              |                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                            |
| Output(s)                                    |                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                            |
| Report(s)                                    | Yes/ no                                                                                                    | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                                              | Open access [yes/ no]                                                                                      | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
|                                              | Status [planned/ in                                                                                        | Published                                                                                                                                                                                                                                                                                                                                                                                  |
|                                              | preparation/ published]                                                                                    | Tublished                                                                                                                                                                                                                                                                                                                                                                                  |
|                                              | Note(s)                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              |                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | If possible, specify link/<br>source                                                                       | Grunewald, K., Meier, S., Syrbe, RU., Walz,<br>U. (2021): Ökosysteme Deutschlands.<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Leibniz-Institut für<br>ökologische Raumentwicklung e.V. (IOER),<br>Dresden. http://doi.org/10.26084/45xx-<br>rs50 |
| Accounting                                   | Yes/ no                                                                                                    | No                                                                                                                                                                                                                                                                                                                                                                                         |
| spreadsheet(s)                               | Open access [yes/ no]                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | Status [planned/ in                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | preparation/ published]                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | Note(s)                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | If possible, specify link/                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | source                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                            |
| Map(s)                                       | Yes/no                                                                                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
| (formatted)                                  | Open access [yes/ no]                                                                                      | Yes                                                                                                                                                                                                                                                                                                                                                                                        |
| (.ormation)                                  |                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | Status [planned/ in                                                                                        | Published                                                                                                                                                                                                                                                                                                                                                                                  |
|                                              | preparation/published]                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | Note(s)                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              | If possible, specify link/<br>source                                                                       | http://doi.org/10.26084/45xx-rs50                                                                                                                                                                                                                                                                                                                                                          |

| Geodata         | Yes/ no                                                                      | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | Open access [yes/ no]                                                        | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                 | Status [planned/ in                                                          | Published                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | preparation/ published]                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | Note(s)                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | If possible, specify link/                                                   | https://www.ioer-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                 | source                                                                       | monitor.de/en/indicators/#c257                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Scientific      | Yes/ no                                                                      | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| publication(s)  | Open access [yes/ no]                                                        | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                 | Status [planned/ in<br>preparation/ published]                               | Published                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | Note(s)                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | If possible, specify link/<br>source                                         | Grunewald, Karsten; Hartje, Volkmar;<br>Meier, Sophie; Sauer, Axel; Schweppe-<br>Kraft, Burkhard; Syrbe, Ralf-Uwe;<br>Zieschank, Roland; Ekinci, Beyhan;<br>Hirschfeld, Jesko<br>National accounting of ecosystem<br>extents and services in Germany: a pilot<br>project<br>In: La Notte, Alessandra;<br>Grammatikopoulou, Ioanna; Grunewald,<br>Karsten; Barton, David N.; Ekinci,<br>Beyhan (Eds.): Ecosystem and<br>ecosystem services accounts: time for<br>applications. Luxembourg : Publications<br>Office of the European Union, 2021,<br>S.34-48<br>http://dx.doi.org/10.2760/01033 |
| Other output(s) | Yes/ no                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | Open access [yes/ no]                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | Status [planned/ in<br>preparation/ published]                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | Note(s)                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | If possible, specify link/<br>source                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 |                                                                              | <u> </u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| MAIA            | Support through funding                                                      | No <sup>i</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| contribution    | [yes/ no]                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | Personalized support from MAIA community [yes/ no]                           | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                 | Support through more                                                         | Yes (Workshops, joint publication efforts)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                 | than one MAIA activity                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | (such as webinars and                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | workshops) [yes/ no]                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | Support through one MAIA activity (such as webinars and workshops) [yes/ no] | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Notes      |  |
|------------|--|
| References |  |

| Country                              |                                                                                                                                                                                                                                                           | Germany                                                                                       |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Account type                         |                                                                                                                                                                                                                                                           | Ecosystem condition account – water<br>ecosystems                                             |
| Account code                         |                                                                                                                                                                                                                                                           | DE_EC_N_6                                                                                     |
| Funding partners                     |                                                                                                                                                                                                                                                           | German Federal Agency for Nature<br>Conservation (BfN)                                        |
| Other involved                       | partners                                                                                                                                                                                                                                                  | Institute for Ecological Urban and Regional<br>Development Dresden (IOER), MAIA project       |
|                                      | Planned/ ongoing/ done                                                                                                                                                                                                                                    | Done                                                                                          |
| Status                               | (Estimated) completion date                                                                                                                                                                                                                               |                                                                                               |
| Ecosystems                           | Ecosystem types                                                                                                                                                                                                                                           | Water / floodplain ecosystems                                                                 |
| Temporal                             | Temporal coverage                                                                                                                                                                                                                                         | s. indicator                                                                                  |
| specifics                            | Frequency of updates                                                                                                                                                                                                                                      |                                                                                               |
| Spatial specifics                    | Spatial scale [local, regional, national]                                                                                                                                                                                                                 | National                                                                                      |
| -                                    | If sub-national, please specify area                                                                                                                                                                                                                      | Not applicable                                                                                |
| Methodology<br>General               | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]<br>If aggregated, please<br>specify administrative or<br>ecological scale<br>Spatial resolution | Fully spatially explicit                                                                      |
| description<br>Specific<br>software/ |                                                                                                                                                                                                                                                           | ervation of biodiversity in Germany.                                                          |
| model/ tool<br>used                  |                                                                                                                                                                                                                                                           |                                                                                               |
| Following                            | Yes/ partly/no                                                                                                                                                                                                                                            | Partly                                                                                        |
| SEEA EA                              | If partly, please specify                                                                                                                                                                                                                                 |                                                                                               |
| guidelines                           | Vectore                                                                                                                                                                                                                                                   | V                                                                                             |
| Indicators used                      | Yes/ no<br>If yes, please specify                                                                                                                                                                                                                         | Yes<br>Indicator: Water quality (WFD)                                                         |
|                                      |                                                                                                                                                                                                                                                           | Indicator: Settlement and transport areas (SuV) in floodplains 2006, from 2008 to 2020 yearly |

| Aggregation                                                | Yes/ no                                                                                                                           | Yes                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                            | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                  | Sum resp. weighted average                                                                                                                                                                                                                                                                                                                  |
| Validation<br>process and/<br>or uncertainty<br>assessment | Yes/ no<br>If yes, please specify                                                                                                 |                                                                                                                                                                                                                                                                                                                                             |
| Data source(s)                                             | Dokumentation. Dig<br>Deutschland. LBM-D<br>Main: 61 p. Version<br>BKG/Bundesamt für<br>Basis-Landschaftsm<br>Dokumentation: 1.4. | <sup>•</sup> Kartographie und Geodäsie (2019):<br>itales Landbedeckungsmodell für<br>E2018. Stand: 15.2.2019. BKG. Frankfurt am<br>1.<br>• Kartographie und Geodäsie (2016): Digitales<br>odell (AAA-Modellierung). Stand der<br>2016. BKG. Frankfurt am Main: 6 S.<br>Itbundesamt.de/themen/wasser                                         |
| Output(s)                                                  |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                             |
| Report(s)                                                  | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in                                                                           | Yes<br>Yes<br>Published                                                                                                                                                                                                                                                                                                                     |
|                                                            | preparation/ published]<br>Note(s)<br>If possible, specify link/                                                                  | Grunewald, K., Meier, S., Syrbe, RU., Walz,                                                                                                                                                                                                                                                                                                 |
|                                                            | source                                                                                                                            | U. (2021): Ökosysteme Deutschlands.<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Leibniz-Institut für<br>ökologische Raumentwicklung e.V. (IOER),<br>Dresden. http://doi.org/10.26084/45xx-<br>rs50 |
| Accounting                                                 | Yes/ no                                                                                                                           | No                                                                                                                                                                                                                                                                                                                                          |
| spreadsheet(s)                                             | Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/                  |                                                                                                                                                                                                                                                                                                                                             |
| Man(c)                                                     | source                                                                                                                            | Yes                                                                                                                                                                                                                                                                                                                                         |
| Map(s)<br>(formatted)                                      | Yes/ no Open access [yes/ no]                                                                                                     | Yes                                                                                                                                                                                                                                                                                                                                         |
| (iormatica)                                                | Status [planned/ in preparation/ published]                                                                                       | Published                                                                                                                                                                                                                                                                                                                                   |
|                                                            | Note(s)<br>If possible, specify link/<br>source                                                                                   | https://www.ioer-<br>monitor.de/en/indicators/#c257                                                                                                                                                                                                                                                                                         |

| Geodata         | Yes/ no                                        | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | Open access [yes/ no]                          | https://www.umweltbundesamt.de/theme<br>n/wasser                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                 | Status [planned/ in preparation/ published]    | Published                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                 | Note(s)                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                 | If possible, specify link/<br>source           | https://www.ioer-<br>monitor.de/en/indicators/#c257<br>https://www.umweltbundesamt.de/theme<br>n/wasser                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Scientific      | Yes/ no                                        | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| publication(s)  | Open access [yes/ no]                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                 | Status [planned/ in<br>preparation/ published] | Published                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                 | Note(s)                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                 | If possible, specify link/<br>source           | Grunewald, Karsten; Hartje, Volkmar;<br>Meier, Sophie; Sauer, Axel; Schweppe-<br>Kraft, Burkhard; Syrbe, Ralf-Uwe;<br>Zieschank, Roland; Ekinci, Beyhan;<br>Hirschfeld, Jesko<br>National accounting of ecosystem<br>extents and services in Germany: a pilot<br>project<br>In: La Notte, Alessandra;<br>Grammatikopoulou, Ioanna; Grunewald,<br>Karsten; Barton, David N.; Ekinci,<br>Beyhan (Eds.): Ecosystem and<br>ecosystem services accounts: time for<br>applications. Luxembourg : Publications<br>Office of the European Union, 2021,<br>S.34-48<br>http://dx.doi.org/10.2760/01033<br>Walz, Ulrich; Richter, Benjamin;<br>Grunewald, Karsten<br>Indikatoren zur Regulationsleistung von<br>Auen. Ein Beitrag zum Konzept nationaler<br>Ökosystemleistungs-Indikatoren<br>Deutschland<br>In: Naturschutz und Landschaftsplanung<br>49 (2017) 3, S.93-100 |
| Other output(s) | Yes/ no                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                 | Open access [yes/ no]                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                 | Status [planned/ in preparation/ published]    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                 | Note(s)                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                 | If possible, specify link/<br>source           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| MAIA         | Support through funding         | No <sup>i</sup>                            |
|--------------|---------------------------------|--------------------------------------------|
| contribution | [yes/ no]                       |                                            |
|              | Personalized support from       | No                                         |
|              | MAIA community [yes/ no]        |                                            |
|              | Support through more            | Yes (Workshops, joint publication efforts) |
|              | than one MAIA activity          |                                            |
|              | (such as webinars and           |                                            |
|              | workshops) <i>[yes/ no]</i>     |                                            |
|              | Support through one MAIA        | No                                         |
|              | activity (such as webinars      |                                            |
|              | and workshops) <i>[yes/ no]</i> |                                            |
| Notes        |                                 |                                            |
| References   |                                 |                                            |

| Country           |                                                                                                                                                                                    | Germany                                                                                 |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Account type      |                                                                                                                                                                                    | Ecosystem condition account – <b>Urban</b>                                              |
|                   |                                                                                                                                                                                    | ecosystems                                                                              |
| Account code      |                                                                                                                                                                                    | DE_EC_N_7                                                                               |
| Funding partne    | ers                                                                                                                                                                                | German Federal Agency for Nature<br>Conservation (BfN)                                  |
| Other involved    | partners                                                                                                                                                                           | Institute for Ecological Urban and Regional<br>Development Dresden (IOER), MAIA project |
|                   | Planned/ ongoing/ done                                                                                                                                                             | Done                                                                                    |
| Status            | (Estimated) completion date                                                                                                                                                        |                                                                                         |
| Ecosystems        | Ecosystem types                                                                                                                                                                    | Urban ecosystems                                                                        |
| Temporal          | Temporal coverage                                                                                                                                                                  | s. indicators                                                                           |
| specifics         | Frequency of updates                                                                                                                                                               |                                                                                         |
| Spatial specifics | Spatial scale [local, regional, national]                                                                                                                                          | National                                                                                |
|                   | If sub-national, please specify area                                                                                                                                               | Not applicable                                                                          |
|                   | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]<br>If aggregated, please | Fully spatially explicit                                                                |
|                   | specify administrative or ecological scale                                                                                                                                         |                                                                                         |
|                   | Spatial resolution                                                                                                                                                                 |                                                                                         |
| Methodology       |                                                                                                                                                                                    |                                                                                         |
| General           | Conturo the change of sord                                                                                                                                                         | tion with regard to the contribution of                                                 |
| description       | Capture the change of condition with regard to the contribution of ecosystem types to the preservation of biodiversity in Germany.                                                 |                                                                                         |
| Specific          |                                                                                                                                                                                    |                                                                                         |
| software/         |                                                                                                                                                                                    |                                                                                         |

| model/ tool<br>used                          |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                               | Partly                                                                                                                                                                                                                                                                                                                                                                                            |
| SEEA EA                                      | If partly, please specify                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                   |
| guidelines                                   |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                   |
| Indicators used                              | Yes/ no                                                                                                                                                                                                                                                                                                                                                      | Yes                                                                                                                                                                                                                                                                                                                                                                                               |
|                                              | If yes, please specify                                                                                                                                                                                                                                                                                                                                       | Indicator: Green space per inhabitant 2013, 2018                                                                                                                                                                                                                                                                                                                                                  |
|                                              |                                                                                                                                                                                                                                                                                                                                                              | Indicator: Cooling effect through UGI<br>Data for 2018 based on LBM-DE, Urban<br>Atlas, script for update every three years.                                                                                                                                                                                                                                                                      |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                                                                                                                                                      | Yes                                                                                                                                                                                                                                                                                                                                                                                               |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                                                                                                             | Average per city (> 50000 inhabitants)                                                                                                                                                                                                                                                                                                                                                            |
| Validation                                   | Yes/ no                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                   |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                              |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                              | <ul> <li>Dokumentation. Digitales Landbedeckungsmodell für<br/>Deutschland. LBM-DE2018. Stand: 15.2.2019. BKG. Frankfurt am<br/>Main: 61 p. Version 1.</li> <li>BKG/Bundesamt für Kartographie und Geodäsie (2016): Digitales<br/>Basis-Landschaftsmodell (AAA-Modellierung). Stand der<br/>Dokumentation: 1.4.2016. BKG. Frankfurt am Main: 6 S.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                   |
| -                                            |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                   |
| Output(s)                                    |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                   |
| Report(s)                                    | Yes/no                                                                                                                                                                                                                                                                                                                                                       | Yes                                                                                                                                                                                                                                                                                                                                                                                               |
|                                              | Open access [yes/no]                                                                                                                                                                                                                                                                                                                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                               |
|                                              | Status [planned/ in                                                                                                                                                                                                                                                                                                                                          | Published                                                                                                                                                                                                                                                                                                                                                                                         |
|                                              | preparation/published]                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                              | Note(s)<br>If possible, specify link/<br>source                                                                                                                                                                                                                                                                                                              | Grunewald, K., Meier, S., Syrbe, RU., Walz,<br>U. (2021): Ökosysteme Deutschlands.<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Leibniz-Institut für<br>ökologische Raumentwicklung e.V. (IOER),<br>Dresden. <u>http://doi.org/10.26084/45xx-</u><br>rs50 |
| Accounting                                   | Yes/ no                                                                                                                                                                                                                                                                                                                                                      | No                                                                                                                                                                                                                                                                                                                                                                                                |
| spreadsheet(s)                               | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                              | Status [planned/ in                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                              |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                              | preparation/ published]<br>Note(s)                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                   |

|                 | If possible, specify link/ |                                          |
|-----------------|----------------------------|------------------------------------------|
| Map(s)          | source<br>Yes/ no          | Yes                                      |
| (formatted)     | Open access [yes/ no]      | Yes                                      |
| ()              | Status [planned/ in        | Published resp. in preparation           |
|                 | preparation/ published]    | i ubilsheu resp. in preparation          |
|                 | Note(s)                    |                                          |
|                 | If possible, specify link/ | https://www.ioer-                        |
|                 | source                     | monitor.de/en/indicators/#c257           |
| Geodata         | Yes/ no                    | Yes                                      |
|                 | Open access [yes/ no]      | Yes                                      |
|                 | Status [planned/ in        | Published resp. in preparation           |
|                 | preparation/ published]    |                                          |
|                 | Note(s)                    |                                          |
|                 | If possible, specify link/ | https://www.ioer-                        |
|                 | source                     | monitor.de/en/indicators/#c257           |
| Scientific      | Yes/ no                    | Yes                                      |
| publication(s)  | Open access [yes/ no]      | Yes                                      |
|                 | Status [planned/ in        | Published                                |
|                 | preparation/published]     |                                          |
|                 | Note(s)                    |                                          |
|                 | If possible, specify link/ | Grunewald, Karsten; Hartje, Volkmar;     |
|                 | source                     | Meier, Sophie; Sauer, Axel; Schweppe-    |
|                 |                            | Kraft, Burkhard; Syrbe, Ralf-Uwe;        |
|                 |                            | Zieschank, Roland; Ekinci, Beyhan;       |
|                 |                            | Hirschfeld, Jesko                        |
|                 |                            | National accounting of ecosystem         |
|                 |                            | extents and services in Germany: a pilot |
|                 |                            | project                                  |
|                 |                            | In: La Notte, Alessandra;                |
|                 |                            | Grammatikopoulou, Ioanna; Grunewald,     |
|                 |                            | Karsten; Barton, David N.; Ekinci,       |
|                 |                            | Beyhan (Eds.): Ecosystem and             |
|                 |                            | ecosystem services accounts: time for    |
|                 |                            | applications. Luxembourg : Publications  |
|                 |                            | Office of the European Union, 2021,      |
|                 |                            | S.34-48                                  |
| Other output(s) | Yes/ no                    | http://dx.doi.org/10.2760/01033          |
| other output(s) | Open access [yes/ no]      |                                          |
|                 | Status <i>[planned/ in</i> | -                                        |
|                 | preparation/ published]    |                                          |
|                 | Note(s)                    |                                          |
|                 | If possible, specify link/ |                                          |
|                 | source                     |                                          |
|                 |                            |                                          |
| MAIA            | Support through funding    | No <sup>i</sup>                          |
| contribution    | [yes/ no]                  |                                          |

|            | Personalized support from MAIA community [yes/ no]      | No                                         |
|------------|---------------------------------------------------------|--------------------------------------------|
|            | Support through more<br>than one MAIA activity          | Yes (Workshops, joint publication efforts) |
|            | (such as webinars and                                   |                                            |
|            | workshops) <i>[yes/ no]</i><br>Support through one MAIA | No                                         |
|            | activity (such as webinars<br>and workshops) [yes/ no]  |                                            |
| Notes      |                                                         |                                            |
| References |                                                         |                                            |

## 6.6.3. Ecosystem service accounts (biophysical)

| Country              |                                                                                                                                                           | Germany                                                                   |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Account type         |                                                                                                                                                           | Ecosystem service account (biophysical)                                   |
| Account code         |                                                                                                                                                           | DE_ESb_N_1                                                                |
| Funding partners     |                                                                                                                                                           | German Federal Agency for Nature                                          |
|                      |                                                                                                                                                           | Conservation (BfN)                                                        |
| Other involved       | partners                                                                                                                                                  | Institute for Ecological Urban and Regional<br>Development Dresden (IOER) |
|                      | Planned/ ongoing/ done                                                                                                                                    | Done                                                                      |
| Status               | (Estimated) completion date                                                                                                                               |                                                                           |
| Ecosystems           | Ecosystem types                                                                                                                                           | Cropland, meadows and pastures                                            |
| Ecosystem<br>service | Ecosystem service<br>category                                                                                                                             | provisioning                                                              |
|                      | Ecosystem service                                                                                                                                         | Biomass provisioning service of agricultural lands                        |
| Temporal             | Temporal coverage                                                                                                                                         | 2012, 2015                                                                |
| specifics            | Frequency of updates                                                                                                                                      |                                                                           |
| Spatial              | Spatial scale <i>[local,</i>                                                                                                                              | National                                                                  |
| specifics            | regional, national]                                                                                                                                       |                                                                           |
|                      | If sub-national, please specify area                                                                                                                      | Not applicable                                                            |
|                      | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit] | Aggregated at administrative scale                                        |
|                      | If aggregated, please<br>specify administrative or<br>ecological scale                                                                                    | Municipality                                                              |
|                      | Spatial resolution                                                                                                                                        | 1 ha                                                                      |
|                      |                                                                                                                                                           |                                                                           |
| Methodology          |                                                                                                                                                           |                                                                           |
|                      |                                                                                                                                                           |                                                                           |

| General<br>description                       | German-wide spatially explicit data for the relative level of agricultural<br>production on different soils were used as level of biomass provisioning<br>services of agricultural lands in physical terms.<br>We used this way, for it<br>- helps to determine the service itself, independent of spatially specific<br>levels of human inputs<br>- there is a lack of data to determine the spatially specific level of<br>agricultural production |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specific<br>software/<br>model/ tool<br>used | Existing dataset of the Gern<br>Natural Resources (see belo                                                                                                                                                                                                                                                                                                                                                                                          | nan Federal Agency for Geosciences and<br>ow: Data sources)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                                                                       | Partly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| SEEA EA<br>guidelines                        | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                                            | Not sufficient spatial explicit data on actual<br>yields. Therefore, German-wide spatially<br>explicit figures for the relative level of<br>agricultural production on the different soils<br>were used instead to determine the level of<br>biomass provisioning services of agricultural<br>lands in physical terms.<br>Furthermore, yield based data would not<br>help to determine the monetary value of the<br>service because of a lack of data on<br>agricultural profits in Germany. Instead,<br>agricultural land rent was taken as a proxy<br>for the monetary value of the service and the<br>correlation between the relative level of<br>agricultural production and agricultural land |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                      | rents were used to assess the spatially                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Indicators used                              | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                              | explicit monetary values of the service.<br>Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| mulcators useu                               | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                               | Müncheberger Soil Quality Rating (SQR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                                                                                                                                                                                                     | Municipality,<br>national,<br>by summing up<br>SQRs can be added as they are designed to<br>correlate linearly with agricultural yields<br>(the value of yields)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Validation                                   | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                              | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                               | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Data source(s)                               | <ul> <li>Mueller L, Schindler U, Behrendt A, Eulenstein F, Dannowski R<br/>(2007) Field manual for detecting and assessing properties and<br/>limitations of soils for cropping and grazing.<br/><u>https://www.zalf.de/de/forschung_lehre/publikationen/Docume_nts/Publikation_Mueller_L/field_mueller.pdf</u>. Accessed on: 2022-<br/>3-28.</li> </ul>                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| <ul> <li>https://www.bgr.bund.de/DE/Themen/Boden/Ressourcent<br/>rtung/Ertragspotential/Ertragspotential_node.html. Accesse<br/>2020-3-25.</li> <li>BKG/Bundesamt für Kartographie und Geodäsie (2019b):<br/>Dokumentation. Digitales Landbedeckungsmodell für</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <ul> <li>BKG/Bundesamt f ür Kartographie und Geodäsie (2019b):<br/>Dokumentation. Digitales Landbedeckungsmodell f ür<br/>Deutschland. LBM-DE2018. Stand: 15.2.2019. BKG. Frankfurt am</li> </ul> |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Output(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                   |  |
| Report(s) Yes/no Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                   |  |
| Open access [yes/ no] Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                   |  |
| Status [planned/ in<br>preparation/ published]       First draft available at German Federal<br>Agency for Nature Conservation, final d<br>in preparation.         Additional publication in German MAES<br>report in preparation (planned for end<br>2022)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 5                                                                                                                                                                                                 |  |
| Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                   |  |
| If possible, specify link/<br>sourceGrunewald, K., Meier, S., Syrbe, RU., W.<br>(2021): Ökosysteme Deutschlands.<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für<br>bundesweites Assessment und Monitor<br>des Ökosystemleistungen. Leibniz-Institut f<br>ökologische Raumentwicklung e.V. (IOE<br>Dresden. <a href="http://doi.org/10.26084/45xrs50">http://doi.org/10.26084/45x</a><br>rs50Hirschfeld, J., Hartje, V., Pekker, R.,<br>Grunewald, K., Meier, S., Sauer, A., Syrbe<br>U., Zieschank, R., Schweppe-Kraft, B. (20Integration von Ökosystemen und<br>Ökosystemleistungen in die<br>Umweltökonomische Gesamtrechnung.<br>Research Report for the German Federa<br>Agency for Nature Conservation,<br>Berlin/Dresden/Bonn, unpublished. | ein<br>ing<br>ïr<br>(R),<br>x-<br>e, R<br>()20):                                                                                                                                                  |  |
| Accounting Yes/no Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                   |  |
| spreadsheet(s)       Open access [yes/ no]         Status [planned/ in preparation/ published]       November 2022         Note(s)       If possible, specify link/ source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                   |  |
| Map(s) Yes/no Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                   |  |

|                | Status [planned/ in                                       | Published / planned                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | preparation/ published]                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                | Note(s)                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                | If possible, specify link/<br>source                      | Published:<br>Grunewald, Karsten; Hartje, Volkmar; Meier,<br>Sophie; Sauer, Axel; Schweppe-Kraft,<br>Burkhard; Syrbe, Ralf-Uwe; Zieschank,<br>Roland; Ekinci, Beyhan; Hirschfeld, Jesko<br>National accounting of ecosystem extents<br>and services in Germany: a pilot project<br>In: La Notte, Alessandra; Grammatikopoulou,<br>Ioanna; Grunewald, Karsten; Barton, David<br>N.; Ekinci, Beyhan (Eds.): Ecosystem and<br>ecosystem services accounts: time for<br>applications. Luxembourg : Publications<br>Office of the European Union, 2021, S.34-48<br>http://dx.doi.org/10.2760/01033<br>Additional maps in:<br>Article in "One Ecosystem", topical<br>collection: "Monetary Valuation for<br>Ecosystem Accounting" (Pensoft), planned |
|                |                                                           | for July 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Geodata        | Yes/ no                                                   | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                | Open access [yes/ no]                                     | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                | Status [planned/ in<br>preparation/ published]<br>Note(s) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                | If possible, specify link/<br>source                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Scientific     | Yes/ no                                                   | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| publication(s) | Open access [yes/ no]                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| publication(b) | Status [planned/ in<br>preparation/ published]            | Published / in preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                | Note(s)                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                | If possible, specify link/<br>source                      | Grunewald, Karsten; Hartje, Volkmar; Meier,<br>Sophie; Sauer, Axel; Schweppe-Kraft,<br>Burkhard; Syrbe, Ralf-Uwe; Zieschank,<br>Roland; Ekinci, Beyhan; Hirschfeld, Jesko<br>National accounting of ecosystem extents<br>and services in Germany: a pilot project<br>In: La Notte, Alessandra; Grammatikopoulou,<br>Ioanna; Grunewald, Karsten; Barton, David<br>N.; Ekinci, Beyhan (Eds.) : Ecosystem and<br>ecosystem services accounts: time for<br>applications. Luxembourg : Publications<br>Office of the European Union, 2021, S.34-48<br>http://dx.doi.org/10.2760/01033                                                                                                                                                               |
|                |                                                           | Article in "One Ecosystem", topical collection: "Monetary Valuation for                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                 |                                                                                                        | Ecosystem Accounting" (Pensoft), planned for July 2022 |
|-----------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Other output(s) | Yes/ no                                                                                                | No                                                     |
|                 | Open access [yes/ no]                                                                                  |                                                        |
|                 | Status [planned/ in preparation/ published]                                                            |                                                        |
|                 | Note(s)                                                                                                |                                                        |
|                 | If possible, specify link/<br>source                                                                   |                                                        |
|                 |                                                                                                        |                                                        |
| MAIA            | Support through funding                                                                                | No <sup>i</sup>                                        |
| contribution    | [yes/ no]                                                                                              |                                                        |
|                 | Personalized support                                                                                   | No                                                     |
|                 | from MAIA community                                                                                    |                                                        |
|                 | [yes/ no]                                                                                              |                                                        |
|                 | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) <i>[yes/ no]</i> | Yes (Workshops, joint publication efforts)             |
|                 | Support through one<br>MAIA activity (such as<br>webinars and workshops)<br>[yes/ no]                  | No                                                     |
| Notes           | -                                                                                                      |                                                        |
| References      |                                                                                                        |                                                        |

| Country                 |                                           | Germany                                                                   |
|-------------------------|-------------------------------------------|---------------------------------------------------------------------------|
| Account type            |                                           | Ecosystem service account (biophysical)                                   |
| Account code            |                                           | DE_ESb_N_2                                                                |
| Funding partners        |                                           | German Federal Agency for Nature<br>Conservation (BfN)                    |
| Other involved partners |                                           | Institute for Ecological Urban and Regional<br>Development Dresden (IOER) |
|                         | Planned/ ongoing/ done                    | Done                                                                      |
| Status                  | (Estimated) completion date               | 2022                                                                      |
| Ecosystems              | Ecosystem types                           | All ecosystems                                                            |
| Ecosystem<br>service    | Ecosystem service<br>category             | Regulation and maintenance                                                |
|                         | Ecosystem service                         | Global climate regulation service                                         |
| Temporal                | Temporal coverage                         | 2018                                                                      |
| specifics               | Frequency of updates                      | 3-year (planned)                                                          |
| Spatial<br>specifics    | Spatial scale [local, regional, national] | National                                                                  |
|                         | If sub-national, please specify area      | Not applicable                                                            |

|                     | Spatial coverage [not                                        | Fully spatially explicit                  |
|---------------------|--------------------------------------------------------------|-------------------------------------------|
|                     | spatially explicit,                                          |                                           |
|                     | aggregated at                                                |                                           |
|                     | administrative scale,                                        |                                           |
|                     | aggregated at ecological                                     |                                           |
|                     | scale, fully spatially                                       |                                           |
|                     | explicit]                                                    |                                           |
|                     | If aggregated, please                                        | Not applicable                            |
|                     | specify administrative or                                    |                                           |
|                     | ecological scale                                             |                                           |
|                     | Spatial resolution                                           | 1 ha                                      |
| Mathadalagu         |                                                              |                                           |
| Methodology         | A - C                                                        |                                           |
| General             |                                                              | g to the LULUCF methodology for National  |
| description         | Inventory Reports under U                                    | NFUL                                      |
| Specific            |                                                              |                                           |
| software/           |                                                              |                                           |
| model/ tool<br>used |                                                              |                                           |
| Following           | Yes/ partly/no                                               | Yes                                       |
| SEEA EA             | If partly, please specify                                    | Not applicable                            |
| guidelines          | If partify, please specify                                   | Not applicable                            |
| Indicators used     | Yes/ no                                                      | Yes                                       |
|                     | If yes, please specify                                       | GHG-Emission/sequestration in tCO2 – eq / |
|                     |                                                              | ha                                        |
| Aggregation         | Yes/ no                                                      | Yes                                       |
|                     | If yes, please specify (e.g.                                 | National,                                 |
|                     | aggregation level and                                        | by summing up                             |
|                     | method)                                                      |                                           |
| Validation          | Yes/ no                                                      | No                                        |
| process and/        | If yes, please specify                                       | Not applicable                            |
| or uncertainty      |                                                              |                                           |
| assessment          |                                                              |                                           |
|                     |                                                              |                                           |
| Data source(s)      | -                                                            | r Kartographie und Geodäsie (2019):       |
|                     | Dokumentation. Digitales Landbedeckungsmodell für            |                                           |
|                     | Deutschland. LBM-DE2018. Stand: 15.2.2019. BKG. Frankfurt am |                                           |
|                     | Main: 61 p.                                                  |                                           |
|                     | UBA Umweltbundesamt. Berichterstattung unter der             |                                           |
|                     | Klimarahmenkonvention der Vereinten Nationen und dem         |                                           |
|                     |                                                              | 020: Nationaler Inventarbericht zum       |
|                     | Deutschen Treibha                                            | usgasinventar 1990-2018. 2020.            |
|                     |                                                              |                                           |
| Output(s)           |                                                              |                                           |
| Report(s)           | Yes/ no                                                      | Yes                                       |
|                     | Open access [yes/ no]                                        | Yes                                       |
|                     | Status [planned/ in                                          | In preparation                            |
|                     | preparation/ published]                                      |                                           |
|                     | Note(s)                                                      |                                           |
|                     |                                                              |                                           |

| Accounting<br>spreadsheet(s) | If possible, specify link/<br>source<br><u>Yes/ no</u><br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source | German Federal Agency for Nature<br>Conservation. Research Report "Accounting<br>II"<br>Additional publication in German MAES<br>report in preparation (planned for end of<br>2022)<br>Yes<br>Yes<br>In preparation<br>German Federal Agency for Nature<br>Conservation: "Research Report Accounting |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              |                                                                                                                                                                                      | II"                                                                                                                                                                                                                                                                                                  |
| Map(s)                       | Yes/ no                                                                                                                                                                              | Yes                                                                                                                                                                                                                                                                                                  |
| (formatted)                  | Open access [yes/ no]                                                                                                                                                                | Yes                                                                                                                                                                                                                                                                                                  |
|                              | Status [planned/ in<br>preparation/ published]<br>Note(s)                                                                                                                            | Published / planned                                                                                                                                                                                                                                                                                  |
|                              | If possible, specify link/<br>source                                                                                                                                                 | Additional maps in:<br>Article in "One Ecosystem", topical collection:<br>"Monetary Valuation for Ecosystem<br>Accounting" (Pensoft), planned for July 2022                                                                                                                                          |
| Geodata                      | Yes/ no                                                                                                                                                                              | Yes                                                                                                                                                                                                                                                                                                  |
|                              | Open access [yes/ no]                                                                                                                                                                | No                                                                                                                                                                                                                                                                                                   |
|                              | Status [planned/ in preparation/ published]                                                                                                                                          |                                                                                                                                                                                                                                                                                                      |
|                              | Note(s)<br>If possible, specify link/<br>source                                                                                                                                      |                                                                                                                                                                                                                                                                                                      |
| Scientific                   | Yes/ no                                                                                                                                                                              | Yes                                                                                                                                                                                                                                                                                                  |
| publication(s)               | Open access [yes/ no]                                                                                                                                                                |                                                                                                                                                                                                                                                                                                      |
|                              | Status [planned/ in preparation/ published]                                                                                                                                          | Planned for 2023                                                                                                                                                                                                                                                                                     |
|                              | Note(s)<br>If possible, specify link/<br>source                                                                                                                                      |                                                                                                                                                                                                                                                                                                      |
| Other output(s)              | Yes/ no                                                                                                                                                                              | No                                                                                                                                                                                                                                                                                                   |
|                              | Open access [yes/ no]                                                                                                                                                                |                                                                                                                                                                                                                                                                                                      |
|                              | Status [planned/ in preparation/ published]                                                                                                                                          |                                                                                                                                                                                                                                                                                                      |
|                              | Note(s)<br>If possible, specify link/<br>source                                                                                                                                      |                                                                                                                                                                                                                                                                                                      |
|                              |                                                                                                                                                                                      | ·                                                                                                                                                                                                                                                                                                    |
| MAIA<br>contribution         | Support through funding [yes/ no]                                                                                                                                                    | No <sup>i</sup>                                                                                                                                                                                                                                                                                      |

|            | Personalized support<br>from MAIA community<br>[yes/no]                                                       | No  |
|------------|---------------------------------------------------------------------------------------------------------------|-----|
|            | Support through more<br>than one MAIA activity<br>(such as webinars and                                       | Yes |
|            | workshops) [yes/ no]<br>Support through one<br>MAIA activity (such as<br>webinars and<br>workshops) [yes/ no] | No  |
| Notes      |                                                                                                               |     |
| References |                                                                                                               |     |

| Country              |                                                                                        | Germany                                                                   |
|----------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Account type         |                                                                                        | Ecosystem service account (biophysical)                                   |
| Account code         |                                                                                        | DE_ESb_N_3                                                                |
| Funding partne       | rs                                                                                     | German Federal Agency for Nature                                          |
|                      |                                                                                        | Conservation (BfN)                                                        |
| Other involved       | partners                                                                               | Institute for Ecological Urban and Regional<br>Development Dresden (IOER) |
|                      | Planned/ ongoing/ done                                                                 | Done                                                                      |
| Status               | (Estimated) completion date                                                            |                                                                           |
| Ecosystems           | Ecosystem types                                                                        | All ecosystems                                                            |
| Ecosystem<br>service | Ecosystem service<br>category                                                          | Regulation and maintenance                                                |
|                      | Ecosystem service                                                                      | Local (micro and meso) climate regulation service                         |
| Temporal             | Temporal coverage                                                                      | 2018                                                                      |
| specifics            | Frequency of updates                                                                   | 3-year (planned)                                                          |
| Spatial              | Spatial scale <i>[local,</i>                                                           | National                                                                  |
| specifics            | regional, national]                                                                    | (all cities with more than 50.000 inhabitants)                            |
|                      | If sub-national, please specify area                                                   |                                                                           |
|                      | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale, |                                                                           |
|                      | aggregated at ecological<br>scale, fully spatially<br>explicit]                        |                                                                           |
|                      | If aggregated, please<br>specify administrative or<br>ecological scale                 |                                                                           |
|                      | Spatial resolution                                                                     |                                                                           |

| Methodology                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                     |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General<br>description                       | <ul> <li>According to Zardo et al. (2017), the cooling capacity of vegetation in cities with more than 50.000 inhabitants within the Functional Urban Areas (FUA) was assessed.</li> <li>Zardo, L., Geneletti, D., Pérez-Soba, M., van Eupen, M. (2017): Estimating the cooling capacity of green infrastructures to support urban planning. In: Ecosystem Services (26), 225–235. doi:10.1016/j.ecoser.2017.06.016.</li> </ul>                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                     |
| Specific<br>software/<br>model/ tool<br>used | ArcGISpro and PyCharm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                     |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes                                                                                                                                                                                                                 |
| SEEA EA<br>guidelines                        | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Not applicable                                                                                                                                                                                                      |
| Indicators used                              | Yes/ no<br>If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Yes<br>Two indicators were developed: 1) The<br>percentage of inhabitants was estimated that<br>lived in areas with at least a good cooling<br>capacity. 2) The mean cooling capacity of<br>each city was assessed. |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes                                                                                                                                                                                                                 |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                     |
| Validation                                   | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | No                                                                                                                                                                                                                  |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Not applicable                                                                                                                                                                                                      |
| Data source(s)                               | <ul> <li>BKG/Bundesamt für Kartographie und Geodäsie (2019):<br/>Dokumentation. Digitales Landbedeckungsmodell für<br/>Deutschland. LBM-DE2018. Stand: 15.2.2019. BKG. Frankfurt am<br/>Main: 61 p.</li> <li>Copernicus (2021): Urban Atlas. Street Tree Layer (STL) 2018.<br/>URL: https://land.copernicus.eu/local/urban-atlas/street-tree-<br/>layer-stl-2018 (Zugriff am: 13.12.2021).</li> <li>Krüger, T., Eichler, L., Meinel, G., Tenikl, J., Taubenböck, H., Wurm,<br/>M. (2022). Urban Green Raster Germany 2018 (1 (2021)) [Data<br/>set]. <u>https://doi.org/10.26084/ioerfdz-r10-urbgrn2018</u>.</li> <li>Destatis - Statistisches Bundesamt (2011): Zensusatlas 2011.<br/>https://atlas.zensus2011.de/ (27.11.2020), zuletzt aktualisiert<br/>2015.</li> </ul> |                                                                                                                                                                                                                     |
| ()                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                     |
| Output(s)                                    | Vac/ma                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Vac                                                                                                                                                                                                                 |
| Report(s)                                    | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes<br>Yes<br>Published                                                                                                                                                                                             |
|                                              | preparation/ published]<br>Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                     |

|                              | If possible, specify link/<br>source | Grunewald, K., Meier, S., Syrbe, RU., Walz, U.<br>(2021): Ökosysteme Deutschlands –<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Research Report for<br>the German Federal Agency for Nature<br>Conservation (FKZ: 3518810400), Dresden |
|------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accounting                   | Yes/ no                              | No                                                                                                                                                                                                                                                                                                                                                                              |
| spreadsheet(s)               | Open access [yes/ no]                |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Status [planned/ in                  |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | preparation/ published]              |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Note(s)                              |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | If possible, specify link/           |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | source                               |                                                                                                                                                                                                                                                                                                                                                                                 |
| Map(s)                       | Yes/ no                              | Yes                                                                                                                                                                                                                                                                                                                                                                             |
| (formatted)                  | Open access [yes/ no]                | Yes                                                                                                                                                                                                                                                                                                                                                                             |
|                              | Status [planned/ in                  | Published                                                                                                                                                                                                                                                                                                                                                                       |
|                              | preparation/ published]              |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Note(s)                              |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | If possible, specify link/<br>source | Grunewald, K., Meier, S., Syrbe, RU., Walz, U.<br>(2021): Ökosysteme Deutschlands –<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Research Report for<br>the German Federal Agency for Nature<br>Conservation (FKZ: 3518810400), Dresden |
| Geodata                      | Yes/ no                              | Yes                                                                                                                                                                                                                                                                                                                                                                             |
|                              | Open access [yes/ no]                | No                                                                                                                                                                                                                                                                                                                                                                              |
|                              | Status [planned/ in                  |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | preparation/ published]              |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Note(s)                              |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | If possible, specify link/           |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | source                               |                                                                                                                                                                                                                                                                                                                                                                                 |
| Scientific<br>publication(s) | Yes/no                               | Yes                                                                                                                                                                                                                                                                                                                                                                             |
|                              | Open access [yes/ no]                |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Status [planned/ in                  | In preparation                                                                                                                                                                                                                                                                                                                                                                  |
|                              | preparation/published]               |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Note(s)                              |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | If possible, specify link/           |                                                                                                                                                                                                                                                                                                                                                                                 |
| Other output(c)              | source                               | No                                                                                                                                                                                                                                                                                                                                                                              |
| Other output(s)              | Yes/no                               | No                                                                                                                                                                                                                                                                                                                                                                              |
|                              | Open access [yes/ no]                |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Status [planned/ in                  |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | preparation/ published]              |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Note(s)                              |                                                                                                                                                                                                                                                                                                                                                                                 |

|                      | If possible, specify link/<br>source                                                                   |                 |
|----------------------|--------------------------------------------------------------------------------------------------------|-----------------|
|                      |                                                                                                        |                 |
| MAIA<br>contribution | Support through funding [yes/ no]                                                                      | No <sup>i</sup> |
|                      | Personalized support<br>from MAIA community<br>[yes/ no]                                               | No              |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) <i>[yes/ no]</i> | Yes             |
|                      | Support through one<br>MAIA activity (such as<br>webinars and workshops)<br>[yes/ no]                  | No              |
| Notes                |                                                                                                        |                 |
| References           |                                                                                                        |                 |

| Country              |                                                                 | Germany                                                                   |
|----------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------|
| Account type         |                                                                 | Ecosystem service account (biophysical)                                   |
| Account code         |                                                                 | DE_ESb_N_4                                                                |
| Funding partne       | ers                                                             | German Federal Agency for Nature<br>Conservation (BfN)                    |
| Other involved       | partners                                                        | Institute for Ecological Urban and Regional<br>Development Dresden (IOER) |
|                      | Planned/ ongoing/ done                                          | Done                                                                      |
| Status               | (Estimated) completion date                                     |                                                                           |
| Ecosystems           | Ecosystem types                                                 | All ecosystems                                                            |
| Ecosystem<br>service | Ecosystem service category                                      | Regulation and maintenance                                                |
|                      | Ecosystem service                                               | Soil erosion control services (only water erosion)                        |
| Temporal             | Temporal coverage                                               | 2012, 2015                                                                |
| specifics            | Frequency of updates                                            | 3-year (planned)                                                          |
| Spatial<br>specifics | Spatial scale [local, regional, national]                       | National                                                                  |
|                      | If sub-national, please specify area                            |                                                                           |
|                      | Spatial coverage [not spatially explicit,                       | Fully spatially explicit                                                  |
|                      | aggregated at<br>administrative scale,                          |                                                                           |
|                      | aggregated at ecological<br>scale, fully spatially<br>explicit] |                                                                           |

|                                              | If aggregated, please                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                       |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                              | specify administrative or                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                       |
|                                              | ecological scale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                       |
|                                              | Spatial resolution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1 ha                                                                                                                                                                  |
| Mathadalagy                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                       |
| Methodology<br>General                       | Application of the adopted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | soil prosion equation of Wischmover and                                                                                                                               |
| description                                  | Application of the adopted soil erosion equation of Wischmeyer and<br>Smith 1978 to Germany                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                       |
| Specific<br>software/<br>model/ tool         | ArcGISpro PyCharm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                       |
| used                                         | Vac/manthy/ma                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Yes                                                                                                                                                                   |
| Following<br>SEEA EA<br>guidelines           | <i>Yes/ partly/no</i><br>If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Tes                                                                                                                                                                   |
| Indicators used                              | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                                                                                                                                                   |
|                                              | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                       |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                                                                                                                                                   |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | National, by summing up                                                                                                                                               |
| Validation                                   | Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | No                                                                                                                                                                    |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                       |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                       |
| Data source(s)                               | <ul> <li>BKG/Bundesamt für Kartographie und Geodäsie (2019):<br/>Dokumentation. Digitales Landbedeckungsmodell für<br/>Deutschland. LBM-DE2018. Stand: 15.2.2019. BKG. Frankfurt am<br/>Main: 61 p.</li> <li>BKG/Bundesamt für Kartographie und Geodäsie (2016): Digitales<br/>Basis-Landschaftsmodell (AAA-Modellierung). Stand der<br/>Dokumentation: 1.4.2016. BKG. Frankfurt am Main: 6 S.</li> <li><u>https://www.dwd.de/DE/klimaumwelt/cdc/cdc node.html;jsessi<br/>onid=B59802BD1D65FAA37BD2A7A5C6717869.live21071</u></li> <li>Bodenübersichtskarte 1:1.000.000 (BÜK1000)<br/>https://www.bgr.bund.de/DE/Themen/Boden/Informationsgrun<br/>dlagen/Bodenkundliche_Karten_Datenbanken/BUEK1000/buek1<br/>000_node.html</li> </ul> |                                                                                                                                                                       |
| Output(s)                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                       |
| Report(s)                                    | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                                                                                                                                                   |
|                                              | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Yes                                                                                                                                                                   |
|                                              | Status [planned/ in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Published                                                                                                                                                             |
|                                              | preparation/ published]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                       |
|                                              | Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                       |
|                                              | If possible, specify link/<br>source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Grunewald, K., Meier, S., Syrbe, RU., Walz, U.<br>(2021): Ökosysteme Deutschlands –<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein |

| Accounting<br>spreadsheet(s) | Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published] | bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Research Report for<br>the German Federal Agency for Nature<br>Conservation (FKZ: 3518810400), Dresden<br>No                                                                                                                                                                    |
|------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | Note(s)<br>If possible, specify link/<br>source                                    |                                                                                                                                                                                                                                                                                                                                                                                 |
| Map(s)                       | Yes/ no                                                                            | Yes                                                                                                                                                                                                                                                                                                                                                                             |
| (formatted)                  | Open access [yes/ no]                                                              | Yes                                                                                                                                                                                                                                                                                                                                                                             |
|                              | Status [planned/ in<br>preparation/ published]<br>Note(s)                          | Published                                                                                                                                                                                                                                                                                                                                                                       |
|                              | If possible, specify link/<br>source                                               | Grunewald, K., Meier, S., Syrbe, RU., Walz, U.<br>(2021): Ökosysteme Deutschlands –<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Research Report for<br>the German Federal Agency for Nature<br>Conservation (FKZ: 3518810400), Dresden |
| Geodata                      | Yes/ no                                                                            | Yes                                                                                                                                                                                                                                                                                                                                                                             |
|                              | Open access [yes/ no]                                                              |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Status [planned/ in                                                                |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | preparation/ published]                                                            |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Note(s)                                                                            |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | If possible, specify link/<br>source                                               |                                                                                                                                                                                                                                                                                                                                                                                 |
| Scientific                   | Yes/ no                                                                            | Yes                                                                                                                                                                                                                                                                                                                                                                             |
| publication(s)               | Open access [yes/ no]                                                              | No                                                                                                                                                                                                                                                                                                                                                                              |
|                              | Status [planned/ in<br>preparation/ published]                                     | Published                                                                                                                                                                                                                                                                                                                                                                       |
|                              | Note(s)                                                                            | Cambo D H Caba alt M Carabity                                                                                                                                                                                                                                                                                                                                                   |
|                              | If possible, specify link/<br>source                                               | Syrbe, RU., Schorcht, M., Grunewald, K.,<br>Meinel, G. (2018) Indicators for a nationwide<br>monitoring of ecosystem services in<br>Germany exemplified by the mitigation of<br>soil erosion by water. Ecological Indicators<br>94. S. 46-54.                                                                                                                                   |
| Other output(s)              | Yes/ no                                                                            |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Open access [yes/ no]                                                              |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | Status [planned/ in                                                                |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | preparation/ published]                                                            |                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | proparation, pastioned                                                             |                                                                                                                                                                                                                                                                                                                                                                                 |

|                      | If possible, specify link/<br>source                                                            |                 |
|----------------------|-------------------------------------------------------------------------------------------------|-----------------|
|                      |                                                                                                 |                 |
| MAIA<br>contribution | Support through funding [yes/no]                                                                | No <sup>i</sup> |
|                      | Personalized support<br>from MAIA community<br>[yes/ no]                                        | No              |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no] | Yes             |
|                      | Support through one<br>MAIA activity (such as<br>webinars and workshops)<br>[yes/ no]           | No              |
| Notes                |                                                                                                 |                 |
| References           |                                                                                                 |                 |

| Country              |                                                                                                                                                           | Germany                                                                   |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Account type         |                                                                                                                                                           | Ecosystem service account (biophysical)                                   |
| Account code         |                                                                                                                                                           | DE_ESb_N_5                                                                |
| Funding partne       | ers                                                                                                                                                       | German Federal Agency for Nature<br>Conservation (BfN)                    |
| Other involved       | partners                                                                                                                                                  | Institute for Ecological Urban and Regional<br>Development Dresden (IOER) |
|                      | Planned/ ongoing/ done                                                                                                                                    | Done                                                                      |
| Status               | (Estimated) completion<br>date                                                                                                                            |                                                                           |
| Ecosystems           | Ecosystem types                                                                                                                                           | All ecosystems                                                            |
| Ecosystem<br>service | Ecosystem service<br>category                                                                                                                             | Regulation and maintenance                                                |
|                      | Ecosystem service                                                                                                                                         | Pollination service (by wild bees)                                        |
| Temporal             | Temporal coverage                                                                                                                                         | 2015                                                                      |
| specifics            | Frequency of updates                                                                                                                                      | 3-year (planned)                                                          |
| Spatial specifics    | Spatial scale [local, regional, national]                                                                                                                 | National                                                                  |
|                      | If sub-national, please specify area                                                                                                                      | Not applicable                                                            |
|                      | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit] | Fully spatially explicit                                                  |
|                      | If aggregated, please<br>specify administrative or<br>ecological scale                                                                                    | Not applicable                                                            |

|                                              | Spatial resolution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1 ha                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ·                                                                                                                                                                                                                                                                                                                |
| Methodology                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                  |
| General<br>description                       | The potential floral and nesting resources of ecosystem types were<br>assessed by using an adapted approach of Zulian et al. 2013.<br>Zulian, G.; Maes, J.; Paracchini, M.L. Linking Land Cover Data and Crop<br>Yields for Mapping and Assessment of Pollination Services in Europe.<br>Land 2013, 2, 472-492. https://doi.org/10.3390/land2030472                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                  |
| Specific<br>software/<br>model/ tool<br>used | ArcGISpro, PyCharm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                  |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Yes                                                                                                                                                                                                                                                                                                              |
| SEEA EA                                      | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Not applicable                                                                                                                                                                                                                                                                                                   |
| guidelines<br>Indicators used                | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                                                                                                                                                                                                                                                                                                              |
| Indicators used                              | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | The indicator shows the quality of landscape<br>regarding potential wild bee and nesting and<br>foraging possibilities and if they are well-<br>connected. The habitat quality is measured<br>on a dimensionless scale from 0 (no wild bee<br>habitat) to1 (good conditions for wild bees<br>regarding habitat). |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | No                                                                                                                                                                                                                                                                                                               |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Not applicable                                                                                                                                                                                                                                                                                                   |
| Validation                                   | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | No                                                                                                                                                                                                                                                                                                               |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Not applicable                                                                                                                                                                                                                                                                                                   |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                  |
| Data source(s)                               | <ul> <li>Zulian, G.; Maes, J.; Paracchini, M.L. Linking Land Cover Data and<br/>Crop Yields for Mapping and Assessment of Pollination Services in<br/>Europe. Land 2013, 2, 472-492.<br/><u>https://doi.org/10.3390/land2030472</u></li> <li>BKG/Bundesamt für Kartographie und Geodäsie (2019):<br/>Dokumentation. Digitales Landbedeckungsmodell für<br/>Deutschland. LBM-DE2018. Stand: 15.2.2019. BKG. Frankfurt am<br/>Main: 61 p. Version 1.</li> <li>BKG/Bundesamt für Kartographie und Geodäsie (2016): Digitales<br/>Basis-Landschaftsmodell (AAA-Modellierung). Stand der<br/>Dokumentation: 1.4.2016. BKG. Frankfurt am Main: 6 S.</li> </ul> |                                                                                                                                                                                                                                                                                                                  |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                  |
| Output(s)                                    | Vac/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Vec                                                                                                                                                                                                                                                                                                              |
| Report(s)                                    | Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Yes                                                                                                                                                                                                                                                                                                              |
|                                              | Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Yes<br>Published                                                                                                                                                                                                                                                                                                 |
|                                              | 11010(3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | L                                                                                                                                                                                                                                                                                                                |

| Accounting<br>spreadshet(s)         Yes/no         No           Status [planned/ in<br>preparation/ published]         -         -           Note(s)         -         -           If possible, specify link/<br>source         -         -           Map(s)         Yes/no         Yes           (formatted)         Open access [yes/no]         Yes           Status [planned/ in<br>preparation/ published]         Published           Note(s)         -         Published           Note(s)         -         -           If possible, specify link/<br>source         Crunewald, K, Meier, S, Syrbe, R-U, Walz, U.<br>(2021): Okosysteme Deutschlands -<br>Klassifizierung und Kartierung der<br>Ökosystemuztands und der<br>Ökosystemieistungen. Research Report for<br>the German Federal Agency for Nature<br>conservation (FKZ: 3518810400), Dresden           Geodata         Yes/no         Yes           Öpen access [yes/no]         Status [planned/ in<br>preparation/ published]           Note(s)         -         -           If possible, specify link/<br>source         Source         -           Scientific<br>publication(s)         Yes/no         Yes           Open access [yes/no]         No         -           Status [planned/ in<br>preparation/ publ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 | If possible, specify link/<br>source | Grunewald, K., Meier, S., Syrbe, RU., Walz, U.<br>(2021): Ökosysteme Deutschlands –<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Research Report for<br>the German Federal Agency for Nature<br>Conservation (FKZ: 3518810400), Dresden |
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| Status [planned/ in<br>preparation/ published]         Image: market in the image: ma     | Accounting      | Yes/ no                              |                                                                                                                                                                                                                                                                                                                                                                                 |
| preparation / published]         index           Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | spreadsheet(s)  | Open access [yes/ no]                |                                                                                                                                                                                                                                                                                                                                                                                 |
| Note(s)If possible, specify link/<br>sourceIf possible, specify link/<br>sourceYesMap(s)<br>(formatted)Yes/noYesStatus [planned/ in<br>preparation/ published]PublishedNote(s)Forsible, specify link/<br>sourceGrunewald, K., Meier, S., Syrbe, RU., Walz, U.<br>(2021): Ökosysteme Deutschlands -<br>Klassifizierung und Kartierung der<br>Ökosystemlypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemleistungen. Research Report for<br>the German Federal Agency for Nature<br>Conservation (FKZ: 3518810400), DresdenGeodataYes/noYesYes/noYesOpen access [yes/no]If possible, specify link/<br>sourceStatus [planned/ in<br>preparation/ published]Note(s)If possible, specify link/<br>sourceOpen access [yes/no]Scientific<br>publication(s)Yes/noYesOpen access [yes/no]NoStatus [planned/ in<br>preparation/ published]PublishedNote(s)YesIf possible, specify link/<br>sourcePublishedScientific<br>preparation/ published]PublishedNote(s)If possible, specify link/<br>sourceMoier, S., Walz, U., Syrbe, RU., Grunewald, K.<br>(2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung. Naturschutz und<br>Landschaftsplanung Sa(6): 12-19Other output(s)Yes/noYes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 | Status [planned/ in                  |                                                                                                                                                                                                                                                                                                                                                                                 |
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| Map(s)<br>(formatted)         Yes/no           Open access [yes/no]         Yes           Status [planned/in<br>preparation/published]         Published           Note(s)         If possible, specify link/<br>source         Grunewald, K, Meier, S, Syrbe, RU, Walz, U.<br>(2021): Ökosysteme Deutschlands -<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Research Report for<br>the German Federal Agency for Nature<br>Conservation (FKZ: 3518810400), Dresden           Geodata         Yes/no         Yes           Öpen access [yes/no]         If possible, specify link/<br>source         Status [planned/ in<br>preparation/published]           Note(s)         If possible, specify link/<br>source         Yes           Scientific<br>publication(s)         Yes/no         Yes           Scientific<br>publication(s)         Open access [yes/no]         No           Status [planned/in<br>preparation/published]         Published           Note(s)         If possible, specify link/<br>source         No           Status [planned/in<br>preparation/published]         Published           Note(s)         If possible, specify link/<br>source         Meier, S, Walz, U, Syrbe, RU, Grunewald, K.<br>(2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung. Naturschutz und<br>Landschaftsplanung 53(6): 12-19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | If possible, specify link/           |                                                                                                                                                                                                                                                                                                                                                                                 |
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| Status [planned/in<br>preparation/published]         Published           Note(s)         Grunewald, K., Meier, S., Syrbe, RU., Walz, U.<br>(2021): Ökosysteme Deutschlands –<br>Klassifizierung und Kartierung der<br>Ökosystemizung und Kartierung der<br>Ökosystemeistungen. Research Report for<br>the German Federal Agency for Nature<br>Conservation (FKZ: 3518810400), Dresden           Geodata         Yes/no         Yes           Open access [yes/ no]         Status [planned/in<br>preparation/published]         Published           Note(s)         If possible, specify link/<br>source         Status [planned/in<br>preparation/published]           Scientific<br>publication(s)         Yes/no         Yes           Open access [yes/ no]         Note(s)           If possible, specify link/<br>source         Person           Scientific<br>publication(s)         Yes/no           Open access [yes/ no]         No           Status [planned/in<br>preparation/published]         Published           Note(s)         Published           If possible, specify link/<br>source         Pees           Open access [yes/ no]         No           Note(s)         If           If possible, specify link/<br>source         Meier, S., Walz, U., Syrbe, RU., Grunewald, K.<br>(2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung. Naturschutz und<br>Landschaftsplanug S3(6): 12-19           Other output(s)         Yes/no         Mei                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 | · · ·                                |                                                                                                                                                                                                                                                                                                                                                                                 |
| preparation/published]Note(s)If possible, specify link/<br>sourceGrunewald, K., Meier, S., Syrbe, RU., Walz, U.<br>(2021): Ökosystem Deutschlands -<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemleistungen. Research Report for<br>the German Federal Agency for Nature<br>Conservation (FKZ: 3518810400), DresdenGeodataYes/noYesOpen access [yes/no]Status [planned/in<br>preparation/ published]Note(s)If possible, specify link/<br>sourceScientific<br>preparation/ published]YesOpen access [yes/no]NoStatus [planned/in<br>preparation/ published]NoNote(s)If possible, specify link/<br>sourceNoScientific<br>preparation/ published]PublishedNote(s)If possible, specify link/<br>sourceNoStatus [planned/in<br>preparation/ published]PublishedNote(s)If possible, specify link/<br>sourceNoStatus [planned/in<br>preparation/ published]PublishedNote(s)If possible, specify link/<br>sourceMeier, S., Walz, U., Syrbe, RU., Grunewald, K.<br>(2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung, Naturschutz und<br>Landschaftsplanung 53(6): 12-19Other output(s)Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | (formatted)     | Open access [yes/ no]                | Yes                                                                                                                                                                                                                                                                                                                                                                             |
| Note(s)Grunewald, K., Meier, S., Syrbe, RU., Walz, U.<br>(2021): Ökosysteme Deutschlands –<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemleistungen. Research Report for<br>the German Federal Agency for Nature<br>Conservation (FKZ: 3518810400), DresdenGeodataYes/noYesOpen access [yes/no]Status [planned/ in<br>preparation/ published]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                                      | Published                                                                                                                                                                                                                                                                                                                                                                       |
| If possible, specify link/<br>sourceGrunewald, K., Meier, S., Syrbe, RU., Walz, U.<br>(2021): Ökosystem Deutschlands –<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Research Report for<br>the German Federal Agency for Nature<br>Conservation (FKZ: 3518810400), DresdenGeodataYes/noYesOpen access [yes/no]Status [planned/ in<br>preparation/published]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                      |                                                                                                                                                                                                                                                                                                                                                                                 |
| source(2021): Ökosysteme Deutschlands –<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Research Report for<br>the German Federal Agency for Nature<br>Conservation (FKZ: 3518810400), DresdenGeodataYes/noYesDen access [yes/no]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                                      |                                                                                                                                                                                                                                                                                                                                                                                 |
| Open access [yes/ no]Image: second secon |                 |                                      | (2021): Ökosysteme Deutschlands –<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Research Report for<br>the German Federal Agency for Nature                                                                                              |
| Status [planned/ in<br>preparation/ published]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Geodata         | Yes/ no                              | Yes                                                                                                                                                                                                                                                                                                                                                                             |
| preparation/ published]Note(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 | Open access [yes/ no]                |                                                                                                                                                                                                                                                                                                                                                                                 |
| Note(s)If possible, specify link/<br>sourceIf possible, specify link/<br>sourceScientific<br>publication(s)Yes/noYesOpen access [yes/no]NoStatus [planned/ in<br>preparation/ published]PublishedNote(s)If possible, specify link/<br>sourceMeier, S., Walz, U., Syrbe, RU., Grunewald, K.<br>(2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung. Naturschutz und<br>Landschaftsplanung 53(6): 12-19Other output(s)Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 | Status [planned/ in                  |                                                                                                                                                                                                                                                                                                                                                                                 |
| If possible, specify link/<br>sourceIf possible, specify link/<br>sourceIf possible, specify link/<br>sourceScientific<br>publication(s)Yes/noYesOpen access [yes/ no]NoStatus [planned/ in<br>preparation/ published]PublishedNote(s)Note(s)If possible, specify link/<br>sourceMeier, S., Walz, U., Syrbe, RU., Grunewald, K.<br>(2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung. Naturschutz und<br>Landschaftsplanung 53(6): 12-19Other output(s)Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                                      |                                                                                                                                                                                                                                                                                                                                                                                 |
| sourcesourceScientific<br>publication(s)Yes/noOpen access [yes/no]NoStatus [planned/ in<br>preparation/ published]PublishedNote(s)Note(s)If possible, specify link/<br>sourceMeier, S., Walz, U., Syrbe, RU., Grunewald, K.<br>(2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung. Naturschutz und<br>Landschaftsplanung 53(6): 12-19Other output(s)Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 | .,                                   |                                                                                                                                                                                                                                                                                                                                                                                 |
| Scientific<br>publication(s)Yes/noYesOpen access [yes/no]NoStatus [planned/ in<br>preparation/ published]PublishedNote(s)Note(s)If possible, specify link/<br>sourceMeier, S., Walz, U., Syrbe, RU., Grunewald, K.<br>(2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung. Naturschutz und<br>Landschaftsplanung 53(6): 12-19Other output(s)Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                                      |                                                                                                                                                                                                                                                                                                                                                                                 |
| publication(s)Open access [yes/ no]NoStatus [planned/ in<br>preparation/ published]PublishedNote(s)Note(s)If possible, specify link/<br>sourceMeier, S., Walz, U., Syrbe, RU., Grunewald, K.<br>(2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung. Naturschutz und<br>Landschaftsplanung 53(6): 12-19Other output(s)Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                                      |                                                                                                                                                                                                                                                                                                                                                                                 |
| Status [planned/ in<br>preparation/ published]PublishedNote(s)Published]If possible, specify link/<br>sourceMeier, S., Walz, U., Syrbe, RU., Grunewald, K.<br>(2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung. Naturschutz und<br>Landschaftsplanung 53(6): 12-19Other output(s)Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                                      |                                                                                                                                                                                                                                                                                                                                                                                 |
| preparation/ published]Note(s)If possible, specify link/<br>sourceSourceIf possible, specify link/<br>sourceBestäubungsleistung. Naturschutz und<br>Landschaftsplanung 53(6): 12-19Other output(s)Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | publication(s)  |                                      |                                                                                                                                                                                                                                                                                                                                                                                 |
| If possible, specify link/<br>sourceMeier, S., Walz, U., Syrbe, RU., Grunewald, K.<br>(2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung. Naturschutz und<br>Landschaftsplanung 53(6): 12-19Other output(s)Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 | preparation/ published]              | Published                                                                                                                                                                                                                                                                                                                                                                       |
| source(2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung. Naturschutz und<br>Landschaftsplanung 53(6): 12-19Other output(s)Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                                      |                                                                                                                                                                                                                                                                                                                                                                                 |
| Other output(s) Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                                      | (2021): Das bundesweite Habitatpotenzial<br>für Wildbienen. Ein Indikator für die<br>Bestäubungsleistung. Naturschutz und                                                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Other output(s) | Yes/ no                              |                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 | Open access [yes/ no]                |                                                                                                                                                                                                                                                                                                                                                                                 |

|                      | Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source |                 |
|----------------------|---------------------------------------------------------------------------------------------------|-----------------|
|                      |                                                                                                   |                 |
| MAIA<br>contribution | Support through funding [yes/ no]                                                                 | No <sup>i</sup> |
|                      | Personalized support<br>from MAIA community<br>[yes/ no]                                          | No              |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no]   | Yes             |
|                      | Support through one<br>MAIA activity (such as<br>webinars and workshops)<br>[yes/ no]             | No              |
| Notes                |                                                                                                   |                 |
| References           |                                                                                                   |                 |

| Country        |                              | Germany                                     |
|----------------|------------------------------|---------------------------------------------|
| Account type   |                              | Ecosystem service account (biophysical)     |
| Account code   |                              | DE_ESb_N_6                                  |
| Funding partne | rs                           | German Federal Agency for Nature            |
|                |                              | Conservation (BfN)                          |
| Other involved | partners                     | Technical University Hannover, Hochschule   |
|                |                              | Darmstadt - University of Applied Sciences, |
|                |                              | NIT - Institut für Tourismus- und           |
|                |                              | Bäderforschung in Nordeuropa                |
| <b>6</b>       | Planned/ ongoing/ done       | Done                                        |
| Status         | (Estimated) completion       |                                             |
| _              | date                         |                                             |
| Ecosystems     | Ecosystem types              | CLC                                         |
| Ecosystem      | Ecosystem service            | cultural                                    |
| service        | category                     |                                             |
|                | Ecosystem service            | Recreation-related services                 |
| Temporal       | Temporal coverage            | 2015                                        |
| specifics      | Frequency of updates         |                                             |
| Spatial        | Spatial scale <i>[local,</i> | National                                    |
| specifics      | regional, national]          |                                             |
|                | If sub-national, please      | Not applicable                              |
|                | specify area                 |                                             |
|                | Spatial coverage [not        | Fully spatially explicit                    |
|                | spatially explicit,          |                                             |
|                | aggregated at                |                                             |
|                | administrative scale,        |                                             |

|                                              |                                                                                                                                                                                                                                                                                          | 1                                                                                             |  |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--|
|                                              | aggregated at ecological scale, fully spatially                                                                                                                                                                                                                                          |                                                                                               |  |
|                                              | explicit]                                                                                                                                                                                                                                                                                |                                                                                               |  |
|                                              | If aggregated, please                                                                                                                                                                                                                                                                    | Not applicable                                                                                |  |
|                                              | specify administrative or                                                                                                                                                                                                                                                                |                                                                                               |  |
|                                              | ecological scale                                                                                                                                                                                                                                                                         |                                                                                               |  |
|                                              | Spatial resolution                                                                                                                                                                                                                                                                       | 1 ha                                                                                          |  |
|                                              |                                                                                                                                                                                                                                                                                          |                                                                                               |  |
| Methodology                                  |                                                                                                                                                                                                                                                                                          |                                                                                               |  |
| General<br>description                       | <ul> <li>Physical measure: number of trips to experience nature to a destination.</li> <li>All areas in Germany outside settlements were seen as possible destinations.</li> <li>Frequency of visits in nature related trips to a destination were modelled depending on the:</li> </ul> |                                                                                               |  |
|                                              | - location of a destination (                                                                                                                                                                                                                                                            |                                                                                               |  |
|                                              | <ul> <li>naturalness of a destination</li> <li>hemeroby/naturalness scal</li> <li>diversity of ecosystems</li> </ul>                                                                                                                                                                     | on (naturalness of ecosystems measured on a<br>e)                                             |  |
|                                              | - uniqueness of a destinatio                                                                                                                                                                                                                                                             | n                                                                                             |  |
|                                              | - accessibility of a destination                                                                                                                                                                                                                                                         |                                                                                               |  |
|                                              | - availability of restaurants and hotels                                                                                                                                                                                                                                                 |                                                                                               |  |
|                                              | - special recreation related infrastructure.                                                                                                                                                                                                                                             |                                                                                               |  |
|                                              |                                                                                                                                                                                                                                                                                          | ure-related trips per person, the different                                                   |  |
|                                              |                                                                                                                                                                                                                                                                                          | facilities and naturalness of the chosen                                                      |  |
|                                              |                                                                                                                                                                                                                                                                                          | ed via a survey supported by a GIS analysis of                                                |  |
| 0                                            | the target destination.                                                                                                                                                                                                                                                                  |                                                                                               |  |
| Specific<br>software/                        |                                                                                                                                                                                                                                                                                          |                                                                                               |  |
| model/ tool                                  |                                                                                                                                                                                                                                                                                          |                                                                                               |  |
| used                                         |                                                                                                                                                                                                                                                                                          |                                                                                               |  |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                                                           | Yes                                                                                           |  |
| SEEA EA                                      | If partly, please specify                                                                                                                                                                                                                                                                | Not applicable                                                                                |  |
| guidelines                                   | in particity, preuse speenly                                                                                                                                                                                                                                                             |                                                                                               |  |
| Indicators used                              | Yes/ no                                                                                                                                                                                                                                                                                  | Yes                                                                                           |  |
|                                              | If yes, please specify                                                                                                                                                                                                                                                                   | Indicators for naturalness, uniqueness,<br>landscape diversity, infrastructure supply<br>etc. |  |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                                                                                  | Yes                                                                                           |  |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                                         | Up to the national level by adding up the number of trips                                     |  |
| Validation                                   | Yes/ no                                                                                                                                                                                                                                                                                  | No                                                                                            |  |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                                                                                   | Not applicable                                                                                |  |
|                                              | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                    |                                                                                               |  |
| Data source(s)                               | <ul> <li>Hermes, J.; Haaren, C. v.; Schmücker, D.; Albert, C. (2021): Nature-<br/>based recreation in Germany: Insights into volume and economic<br/>significance. In: Ecological Economics 188. DOI:</li> </ul>                                                                         |                                                                                               |  |
|                                              | 10.1016/j.ecolecon.2021.107136                                                                                                                                                                                                                                                           |                                                                                               |  |
|                                              |                                                                                                                                                                                                                                                                                          |                                                                                               |  |

| Output(s)      |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Report(s)      | Yes/ no                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | Open access [yes/ no]                           | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | Status [planned/ in preparation/ published]     | First draft available at German Federal<br>Agency for Nature Conservation, final draft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                |                                                 | in preparation (planned for End of 2022)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                | Note(s)                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                | If possible, specify link/<br>source            | Hermes, J.; Albert, C.; Schmücker, D.;<br>Barkmann, J.; Haaren, C. von (2018): Die<br>Qualität der Landschaft für Feierabend und<br>Wochenenderholung in Deutschland:<br>Potenzial, Dargebot, Präferenzen, Nutzung.<br>Endbericht zum Forschungsvorhaben<br>"Erfassung und Bewertung kultureller<br>Ökosystemleistungen in Deutschland".<br>Leibniz Universität Hannover, Institut für<br>Umweltplanung; Hochschule Darmstadt,<br>Fachbereich Gesellschaftswissenschaften;<br>NIT – Institut für Tourismus- und<br>Bäderforschung in Nordeuropa GmbH,<br>gefördert durch das Bundesamt für<br>Naturschutz mit Mitteln aus dem<br>Umweltforschungsplan. |
| Accounting     | Yes/ no                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| spreadsheet(s) | Open access [yes/ no]                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                | Status [planned/ in preparation/ published]     | Planned                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                | Note(s)                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                | If possible, specify link/<br>source            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Map(s)         | Yes/ no                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| (formatted)    | Open access [yes/ no]                           | Yes (preliminary version)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                | Status [planned/ in                             | Final version in preparation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                | preparation/ published]                         | Preliminary versions published.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                | Note(s)<br>If possible, specify link/<br>source | Preliminary version:<br>Hermes, J.; Albert, C.; & Haaren, C. v. (2020):<br>Erfassung und Bewertung der kulturellen<br>Ökosystemleistung Naherholung in<br>Deutschland. UVP-report 34 (2): 61–70.<br>DOI: 10.17442/uvp-report.034.08<br>https://www.researchgate.net/publication/<br>348930887 Erfassung und Bewertung der<br>kulturellen Okosystemleistung Naherholung                                                                                                                                                                                                                                                                                 |
|                |                                                 | <u>in Deutschland en Mapping and Assessing</u><br><u>Local Recreation as a Cultural Ecosystem</u><br><u>Service in Germany</u><br>Final version                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                 |                                                                                                        | will inter alia be published in the open<br>access German MAES-Report which will be<br>published at the end of 2022.                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Geodata         | Yes/no                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                 | Open access [yes/ no]                                                                                  | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                 | Status [planned/ in                                                                                    | Published                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | preparation/ published]<br>Note(s)                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | If possible, specify link/<br>source                                                                   | Hermes, Johannes (2020): Dataset: KOeSL-<br>Ergebnisse-Geodaten_V1., Research Data<br>Repository der Leibniz Universität<br>Hannover.<br>DOI: 10.25835/0006102                                                                                                                                                                                                                                                                                                                                                                                               |
| Scientific      | Yes/ no                                                                                                | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| publication(s)  | Open access [yes/ no]                                                                                  | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                 | Status [planned/ in preparation/ published]                                                            | Additional publication in German MAES report in preparation (planned for end of 2022)                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                 | Note(s)                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | If possible, specify link/<br>source                                                                   | Hermes, Johannes & Albert, Christian &<br>Haaren, Christina. (2021). Erfassung und<br>Bewertung der kulturellen<br>Ökosystemleistung Naherholung in<br>Deutschland ***en: Mapping and Assessing<br>Local Recreation as a Cultural Ecosystem<br>Service in Germany. 34. 61-70.<br>10.17442/uvp-report.034.08.<br>https://www.researchgate.net/publication/<br>348930887 Erfassung und Bewertung der<br>kulturellen Okosystemleistung Naherholung<br>in Deutschland en Mapping and Assessing<br>Local Recreation as a Cultural Ecosystem<br>Service in Germany |
| Other output(s) | Yes/ no                                                                                                | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                 | Open access [yes/ no]                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | Status [planned/ in                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | preparation/ published]                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | Note(s)                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | If possible, specify link/                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | source                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| MAIA            | Support through funding                                                                                | No <sup>i</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| contribution    | [yes/ no]                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | Personalized support<br>from MAIA community<br>[yes/ no]                                               | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                 | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) <i>[yes/ no]</i> | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|            | Support through one<br>MAIA activity (such as<br>webinars and workshops)<br>[yes/ no] | No |
|------------|---------------------------------------------------------------------------------------|----|
| Notes      |                                                                                       |    |
| References |                                                                                       |    |

| vice account (biophysical)                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                 |
| al Agency for Nature<br>BfN)                                                                                                    |
| ological Urban and Regional<br>Dresden (IOER), Technical<br>lin                                                                 |
|                                                                                                                                 |
|                                                                                                                                 |
| sible greenspace in 1km<br>ence (woody vegetation,<br>adow and pasture,<br>accessible greenspace, other<br>and recreation area, |
|                                                                                                                                 |
|                                                                                                                                 |
| services                                                                                                                        |
|                                                                                                                                 |
|                                                                                                                                 |
|                                                                                                                                 |
|                                                                                                                                 |
| explicit                                                                                                                        |
|                                                                                                                                 |
| l data on ecosystems), 100 x<br>data, 2km x 2 km calculation                                                                    |
|                                                                                                                                 |

| General<br>description                       | The two step physical indicator for the amenity service is a) the extent of publicly accessible greenspace in 1km radius of residence and b) the influence of this on individual well-being measured on a Likert-scale from 0 to 10 |                                                                                                                                                                                                                                                                                           |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specific<br>software/<br>model/tool<br>used  |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                           |
| Following<br>SEEA EA<br>guidelines           | Yes/ partly/no<br>If partly, please specify                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                           |
| Indicators used                              | Yes/ no                                                                                                                                                                                                                             | Yes                                                                                                                                                                                                                                                                                       |
|                                              | If yes, please specify                                                                                                                                                                                                              | The two step physical indicator for the<br>amenity service is a) the extent of publicly<br>accessible greenspace in 1km radius of<br>residence and b) the influence of this on<br>individual well-being measured on a Likert-<br>scale from 0 to 10                                       |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                             | Yes                                                                                                                                                                                                                                                                                       |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                    | National,<br>By summing up,<br>Benefits measured on the Likert Skale were<br>assumed to be interindividual comparable<br>and addable                                                                                                                                                      |
| Validation                                   | Yes/ no                                                                                                                                                                                                                             | No                                                                                                                                                                                                                                                                                        |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                              | Not applicable                                                                                                                                                                                                                                                                            |
|                                              |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                           |
| Data source(s)                               |                                                                                                                                                                                                                                     | /üstemann H. (2016): The greener, the<br>of urban land use on residential well-being.<br>rs 121: 117 – 127                                                                                                                                                                                |
|                                              |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                           |
| Output(s)                                    | · · · ·                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                           |
| Report(s)                                    | Yes/ no                                                                                                                                                                                                                             | Yes                                                                                                                                                                                                                                                                                       |
|                                              | Open access [yes/ no]                                                                                                                                                                                                               | Yes<br>First draft available at German Federal                                                                                                                                                                                                                                            |
|                                              | Status [planned/ in<br>preparation/ published]                                                                                                                                                                                      | Agency for Nature Conservation, final draft<br>in preparation.<br>Additional publication in German MAES<br>report in preparation (planned for end of<br>2022)                                                                                                                             |
|                                              | Note(s)                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                           |
|                                              | If possible, specify link/<br>source                                                                                                                                                                                                | Hirschfeld, J., Hartje, V., Pekker, R.,<br>Grunewald, K., Meier, S., Sauer, A., Syrbe, R<br>U., Zieschank, R., Schweppe-Kraft, B.<br>(2020): Integration von Ökosystemen und<br>Ökosystemleistungen in die<br>Umweltökonomische Gesamtrechnung.<br>Research Report for the German Federal |

|                |                                                                                                                  | Agency for Nature Conservation,<br>Berlin/Dresden/Bonn, unpublished.<br>("Accounting I")                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accounting     | Yes/ no                                                                                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| spreadsheet(s) | Open access [yes/ no]                                                                                            | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                | Status [planned/ in<br>preparation/ published]<br>Note(s)                                                        | November 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                | If possible, specify link/<br>source                                                                             | German Federal Agency for Nature<br>Conservation: "Research Report Accounting<br>II"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Map(s)         | Yes/ no                                                                                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| (formatted)    | Open access [yes/ no]                                                                                            | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                | Status [planned/ in<br>preparation/ published]<br>Note(s)                                                        | In preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                | If possible, specify link/<br>source                                                                             | <ul> <li>Article in "One Ecosystem", topical collection: "Monetary Valuation for Ecosystem Accounting" (Pensoft), planned for July 2022</li> <li>Will also be published in the open access German MAES-Report which will be published at the end of 2022.</li> </ul>                                                                                                                                                                                                                                                                                                                 |
| Geodata        | Yes/ no                                                                                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                | Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/ | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 0              | source                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Scientific     | Yes/no                                                                                                           | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| publication(s) | Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)                               | Yes Published / in preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                | If possible, specify link/<br>source                                                                             | Grunewald, Karsten; Hartje, Volkmar;<br>Meier, Sophie; Sauer, Axel; Schweppe-Kraft,<br>Burkhard; Syrbe, Ralf-Uwe; Zieschank,<br>Roland; Ekinci, Beyhan; Hirschfeld, Jesko:<br>National accounting of ecosystem extents<br>and services in Germany: a pilot project.<br>In: La Notte, Alessandra;<br>Grammatikopoulou, Ioanna; Grunewald,<br>Karsten; Barton, David N.; Ekinci, Beyhan<br>(Eds.): Ecosystem and ecosystem services<br>accounts: time for applications.<br>Luxembourg : Publications Office of the<br>European Union, 2021, S.34-48<br>http://dx.doi.org/10.2760/01033 |

|                 |                                                                                                 | Revised version in "One Ecosystem", topical<br>collection: "Monetary Valuation for<br>Ecosystem Accounting" (Pensoft),<br>unpublished |
|-----------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Other output(s) | Yes/ no                                                                                         | No                                                                                                                                    |
|                 | Open access [yes/ no]                                                                           |                                                                                                                                       |
|                 | Status [planned/ in preparation/ published]                                                     |                                                                                                                                       |
|                 | Note(s)                                                                                         |                                                                                                                                       |
|                 | If possible, specify link/                                                                      |                                                                                                                                       |
|                 | source                                                                                          |                                                                                                                                       |
|                 | F                                                                                               |                                                                                                                                       |
| MAIA            | Support through funding                                                                         | No <sup>i</sup>                                                                                                                       |
| contribution    | [yes/no]                                                                                        |                                                                                                                                       |
|                 | Personalized support from MAIA community [yes/ no]                                              | No                                                                                                                                    |
|                 | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no] | Yes (Workshops, joint publication efforts)                                                                                            |
|                 | Support through one MAIA<br>activity (such as webinars                                          | No                                                                                                                                    |
|                 | and workshops) [yes/ no]                                                                        |                                                                                                                                       |
| Notes           |                                                                                                 | 1                                                                                                                                     |
| References      |                                                                                                 |                                                                                                                                       |

| Country          |                             | Germany                                                                                                                                                   |  |
|------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Account type     |                             | Ecosystem service account (biophysical)                                                                                                                   |  |
| Account code     |                             | DE_ESb_N_7                                                                                                                                                |  |
| Funding partners |                             | German Federal Agency for Nature<br>Conservation (BfN)                                                                                                    |  |
| Other involved   | partners                    | Institute for Ecological Urban and Regional<br>Development Dresden (IOER)                                                                                 |  |
| Status           | Planned/ ongoing/ done      | Done: For 2012, 2015, 2018 with 2019<br>data without MAIA support<br>Ongoing: For 2012, 2015, 2018 with<br>revised 2021 data ongoing with MAIA<br>support |  |
|                  | (Estimated) completion date | July 2020<br>Revision: Spring 2023                                                                                                                        |  |
| Ecosystems       | Ecosystem types             | CLC                                                                                                                                                       |  |
|                  | Ecosystem service category  | Cultural                                                                                                                                                  |  |

| Econvetom              | Econuctom comuico                                                                                                                                                                              | Approxistion of accurator and apprice                      |  |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--|
| Ecosystem<br>service   | Ecosystem service                                                                                                                                                                              | Appreciation of ecosystem and species service <sup>2</sup> |  |
| Temporal               | Temporal coverage                                                                                                                                                                              | 2012, 2015, 2018                                           |  |
| specifics              | Frequency of updates                                                                                                                                                                           | 1 update with revised data in 2022                         |  |
| Spatial                | Spatial scale <i>[local,</i>                                                                                                                                                                   | National                                                   |  |
| specifics              | regional, national]                                                                                                                                                                            | National                                                   |  |
| specifics              | If sub-national, please                                                                                                                                                                        | Not applicable                                             |  |
|                        | specify area                                                                                                                                                                                   |                                                            |  |
|                        | Spatial coverage [not                                                                                                                                                                          | Fully spatially explicit                                   |  |
|                        | spatially explicit,                                                                                                                                                                            |                                                            |  |
|                        | aggregated at                                                                                                                                                                                  |                                                            |  |
|                        | administrative scale,                                                                                                                                                                          |                                                            |  |
|                        | aggregated at ecological                                                                                                                                                                       |                                                            |  |
|                        | scale, fully spatially explicit]                                                                                                                                                               |                                                            |  |
|                        | If aggregated, please                                                                                                                                                                          | Not applicable                                             |  |
|                        | specify administrative or                                                                                                                                                                      |                                                            |  |
|                        | ecological scale                                                                                                                                                                               |                                                            |  |
|                        | Spatial resolution                                                                                                                                                                             | 1 ha + linear elements                                     |  |
| Mothodology            |                                                                                                                                                                                                |                                                            |  |
| Methodology<br>General | Approxiation of accountant ar                                                                                                                                                                  | ad enocioe convigoe are physically measured                |  |
| description            | Appreciation of ecosystem and species services are physically measured<br>by "biotope value points" assigned to each biotope type according to the                                             |                                                            |  |
| uescription            | · · ·                                                                                                                                                                                          | • • • •                                                    |  |
|                        | Federal Compensation Ordinance. The ordinance regulates the determination of full compensation through restoration measures for                                                                |                                                            |  |
|                        | impairments of ecosystems caused by construction and other measures<br>that damage species and ecosystems. It assigns biotope values to about<br>300 (currently 1000) different biotope types. |                                                            |  |
|                        |                                                                                                                                                                                                |                                                            |  |
|                        |                                                                                                                                                                                                |                                                            |  |
|                        | Mean biotope value point per                                                                                                                                                                   | r CLC biotope type are determined with the                 |  |
|                        | help of additional information on the condition and the sub-types of CLC                                                                                                                       |                                                            |  |
|                        | ecosystems-types taken from                                                                                                                                                                    |                                                            |  |
|                        | - reporting on European Hab                                                                                                                                                                    |                                                            |  |
|                        | - reporting on the Water Fran                                                                                                                                                                  |                                                            |  |
|                        | - mapping of biotopes within conservation value                                                                                                                                                | the agricultural landscape with high nature                |  |
|                        |                                                                                                                                                                                                | tical Office on land use and the various types             |  |
|                        | of agricultural land use                                                                                                                                                                       | dical office official use and the various types            |  |
|                        | - data from the Federal Fores                                                                                                                                                                  | st Inventory                                               |  |
| Specific               |                                                                                                                                                                                                | ¥                                                          |  |
| software/              |                                                                                                                                                                                                |                                                            |  |
| model/ tool            |                                                                                                                                                                                                |                                                            |  |
| used                   |                                                                                                                                                                                                |                                                            |  |
| Following              | Yes/ partly/no                                                                                                                                                                                 | Partly                                                     |  |
| SEEA EA                | If partly, please specify                                                                                                                                                                      | No recommendations in SEEA EA.                             |  |
| guidelines             |                                                                                                                                                                                                | According to SEEA EA appreciation of                       |  |
|                        |                                                                                                                                                                                                | According to SEEA EA appreciation of                       |  |
|                        |                                                                                                                                                                                                | ecosystem and species services are not                     |  |

<sup>&</sup>lt;sup>2</sup> Appreciation of ecosystem and species services (biophysical). In terms of SEEA EA, this is a complementary account. However, it is argued that conservation issues addressed here are the focus of habitat maintenance services. If this is the case, the following account can also be considered a habitat maintenance account, which is part of the core accounts.

|                 |                                  | services in the sense of SEEA EA as there is<br>no need for transactions with ecosystems<br>in order to be served by this service. |
|-----------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                  | It is, however, also argued that nature                                                                                            |
|                 |                                  | conservation aspects, addressed here, are                                                                                          |
|                 |                                  | focus of the habitat maintenance service. In                                                                                       |
|                 |                                  | this case this account is a core account                                                                                           |
|                 |                                  | belonging to the regulation and maintenance service accounts.                                                                      |
| Indicators used | Yes/ no                          | Yes                                                                                                                                |
|                 | If yes, please specify           | Biotope value points per ecosystem type                                                                                            |
| Aggregation     | Yes/ no                          | Yes                                                                                                                                |
|                 | If yes, please specify (e.g.     | National level by addition                                                                                                         |
|                 | aggregation level and<br>method) |                                                                                                                                    |
| Validation      | Yes/ no                          |                                                                                                                                    |
| process and/    | If yes, please specify           |                                                                                                                                    |
| or uncertainty  |                                  |                                                                                                                                    |
| assessment      |                                  |                                                                                                                                    |
| Data source(s)  |                                  |                                                                                                                                    |
| Dutu source(s)  |                                  |                                                                                                                                    |
| Output(s)       |                                  |                                                                                                                                    |
| Report(s)       | Yes/ no                          | Yes                                                                                                                                |
|                 | Open access [yes/ no]            | Yes                                                                                                                                |
|                 | Status [planned/ in              | First draft of Hirschfeld et a. 2020 available                                                                                     |
|                 | preparation/ published]          | at German Federal Agency for Nature                                                                                                |
|                 |                                  | Conservation                                                                                                                       |
|                 | Note(s)                          |                                                                                                                                    |
|                 | If possible, specify link/       | Forschungsendbericht                                                                                                               |
|                 | source                           | Hirschfeld, J., Hartje, V., Pekker, R.,<br>Grunewald, K., Meier, S., Sauer, A., Syrbe,                                             |
|                 |                                  | RU., Zieschank, R., Schweppe-Kraft, B.                                                                                             |
|                 |                                  | (2020): Integration von Ökosystemen und                                                                                            |
|                 |                                  | Ökosystemleistungen in die                                                                                                         |
|                 |                                  | Umweltökonomische Gesamtrechnung.                                                                                                  |
|                 |                                  | Research Report for the German Federal                                                                                             |
|                 |                                  | Agency for Nature Conservation,                                                                                                    |
|                 |                                  | Berlin/Dresden/Bonn, unpublished<br>("Accounting I")                                                                               |
| Accounting      | Yes/ no                          | Yes                                                                                                                                |
| spreadsheet(s)  | Open access [yes/ no]            | Yes                                                                                                                                |
|                 | Status [planned/ in              | In preparation                                                                                                                     |
|                 | preparation/ published]          |                                                                                                                                    |
|                 | Note(s)                          |                                                                                                                                    |
|                 | If possible, specify link/       | German Federal Agency for Nature                                                                                                   |
|                 | source                           | Conservation: Research Report                                                                                                      |
|                 |                                  |                                                                                                                                    |
|                 | Yes/ no                          | "Accounting II"<br>Yes                                                                                                             |

| Map(s)                       | Open access [yes/ no]                     | Yes                                                                               |
|------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------|
| (formatted)                  | Status [planned/ in                       | In preparation                                                                    |
|                              | preparation/ published]                   |                                                                                   |
|                              | Note(s)                                   |                                                                                   |
|                              | If possible, specify link/                | Will be published in the open access                                              |
|                              | source                                    | German MAES-Report which will be published at the end of 2022.                    |
|                              |                                           | published at the end of 2022.                                                     |
|                              |                                           | Article in "One Ecosystem", topical                                               |
|                              |                                           | collection: "Monetary Valuation for                                               |
|                              |                                           | Ecosystem Accounting" (Pensoft), planned                                          |
| Geodata                      | Yes/ no                                   | for July 2022<br>Yes                                                              |
| Geodata                      | Open access [yes/ no]                     | No                                                                                |
|                              | Status [planned/ in                       |                                                                                   |
|                              | preparation/ published]                   |                                                                                   |
|                              | Note(s)                                   |                                                                                   |
|                              | If possible, specify link/                |                                                                                   |
|                              | source                                    |                                                                                   |
| Scientific<br>publication(s) | Yes/no                                    | Yes<br>Yes                                                                        |
| publication(3)               | Open access [yes/ no] Status [planned/ in | Published                                                                         |
|                              | preparation/ published]                   | I ublished                                                                        |
|                              | Note(s)                                   |                                                                                   |
|                              | If possible, specify link/                | Grunewald, Karsten; Hartje, Volkmar;                                              |
|                              | source                                    | Meier, Sophie; Sauer, Axel; Schweppe-                                             |
|                              |                                           | Kraft, Burkhard; Syrbe, Ralf-Uwe;<br>Zieschank, Roland; Ekinci, Beyhan;           |
|                              |                                           | Hirschfeld, Jesko                                                                 |
|                              |                                           | National accounting of ecosystem extents                                          |
|                              |                                           | and services in Germany: a pilot project                                          |
|                              |                                           | In: La Notte, Alessandra;                                                         |
|                              |                                           | Grammatikopoulou, Ioanna; Grunewald,<br>Karsten; Barton, David N.; Ekinci, Beyhan |
|                              |                                           | (Eds.): Ecosystem and ecosystem services                                          |
|                              |                                           | accounts: time for applications.                                                  |
|                              |                                           | Luxembourg : Publications Office of the                                           |
|                              |                                           | European Union, 2021, S.34-48                                                     |
|                              |                                           | http://dx.doi.org/10.2760/01033                                                   |
|                              |                                           | Grunewald, Karsten; Schweppe-Kraft,                                               |
|                              |                                           | Burkhard; Syrbe, Ralf-Uwe; Meier, Sophie;                                         |
|                              |                                           | Krüger, Tobias; Schorcht, Martin; Walz,                                           |
|                              |                                           | Ulrich<br>Hierarchical classification system of                                   |
|                              |                                           | Germany's ecosystems as basis for an                                              |
|                              |                                           | ecosystem accounting – methods and first                                          |
|                              |                                           | results                                                                           |
|                              |                                           | In: One Ecosystem 5 (2020) e50648, S.1-41                                         |
|                              |                                           | https://doi.org/10.3897/oneeco.5.e50648                                           |
|                              |                                           |                                                                                   |

|                 |                                                                                                 | Additional publication in German MAES<br>report in preparation (planned for end of<br>2022) |
|-----------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Other output(s) | Yes/ no                                                                                         |                                                                                             |
|                 | Open access [yes/ no]                                                                           |                                                                                             |
|                 | Status [planned/ in preparation/ published]                                                     |                                                                                             |
|                 | Note(s)                                                                                         |                                                                                             |
|                 | If possible, specify link/                                                                      |                                                                                             |
|                 | source                                                                                          |                                                                                             |
|                 | F                                                                                               |                                                                                             |
| MAIA            | Support through funding                                                                         | No <sup>i</sup>                                                                             |
| contribution    | [yes/ no]                                                                                       |                                                                                             |
|                 | Personalized support from MAIA community [yes/ no]                                              | No                                                                                          |
|                 | Support through more than<br>one MAIA activity (such as<br>webinars and workshops)<br>[yes/ no] | Yes (Workshops, joint publication efforts)                                                  |
|                 | Support through one MAIA activity (such as webinars and workshops) [yes/ no]                    | No                                                                                          |
| Notes           |                                                                                                 |                                                                                             |
| References      |                                                                                                 |                                                                                             |

## 6.6.4. Ecosystem service accounts (monetary)

| Country              |                                              | Germany                                                                   |
|----------------------|----------------------------------------------|---------------------------------------------------------------------------|
| Account type         |                                              | Ecosystem service account (monetary)                                      |
| Account code         |                                              | DE_ESm_N_1                                                                |
| Funding partners     |                                              | German Federal Agency for Nature<br>Conservation (BfN)                    |
| Other involved       | partners                                     | Institute for Ecological Urban and Regional<br>Development Dresden (IOER) |
|                      | Planned/ ongoing/ done                       | Done                                                                      |
| Status               | (Estimated) completion date                  |                                                                           |
| Ecosystems           | Ecosystem types                              | Cropland, meadows and pastures                                            |
| Ecosystem            | Ecosystem service category                   | Provisioning                                                              |
| service              | Ecosystem service                            | Biomass provisioning service of agricultural lands                        |
| Temporal             | Temporal coverage                            | 2012                                                                      |
| specifics            | Frequency of updates                         |                                                                           |
| Spatial<br>specifics | Spatial scale [local,<br>regional, national] | National                                                                  |
|                      | If sub-national, please specify area         |                                                                           |

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Aggregated at administrative scale                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                        | scale, fully spatially explicit]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                        | If aggregated, please<br>specify administrative or<br>ecological scale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Municipality                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                        | Spatial resolution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1 ha                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                        | -F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Methodology            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | sit data far the velative level of a minute vel                                                                                                                                                                                                                                                                                                                                                                                                          |
| General<br>description | German-wide spatially explicit data for the relative level of agricultural<br>production on different soils (Soil Quality Rating [SQR]) were used as the<br>level of biomass provisioning services of agricultural lands in physical<br>terms.<br>We used this way, for it<br>- helps to determine the service itself, independent of spatially specific<br>levels of human inputs,<br>- there is a lack of data to determine the spatially specific level of<br>agricultural production.<br>The monetary valuation was based on the correlation between the SQR<br>and the rent for agricultural land. Agricultural land rents are taken as a<br>proxy for the net profit suggested for the monetary value of provisioning<br>services by SEEA EA. |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Specific               | Existing dataset of the Germa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | an Federal Agency for Geosciences and                                                                                                                                                                                                                                                                                                                                                                                                                    |
| software/              | Natural Resources (see below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | v: Data sources)                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| model/ tool            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| used                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Following              | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Partly                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| SEEA EA<br>guidelines  | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Not sufficient spatial explicit data on actual<br>yields. Therefore, German-wide spatially<br>explicit figures for the relative level of<br>agricultural production on the different<br>soils were used instead to determine the<br>level of biomass provisioning services of<br>agricultural lands in physical terms.<br>Furthermore, yield based data would not<br>help to determine the monetary value of<br>the service because of a lack of data on |
|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | agricultural profits in Germany. Instead,<br>agricultural land rent was taken as a proxy<br>for the monetary value of the service and<br>the correlation between the relative level<br>of agricultural production and agricultural<br>land rents were used to assess the spatially<br>explicit monetary values of the service.                                                                                                                           |
| Indicators used        | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                        | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Müncheberger Soil Quality Rating (SQR), agricultural land rent                                                                                                                                                                                                                                                                                                                                                                                           |

| Aggnegation    | Vac/no                                                                                                                                                                                                                                                                                                                                                                                                                | Vec                                                                                                                                                                                                                                                                                          |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aggregation    | Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                | Yes                                                                                                                                                                                                                                                                                          |
|                | If yes, please specify (e.g.                                                                                                                                                                                                                                                                                                                                                                                          | Municipality,                                                                                                                                                                                                                                                                                |
|                | aggregation level and method)                                                                                                                                                                                                                                                                                                                                                                                         | national,                                                                                                                                                                                                                                                                                    |
| Validation     | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                               | by summing up<br>No                                                                                                                                                                                                                                                                          |
| process and/   | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                              |
| or uncertainty | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                | Not applicable                                                                                                                                                                                                                                                                               |
| assessment     |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                              |
|                |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                              |
| Data source(s) | <ul> <li>(2007) Field manual<br/>limitations of soils for<br/>https://www.zalf.de/<br/>nts/Publikation_Mue<br/>3-28.</li> <li>BGR (2013) Bundesa<br/>Ackerbauliches Ertra<br/>Bewertet nach dem M<br/>(1:1.000.000) auf Bas<br/>https://www.bgr.bun<br/>rtung/Ertragspotenti<br/>2020-3-25.</li> <li>Garvert, H. (2017): Do<br/>Deutschland –Biogast<br/>Dissertation, Institut<br/>Liebig-Universität Gie</li> </ul> | nd.de/DE/Themen/Boden/Ressourcenbewe<br>ial/Ertragspotential_node.html. Accessed on:<br>eterminanten der Pachtpreise in<br>förderung und Direktzahlungen im Fokus.<br>für Agrarpolitik und Marktforschung, Justus-<br>eßen. <u>http://geb.uni-</u><br>exte/2017/13142/pdf/GarvertHendrik_201 |
| 0.1.1()        |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                              |
| Output(s)      | Vector                                                                                                                                                                                                                                                                                                                                                                                                                | V.                                                                                                                                                                                                                                                                                           |
| Report(s)      | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                               | Yes                                                                                                                                                                                                                                                                                          |
|                | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                                                          |
|                | Status [planned/ in<br>preparation/ published]                                                                                                                                                                                                                                                                                                                                                                        | First draft available at German Federal<br>Agency for Nature Conservation, final draft<br>in preparation.<br>Additional publication in German MAES<br>report in preparation (planned for end of<br>2022)                                                                                     |
|                | Note(s)                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                              |
|                | If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                            | German Federal Agency for Nature                                                                                                                                                                                                                                                             |
|                | source                                                                                                                                                                                                                                                                                                                                                                                                                | Conservation: "Research Report<br>Accounting I"                                                                                                                                                                                                                                              |
| Accounting     | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                               | Yes                                                                                                                                                                                                                                                                                          |
| spreadsheet(s) | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                                                          |
|                | Status [planned/ in                                                                                                                                                                                                                                                                                                                                                                                                   | November 2022                                                                                                                                                                                                                                                                                |
|                | preparation/ published]                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                              |
|                | Note(s)                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                              |
|                | If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                            | German Federal Agency for Nature                                                                                                                                                                                                                                                             |
|                | source                                                                                                                                                                                                                                                                                                                                                                                                                | Conservation: "Research Report                                                                                                                                                                                                                                                               |
|                |                                                                                                                                                                                                                                                                                                                                                                                                                       | Accounting II"                                                                                                                                                                                                                                                                               |
|                | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                               | Yes                                                                                                                                                                                                                                                                                          |
|                |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                              |

| Map(s)         | Open access [yes/ no]      | Yes                                                                                  |
|----------------|----------------------------|--------------------------------------------------------------------------------------|
| (formatted)    | Status [planned/ in        | Published / planned                                                                  |
|                | preparation/ published]    | , , , , , , , , , , , , , , , , , , ,                                                |
|                | Note(s)                    |                                                                                      |
|                | If possible, specify link/ | Published:                                                                           |
|                | source                     | Grunewald, Karsten; Hartje, Volkmar;                                                 |
|                |                            | Meier, Sophie; Sauer, Axel; Schweppe-                                                |
|                |                            | Kraft, Burkhard; Syrbe, Ralf-Uwe;                                                    |
|                |                            | Zieschank, Roland; Ekinci, Beyhan;<br>Hirschfeld, Jesko                              |
|                |                            | National accounting of ecosystem extents<br>and services in Germany: a pilot project |
|                |                            | In: La Notte, Alessandra;                                                            |
|                |                            | Grammatikopoulou, Ioanna; Grunewald,                                                 |
|                |                            | Karsten; Barton, David N.; Ekinci, Beyhan                                            |
|                |                            | (Eds.): Ecosystem and ecosystem services                                             |
|                |                            | accounts: time for applications.                                                     |
|                |                            | Luxembourg : Publications Office of the<br>European Union, 2021, S.34-48             |
|                |                            | http://dx.doi.org/10.2760/01033                                                      |
|                |                            |                                                                                      |
|                |                            | Additional maps in:                                                                  |
|                |                            | Article in "One Ecosystem", topical                                                  |
|                |                            | collection: "Monetary Valuation for<br>Ecosystem Accounting" (Pensoft), planned      |
|                |                            | for July 2022                                                                        |
| Geodata        | Yes/ no                    | Yes                                                                                  |
|                | Open access [yes/ no]      | No                                                                                   |
|                | Status [planned/ in        |                                                                                      |
|                | preparation/ published]    |                                                                                      |
|                | Note(s)                    |                                                                                      |
|                | If possible, specify link/ |                                                                                      |
|                | source                     |                                                                                      |
| Scientific     | Yes/ no                    | Yes                                                                                  |
| publication(s) | Open access [yes/ no]      | Yes                                                                                  |
|                | Status [planned/ in        | Published / in preparation                                                           |
|                | preparation/ published]    |                                                                                      |
|                | Note(s)                    |                                                                                      |
|                | If possible, specify link/ | Grunewald, Karsten; Hartje, Volkmar;                                                 |
|                | source                     | Meier, Sophie; Sauer, Axel; Schweppe-<br>Kraft, Burkhard; Syrbe, Ralf-Uwe;           |
|                |                            | Zieschank, Roland; Ekinci, Beyhan;                                                   |
|                |                            | Hirschfeld, Jesko                                                                    |
|                |                            | National accounting of ecosystem extents                                             |
|                |                            | and services in Germany: a pilot project                                             |
|                |                            | In: La Notte, Alessandra;                                                            |
|                |                            | Grammatikopoulou, Ioanna; Grunewald,                                                 |
|                |                            | Karsten; Barton, David N.; Ekinci, Beyhan                                            |
|                |                            | (Eds.): Ecosystem and ecosystem services                                             |
|                |                            | accounts: time for applications.                                                     |
|                |                            | Luxembourg : Publications Office of the                                              |

|                 |                                                                                                 | European Union, 2021, S.34-48<br>http://dx.doi.org/10.2760/01033<br>Article in "One Ecosystem", topical<br>collection: "Monetary Valuation for<br>Ecosystem Accounting" (Pensoft), planned<br>for July 2022 |
|-----------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other output(s) | Yes/ no                                                                                         | No                                                                                                                                                                                                          |
|                 | Open access [yes/ no]                                                                           |                                                                                                                                                                                                             |
|                 | Status [planned/ in preparation/ published]                                                     |                                                                                                                                                                                                             |
|                 | Note(s)                                                                                         |                                                                                                                                                                                                             |
|                 | If possible, specify link/                                                                      |                                                                                                                                                                                                             |
|                 | source                                                                                          |                                                                                                                                                                                                             |
|                 |                                                                                                 |                                                                                                                                                                                                             |
| MAIA            | Support through funding                                                                         | No <sup>i</sup>                                                                                                                                                                                             |
| contribution    | [yes/ no]                                                                                       |                                                                                                                                                                                                             |
|                 | Personalized support from MAIA community [yes/ no]                                              | No                                                                                                                                                                                                          |
|                 | Support through more than<br>one MAIA activity (such as<br>webinars and workshops)<br>[yes/ no] | Yes (Workshops, joint publication efforts)                                                                                                                                                                  |
|                 | Support through one MAIA activity (such as webinars and workshops) [yes/ no]                    | No                                                                                                                                                                                                          |
| Notes           |                                                                                                 |                                                                                                                                                                                                             |
| References      |                                                                                                 |                                                                                                                                                                                                             |

| Country              |                                           | Germany                                                                   |
|----------------------|-------------------------------------------|---------------------------------------------------------------------------|
| Account type         |                                           | Ecosystem service account (monetary)                                      |
| Account code         |                                           | DE_ESm_N_2                                                                |
| Funding partners     |                                           | German Federal Agency for Nature<br>Conservation (BfN)                    |
| Other involved       | partners                                  | Institute for Ecological Urban and Regional<br>Development Dresden (IOER) |
|                      | Planned/ ongoing/ done                    | Done                                                                      |
| Status               | (Estimated) completion date               |                                                                           |
| Ecosystems           | Ecosystem types                           | All ecosystems                                                            |
| Ecosystem            | Ecosystem service category                | Regulation and maintenance                                                |
| service              | Ecosystem service                         | Global climate regulation service                                         |
| Temporal             | Temporal coverage                         | 2018                                                                      |
| specifics            | Frequency of updates                      |                                                                           |
| Spatial<br>specifics | Spatial scale [local, regional, national] | National                                                                  |

|                        |                                                                 | NY . 11 11                                                                 |
|------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------|
|                        | If sub-national, please                                         | Not applicable                                                             |
|                        | specify area<br>Spatial coverage <i>[not</i>                    | Fully spatially explicit                                                   |
|                        | spatially explicit,                                             | Tuny spatially explicit                                                    |
|                        | aggregated at                                                   |                                                                            |
|                        | administrative scale,                                           |                                                                            |
|                        | aggregated at ecological                                        |                                                                            |
|                        | scale, fully spatially explicit]                                |                                                                            |
|                        | If aggregated, please                                           | Not applicable                                                             |
|                        | specify administrative or                                       |                                                                            |
|                        | ecological scale                                                |                                                                            |
|                        | Spatial resolution                                              | 1 ha                                                                       |
| Mathadalam             |                                                                 |                                                                            |
| Methodology            | Distribute in the selected of                                   |                                                                            |
| General<br>description |                                                                 | is far as possible according to the LULUCF<br>wentory Reports under UNFCCC |
| uescription            | inclibuology for National in                                    | ventory reports under owreee                                               |
|                        | Monetary value is calculated                                    | l using a social cost approach.Cost rates per t                            |
|                        | CO2 according to                                                |                                                                            |
|                        |                                                                 | ): Methodenkonvention 3.1 zur Ermittlung                                   |
|                        | von Umweltkosten – Kosten                                       | •                                                                          |
|                        | (https://www.umweltbundesamt.de/publikationen/methodenkonventio |                                                                            |
| 0                      | <u>n-umweltkosten</u> )                                         |                                                                            |
| Specific               |                                                                 |                                                                            |
| software/              |                                                                 |                                                                            |
| model/ tool<br>used    |                                                                 |                                                                            |
| Following              | Yes/ partly/no                                                  | Yes (but had to be discussed in detail)                                    |
| SEEA EA                | If partly, please specify                                       | Not applicable                                                             |
| guidelines             | F S F S S F                                                     | rr r                                                                       |
| Indicators used        | Yes/ no                                                         | No                                                                         |
|                        | If yes, please specify                                          | Not applicable                                                             |
| Aggregation            | Yes/ no                                                         | Yes                                                                        |
|                        | If yes, please specify (e.g.                                    | National,                                                                  |
|                        | aggregation level and                                           | by summing up                                                              |
|                        | method)                                                         |                                                                            |
| Validation             | Yes/ no                                                         | No                                                                         |
| process and/           | If yes, please specify                                          | Not applicable                                                             |
| or uncertainty         |                                                                 |                                                                            |
| assessment             |                                                                 |                                                                            |
| Data source(s)         | Same as for biophysical acco                                    | hint                                                                       |
|                        |                                                                 |                                                                            |
| Output(s)              |                                                                 |                                                                            |
| Report(s)              | Yes/ no                                                         | Yes                                                                        |
|                        | Open access [yes/ no]                                           | Yes                                                                        |
|                        | Status [planned/ in                                             | In preparation                                                             |
|                        | preparation/ published]                                         | proputation                                                                |
|                        | Note(s)                                                         |                                                                            |
|                        |                                                                 |                                                                            |

|                      | If possible, specify link/                  | German Federal Agency for Nature                                                     |
|----------------------|---------------------------------------------|--------------------------------------------------------------------------------------|
|                      | source                                      | Conservation. Research Report<br>"Accounting II"                                     |
|                      |                                             | Additional publication in German MAES report in preparation (planned for end of      |
| Accounting           | Yes/ no                                     | 2022)<br>Yes                                                                         |
| spreadsheet(s)       | Open access [yes/ no]                       | Yes                                                                                  |
| spreudsneed(s)       | Status [planned/ in                         | In preparation                                                                       |
|                      | preparation/ published]                     |                                                                                      |
|                      | Note(s)                                     |                                                                                      |
|                      | If possible, specify link/<br>source        | German Federal Agency for Nature<br>Conservation: "Research Report<br>Accounting II" |
| Map(s)               | Yes/ no                                     | Yes                                                                                  |
| (formatted)          | Open access [yes/ no]                       | Yes                                                                                  |
|                      | Status [planned/ in                         | Published / planned                                                                  |
|                      | preparation/ published]                     |                                                                                      |
|                      | Note(s)                                     |                                                                                      |
|                      | If possible, specify link/                  | German Federal Agency for Nature                                                     |
|                      | source                                      | Conservation: "Research Report                                                       |
|                      |                                             | Accounting II"<br>Additional publication in German MAES                              |
|                      |                                             | report in preparation (planned for end of                                            |
|                      |                                             | 2022)                                                                                |
| Geodata              | Yes/ no                                     | Yes                                                                                  |
|                      | Open access [yes/ no]                       | No                                                                                   |
|                      | Status [planned/ in preparation/ published] |                                                                                      |
|                      | Note(s)                                     |                                                                                      |
|                      | If possible, specify link/                  |                                                                                      |
|                      | source                                      |                                                                                      |
| Scientific           | Yes/ no                                     | No                                                                                   |
| publication(s)       | Open access [yes/ no]                       |                                                                                      |
|                      | Status [planned/ in                         |                                                                                      |
|                      | preparation/published]                      |                                                                                      |
|                      | Note(s)<br>If possible, specify link/       |                                                                                      |
|                      | source                                      |                                                                                      |
| Other output(s)      | Yes/ no                                     | No                                                                                   |
| other output(3)      | Open access [yes/ no]                       |                                                                                      |
|                      | Status [planned/ in                         |                                                                                      |
|                      | preparation/ published]                     |                                                                                      |
|                      | Note(s)                                     |                                                                                      |
|                      | If possible, specify link/                  |                                                                                      |
|                      | source                                      |                                                                                      |
| DE ATA               |                                             |                                                                                      |
| MAIA<br>contribution | Support through funding                     | No <sup>i</sup>                                                                      |
|                      | [yes/ no]                                   |                                                                                      |

|            | Personalized support from MAIA community [yes/ no]                                              | No  |
|------------|-------------------------------------------------------------------------------------------------|-----|
|            | Support through more than<br>one MAIA activity (such as<br>webinars and workshops)              | Yes |
|            | [yes/ no]<br>Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no] | No  |
| Notes      |                                                                                                 |     |
| References |                                                                                                 |     |

| Country                 |                                                                                                                                                        | Germany                                                                                                                                                          |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type            |                                                                                                                                                        | Ecosystem service account (monetary)                                                                                                                             |
| Account code            |                                                                                                                                                        | DE_ESm_N_3                                                                                                                                                       |
| Funding partners        |                                                                                                                                                        | German Federal Agency for Nature<br>Conservation (BfN)                                                                                                           |
| Other involved partners |                                                                                                                                                        | Technical University Hannover,<br>Hochschule Darmstadt - University of<br>Applied Sciences, NIT - Institut für<br>Tourismus- und Bäderforschung in<br>Nordeuropa |
|                         | Planned/ ongoing/ done                                                                                                                                 | Done                                                                                                                                                             |
| Status                  | (Estimated) completion date                                                                                                                            |                                                                                                                                                                  |
| Ecosystems              | Ecosystem types                                                                                                                                        | CLC                                                                                                                                                              |
| Ecosystem               | Ecosystem service category                                                                                                                             | Cultural                                                                                                                                                         |
| service                 | Ecosystem service                                                                                                                                      | Recreation-related services                                                                                                                                      |
| Temporal                | Temporal coverage                                                                                                                                      | 2015                                                                                                                                                             |
| specifics               | Frequency of updates                                                                                                                                   |                                                                                                                                                                  |
| Spatial specifics       | Spatial scale [local, regional, national]                                                                                                              | National                                                                                                                                                         |
|                         | If sub-national, please specify area                                                                                                                   | Not applicable                                                                                                                                                   |
|                         | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially explicit] | Currently not spatially explicit,<br>Fully spatially explicit planned for 2023                                                                                   |
|                         | If aggregated, please<br>specify administrative or<br>ecological scale<br>Spatial resolution                                                           |                                                                                                                                                                  |
|                         |                                                                                                                                                        |                                                                                                                                                                  |
| Methodology             |                                                                                                                                                        |                                                                                                                                                                  |
| General<br>description  | Physical measure: number of trips to experience nature to a destination.                                                                               |                                                                                                                                                                  |

|                 | All areas in Germany outside destinations.                              | e settlements were seen as possible                                                 |  |
|-----------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|
|                 | Frequency of visits in nature depending on the:                         | related trips to a destination were modelled                                        |  |
|                 | - location of a destination (distance from residents)                   |                                                                                     |  |
|                 | - naturalness of a destination (naturalness of ecosystems measured on a |                                                                                     |  |
|                 | hemeroby/naturalness scale)                                             |                                                                                     |  |
|                 | - diversity of ecosystems                                               |                                                                                     |  |
|                 | - uniqueness of a destination                                           |                                                                                     |  |
|                 | - accessibility of a destination                                        |                                                                                     |  |
|                 | - availability of restaurants and hotels                                |                                                                                     |  |
|                 | - special recreation related in                                         |                                                                                     |  |
|                 | _                                                                       | re-related trips per person, the different accilities and naturalness of the chosen |  |
|                 |                                                                         | d via a survey supported by a GIS analysis of                                       |  |
|                 | the target destination.                                                 |                                                                                     |  |
|                 | 8                                                                       | ation-related ecosystem services was                                                |  |
|                 |                                                                         | elation between travel effort and naturalness                                       |  |
|                 |                                                                         | elation was determined by a multiple                                                |  |
|                 |                                                                         | fort and the different characteristics of the                                       |  |
|                 |                                                                         | ess, uniqueness, etc. (see above). The part of                                      |  |
|                 |                                                                         | xplained by the naturalness of a location was                                       |  |
| Specific        | interpreted as the recreation                                           |                                                                                     |  |
| software/       |                                                                         |                                                                                     |  |
| model/ tool     |                                                                         |                                                                                     |  |
| used            |                                                                         |                                                                                     |  |
| Following       | Yes/ partly/no                                                          | Yes                                                                                 |  |
| SEEA EA         | If partly, please specify                                               | Not applicable                                                                      |  |
| guidelines      |                                                                         |                                                                                     |  |
| Indicators used | Yes/ no                                                                 | Yes                                                                                 |  |
|                 | If yes, please specify                                                  | Indicators for naturalness, uniqueness,                                             |  |
|                 |                                                                         | landscape diversity, infrastructure supply                                          |  |
| Aggregation     | Vas/no                                                                  | etc.<br>Yes                                                                         |  |
| Aggregation     | Yes/no                                                                  | On the national level by adding up the                                              |  |
|                 | If yes, please specify (e.g. aggregation level and                      | monetised travel effort per trip that was                                           |  |
|                 | method)                                                                 | explained by the naturalness of the                                                 |  |
|                 |                                                                         | destination                                                                         |  |
| Validation      | Yes/ no                                                                 | No                                                                                  |  |
| process and/    | If yes, please specify                                                  | Not applicable                                                                      |  |
| or uncertainty  |                                                                         |                                                                                     |  |
| assessment      |                                                                         |                                                                                     |  |
|                 |                                                                         |                                                                                     |  |
| Data source(s)  |                                                                         | . v.; Schmücker, D.; Albert, C. (2021): Nature-                                     |  |
|                 |                                                                         | Germany: Insights into volume and economic ogical Economics 188. DOI:               |  |
|                 | 10.1016/j.ecolecon.2                                                    | -                                                                                   |  |
|                 | 10.1010/j.ccoiccoii.2                                                   |                                                                                     |  |
| Output(s)       |                                                                         |                                                                                     |  |
| Report(s)       | Yes/ no                                                                 | Yes                                                                                 |  |
| report(3)       | 100/110                                                                 | 100                                                                                 |  |

|                | Open access [yes/ no]                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | Status [planned/ in<br>preparation/ published]            | First draft available at German Federal<br>Agency for Nature Conservation, final draft<br>in preparation (planned for End of 2022)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                | Note(s)<br>If possible, specify link/<br>source           | Hermes, J.; Albert, C.; Schmücker, D.;<br>Barkmann, J.; Haaren, C. von (2018): Die<br>Qualität der Landschaft für Feierabend und<br>Wochenenderholung in Deutschland:<br>Potenzial, Dargebot, Präferenzen, Nutzung.<br>Endbericht zum Forschungsvorhaben<br>"Erfassung und Bewertung kultureller<br>Ökosystemleistungen in Deutschland".<br>Leibniz Universität Hannover, Institut für<br>Umweltplanung; Hochschule Darmstadt,<br>Fachbereich Gesellschaftswissenschaften;<br>NIT – Institut für Tourismus- und<br>Bäderforschung in Nordeuropa GmbH,<br>gefördert durch das Bundesamt für<br>Naturschutz mit Mitteln aus dem<br>Umweltforschungsplan. |
| Accounting     | Yes/ no                                                   | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| spreadsheet(s) | Open access [yes/ no]                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                | Status [planned/ in<br>preparation/ published]<br>Note(s) | Planned                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                | If possible, specify link/<br>source                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Map(s)         | Yes/ no                                                   | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| (formatted)    | Open access [yes/ no]                                     | Yes (preliminary version)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                | Status [planned/ in<br>preparation/ published]            | Final version in preparation.<br>Preliminary versions published.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                | Note(s)<br>If possible, specify link/<br>source           | Preliminary version:<br>Hermes, J.; Albert, C.; & Haaren, C. v.<br>(2020): Erfassung und Bewertung der<br>kulturellen Ökosystemleistung<br>Naherholung in Deutschland. UVP-report<br>34 (2): 61–70. DOI: 10.17442/uvp-<br>report.034.08<br>https://www.researchgate.net/publication<br>/348930887 Erfassung und Bewertung d<br>er kulturellen Okosystemleistung Naherh<br>olung in Deutschland en Mapping and As<br>sessing Local Recreation as a Cultural Ec<br>osystem Service in Germany                                                                                                                                                            |
|                |                                                           | Final version<br>will inter alia be published in the open<br>access German MAES-Report which will be<br>published at the end of 2022.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Geodata             | Yes/ no                                                                                                                                                                               | Yes                                                                     |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Geottala            |                                                                                                                                                                                       | No                                                                      |
|                     | Open access [yes/ no]                                                                                                                                                                 | NO                                                                      |
|                     | Status [planned/ in                                                                                                                                                                   |                                                                         |
|                     | preparation/ published]                                                                                                                                                               |                                                                         |
|                     | Note(s)                                                                                                                                                                               |                                                                         |
|                     | If possible, specify link/                                                                                                                                                            |                                                                         |
|                     | source                                                                                                                                                                                | V                                                                       |
| Scientific          | Yes/no                                                                                                                                                                                | Yes                                                                     |
| publication(s)      | Open access [yes/ no]                                                                                                                                                                 | Yes                                                                     |
|                     | Status [planned/ in                                                                                                                                                                   | Additional publication in German MAES                                   |
|                     | preparation/ published]                                                                                                                                                               | report in preparation (planned for end of                               |
|                     |                                                                                                                                                                                       | 2022)                                                                   |
|                     | Note(s)                                                                                                                                                                               |                                                                         |
|                     | If possible, specify link/                                                                                                                                                            | Hermes, Johannes & Albert, Christian &                                  |
|                     | source                                                                                                                                                                                | Haaren, Christina. (2021). Erfassung und                                |
|                     |                                                                                                                                                                                       | Bewertung der kulturellen                                               |
|                     |                                                                                                                                                                                       | Ökosystemleistung Naherholung in                                        |
|                     |                                                                                                                                                                                       | Deutschland ***en: Mapping and Assessing                                |
|                     |                                                                                                                                                                                       | Local Recreation as a Cultural Ecosystem                                |
|                     |                                                                                                                                                                                       | Service in Germany. 34. 61-70.                                          |
|                     |                                                                                                                                                                                       | 10.17442/uvp-report.034.08.<br>https://www.researchgate.net/publication |
|                     |                                                                                                                                                                                       | /348930887 Erfassung und Bewertung d                                    |
|                     |                                                                                                                                                                                       | er kulturellen Okosystemleistung Naherh                                 |
|                     |                                                                                                                                                                                       | olung in Deutschland en Mapping and As                                  |
|                     |                                                                                                                                                                                       | sessing Local Recreation as a Cultural Ec                               |
|                     |                                                                                                                                                                                       | osystem Service in Germany                                              |
|                     |                                                                                                                                                                                       | osystem service in definany                                             |
| Other output(s)     | Yes/ no                                                                                                                                                                               | No                                                                      |
|                     | Open access [yes/ no]                                                                                                                                                                 |                                                                         |
|                     | Status [planned/ in                                                                                                                                                                   |                                                                         |
|                     | preparation/ published]                                                                                                                                                               |                                                                         |
|                     | Note(s)                                                                                                                                                                               |                                                                         |
|                     | If possible, specify link/                                                                                                                                                            |                                                                         |
|                     | source                                                                                                                                                                                |                                                                         |
|                     |                                                                                                                                                                                       |                                                                         |
| MAIA                | Support through funding                                                                                                                                                               | No <sup>i</sup>                                                         |
| contribution        | [yes/no]                                                                                                                                                                              |                                                                         |
|                     |                                                                                                                                                                                       | No                                                                      |
|                     | Personalized support from                                                                                                                                                             | 110                                                                     |
|                     | MAIA community [yes/ no]                                                                                                                                                              |                                                                         |
|                     | MAIA community [yes/ no]<br>Support through more than                                                                                                                                 | Yes                                                                     |
|                     | MAIA community [yes/ no]<br>Support through more than<br>one MAIA activity (such as                                                                                                   |                                                                         |
|                     | MAIA community [yes/ no]<br>Support through more than                                                                                                                                 |                                                                         |
|                     | MAIA community [yes/ no]<br>Support through more than<br>one MAIA activity (such as<br>webinars and workshops)<br>[yes/ no]                                                           | Yes                                                                     |
|                     | MAIA community [yes/ no]<br>Support through more than<br>one MAIA activity (such as<br>webinars and workshops)<br>[yes/ no]<br>Support through one MAIA                               |                                                                         |
|                     | MAIA community [yes/ no]<br>Support through more than<br>one MAIA activity (such as<br>webinars and workshops)<br>[yes/ no]<br>Support through one MAIA<br>activity (such as webinars | Yes                                                                     |
|                     | MAIA community [yes/ no]<br>Support through more than<br>one MAIA activity (such as<br>webinars and workshops)<br>[yes/ no]<br>Support through one MAIA                               | Yes                                                                     |
| Notes<br>References | MAIA community [yes/ no]<br>Support through more than<br>one MAIA activity (such as<br>webinars and workshops)<br>[yes/ no]<br>Support through one MAIA<br>activity (such as webinars | Yes                                                                     |

| Country                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Germany                                                                                                                                                                                                            |  |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Account type            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Ecosystem service account (biophysical)                                                                                                                                                                            |  |
| Account code            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | DE_ESm_N_4                                                                                                                                                                                                         |  |
| Funding partners        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | German Federal Agency for Nature<br>Conservation (BfN)                                                                                                                                                             |  |
| Other involved partners |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Institute for Ecological Urban and Regional<br>Development Dresden (IOER), Technical<br>University Berlin                                                                                                          |  |
|                         | Planned/ ongoing/ done                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Done                                                                                                                                                                                                               |  |
| Status                  | (Estimated) completion date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                    |  |
| Ecosystems              | Ecosystem types                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Publicly accessible greenspace in 1km<br>radius of residence (woody vegetation,<br>woodland, meadow and pasture,<br>park/publicly accessible greenspace, other<br>sport, leisure and<br>recreation area, cemetery) |  |
| Ecosystem               | Ecosystem service category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cultural                                                                                                                                                                                                           |  |
| service                 | Ecosystem service                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Visual amenity services                                                                                                                                                                                            |  |
| Temporal                | Temporal coverage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2012                                                                                                                                                                                                               |  |
| specifics               | Frequency of updates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                    |  |
| Spatial<br>specifics    | Spatial scale [local,<br>regional, national]If sub-national, please<br>specify areaSpatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially explicit]If aggregated, please                                                                                                                                                                                                                                                                                                                                                                                                                                    | National Fully spatially explicit                                                                                                                                                                                  |  |
|                         | specify administrative or<br>ecological scale<br>Spatial resolution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.25 ha (spatial data on ecosystems), 100 x<br>100 m census data, 2km x 2 km calculation<br>grid                                                                                                                   |  |
|                         | grid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                    |  |
| Methodology             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                    |  |
| General<br>description  | The two step physical indicator for the amenity service is a) the extent of<br>publicly accessible greenspace in 1km radius of residence and b) the<br>influence of this on individual well-being measured on a Likert-scale from<br>0 to 10.<br>The individual simulated exchange value for an additional hectare of<br>green space within 1 km of residence is estimated using a multi-criteria<br>regression analysis between individual well-being and a number of<br>explanatory variables, including the area of publicly accessible green<br>space within 1 km, following the concept of Life Satisfaction Analysis<br>(Experiences Preference method). The regression analysis shows both |                                                                                                                                                                                                                    |  |

| Specific<br>software/<br>model/ tool         | the effect of additional income on well-being and the effect of additional green space on well-being. By comparing these two relationships, the effect of additional green space on well-being can be transformed into an income equivalent, which can be interpreted as a simulated price. This simulated price depends on the total supply of green space in the 1km radius and is highest when there is no accessible public green space at all and zero when the supply of green space exceeds saturation point. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| used                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Partly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SEEA EA<br>guidelines                        | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SEEA EA proposes Hedonic Pricing for the<br>valuation of visual amenities. A comparison<br>between the results of Hedonic Pricing on<br>the one hand and Life Satisfaction Analysis<br>on the other hand, both for the same<br>explanatory variable (publicly accessible<br>green spaces within a radius of 1 km),<br>showed that Hedonic Pricing seems to<br>capture only a very small part of the<br>simulated price captured by Life<br>Satisfaction Analysis. This can be explained<br>by the high market imperfections in real<br>estate markets (incomplete information,<br>high transaction costs, limited short-term<br>supply, equity preferences).<br>Therefore, the Life Satisfaction Analysis<br>was used instead, which can be interpreted<br>as a simulated exchange value method in<br>the terminology of SEEA EA. |
| Indicators used                              | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                              | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | The two step physical indicator for the<br>amenity service is a) the extent of publicly<br>accessible greenspace in 1km radius of<br>residence and b) the influence of this on<br>individual well-being measured on a<br>Likert-scale from 0 to 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Aggregation                                  | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Up to the national level,<br>by summing up.<br>Individual income (income equivalents)<br>were assumed to be inter-individually<br>comparable and addable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Validation                                   | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Data source(s)                               | <ul> <li>Krekel C., Kolbe J., Wüstemann H. (2016): The greener, the<br/>happier? The effect of urban land use on residential well-being.<br/>Ecological Economics 121: 117 – 127</li> </ul>                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                | <ul> <li>Kolbe, J., Krekel, C., Schweppe-Kraft, B. (2019): Reconciling<br/>Experienced-Preference Val-uation with Hedonic Pricing: The<br/>Case of Green Spaces. Technical University of Berlin, Lon-don<br/>School of Economics, German Federal Agency for Nature<br/>Conservation (BfN). Second Draft, 20th October 2019</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output(s)      |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                     |
| Report(s)      | Yes/ no                                                                                                                                                                                                                                                                                                                               | Yes                                                                                                                                                                                                                                                                                                                                                                                                 |
| Report(3)      | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                 |
|                | Status [planned/ in                                                                                                                                                                                                                                                                                                                   | First draft available at German Federal                                                                                                                                                                                                                                                                                                                                                             |
|                | preparation/ published]                                                                                                                                                                                                                                                                                                               | Agency for Nature Conservation, final draft<br>in preparation.<br>Additional publication in German MAES<br>report in preparation (planned for end of<br>2022)                                                                                                                                                                                                                                       |
|                | Note(s)                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                     |
|                | If possible, specify link/<br>source                                                                                                                                                                                                                                                                                                  | Hirschfeld, J., Hartje, V., Pekker, R.,<br>Grunewald, K., Meier, S., Sauer, A., Syrbe,<br>RU., Zieschank, R., Schweppe-Kraft, B.<br>(2020): Integration von Ökosystemen und<br>Ökosystemleistungen in die<br>Umweltökonomische Gesamtrechnung.<br>Research Report for the German Federal<br>Agency for Nature Conservation,<br>Berlin/Dresden/Bonn, unpublished<br>(Research Report "Accounting I") |
| Accounting     | Yes/ no                                                                                                                                                                                                                                                                                                                               | Yes                                                                                                                                                                                                                                                                                                                                                                                                 |
| spreadsheet(s) | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                 |
| ,              | Status [planned/ in<br>preparation/ published]<br>Note(s)                                                                                                                                                                                                                                                                             | November 2022                                                                                                                                                                                                                                                                                                                                                                                       |
|                | If possible, specify link/<br>source                                                                                                                                                                                                                                                                                                  | German Federal Agency for Nature<br>Conservation: "Research Report<br>Accounting II"                                                                                                                                                                                                                                                                                                                |
| Map(s)         | Yes/ no                                                                                                                                                                                                                                                                                                                               | Yes                                                                                                                                                                                                                                                                                                                                                                                                 |
| (formatted)    | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                 |
|                | Status [planned/ in<br>preparation/ published]<br>Note(s)                                                                                                                                                                                                                                                                             | In preparation                                                                                                                                                                                                                                                                                                                                                                                      |
|                | If possible, specify link/<br>source                                                                                                                                                                                                                                                                                                  | Article in "One Ecosystem", topical<br>collection: "Monetary Valuation for<br>Ecosystem Accounting" (Pensoft), planned<br>for July 2022                                                                                                                                                                                                                                                             |
|                |                                                                                                                                                                                                                                                                                                                                       | Will also be published in the open access<br>German MAES-Report which will be<br>published at the end of 2022.                                                                                                                                                                                                                                                                                      |
| Geodata        | Yes/ no                                                                                                                                                                                                                                                                                                                               | Yes                                                                                                                                                                                                                                                                                                                                                                                                 |
|                | Open access [yes/ no]                                                                                                                                                                                                                                                                                                                 | No                                                                                                                                                                                                                                                                                                                                                                                                  |

|                 | Status [planned/ in                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | preparation/ published]                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | Note(s)                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | If possible, specify link/                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | source                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Scientific      | Yes/ no                                               | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| publication(s)  | Open access [yes/ no]                                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                 | Status [planned/ in                                   | Published / in preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                 | preparation/ published]                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | Note(s)                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | If possible, specify link/<br>source                  | Grunewald, Karsten; Hartje, Volkmar;<br>Meier, Sophie; Sauer, Axel; Schweppe-<br>Kraft, Burkhard; Syrbe, Ralf-Uwe;<br>Zieschank, Roland; Ekinci, Beyhan;<br>Hirschfeld, Jesko: National accounting of<br>ecosystem extents and services in<br>Germany: a pilot project.<br>In: La Notte, Alessandra;<br>Grammatikopoulou, Ioanna; Grunewald,<br>Karsten; Barton, David N.; Ekinci, Beyhan<br>(Eds.): Ecosystem and ecosystem services<br>accounts: time for applications.<br>Luxembourg : Publications Office of the<br>European Union, 2021, S.34-48<br>http://dx.doi.org/10.2760/01033<br>Revised version in "One Ecosystem",<br>topical collection: "Monetary Valuation for<br>Ecosystem Accounting" (Pensoft), planned<br>for July 2022 |
| Other output(s) | Yes/ no                                               | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Saler Sucpucios | Open access [yes/ no]                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | Status [planned/ in                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | preparation/ published]                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | Note(s)                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | If possible, specify link/                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | source                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| MAIA            | Support through funding                               | Noi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| contribution    | Support through funding [yes/no]                      | No <sup>i</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | Personalized support from                             | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                 |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | MAIA community [yes/ no]<br>Support through more than | Yes (Workshops, joint publication efforts)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                 | one MAIA activity (such as                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | webinars and workshops)                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | [yes/no]                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | Support through one MAIA                              | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                 | activity (such as webinars                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | and workshops) [yes/ no]                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Notes           |                                                       | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                 |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| References      |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Country                |                                                                                                                                                                                                                                                                                            | Germany                                                                                                 |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Account type           |                                                                                                                                                                                                                                                                                            | Ecosystem service account (monetary)                                                                    |
| Account code           |                                                                                                                                                                                                                                                                                            | DE_ESm_N_5                                                                                              |
| Funding partners       |                                                                                                                                                                                                                                                                                            | German Federal Agency for Nature<br>Conservation (BfN)                                                  |
| Other involved         | partners                                                                                                                                                                                                                                                                                   | Institute for Ecological Urban and Regional<br>Development Dresden (IOER)                               |
|                        | Planned/ ongoing/ done                                                                                                                                                                                                                                                                     | Done: For 2012, 2015, 2018 with 2019<br>data without MAIA support<br>Ongoing: for 2012, 2015, 2018 with |
| Status                 |                                                                                                                                                                                                                                                                                            | revised 2021 data ongoing with MAIA<br>support                                                          |
|                        | (Estimated) completion date                                                                                                                                                                                                                                                                | July 2020                                                                                               |
| Ecosystems             | Ecosystem types                                                                                                                                                                                                                                                                            | CLC                                                                                                     |
| Ecosystem<br>service   | Ecosystem service category                                                                                                                                                                                                                                                                 | Cultural (regulation and maintenance)                                                                   |
|                        | Ecosystem service                                                                                                                                                                                                                                                                          | Appreciation of ecosystem and species<br>service<br>(habitat maintenance service) <sup>3</sup>          |
| Temporal               | Temporal coverage                                                                                                                                                                                                                                                                          | 2012, 2015, 2018                                                                                        |
| specifics              | Frequency of updates                                                                                                                                                                                                                                                                       | 1 update with revised data in 2022                                                                      |
| Spatial<br>specifics   | Spatial scale [local, regional, national]                                                                                                                                                                                                                                                  | National                                                                                                |
|                        | If sub-national, please specify area                                                                                                                                                                                                                                                       | Not applicable                                                                                          |
|                        | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially explicit]                                                                                                                                     | Fully spatially explicit                                                                                |
|                        | If aggregated, please<br>specify administrative or<br>ecological scale                                                                                                                                                                                                                     | Not applicable                                                                                          |
|                        | Spatial resolution                                                                                                                                                                                                                                                                         | 1 ha + linear elements                                                                                  |
|                        |                                                                                                                                                                                                                                                                                            |                                                                                                         |
| Methodology            |                                                                                                                                                                                                                                                                                            |                                                                                                         |
| General<br>description | Using the terminology of SEEA EA, the method can be interpreted as a simulated exchange value method based on social preferences revealed by public expenditures on ecosystem restoration. In addition, individual preferences resulting from Contingent Valuation were taken into account |                                                                                                         |

<sup>&</sup>lt;sup>3</sup> In terms of SEEA EA, this is a complementary account. However, it is argued that conservation issues addressed here are the focus of habitat maintenance services. If this is the case, the following account can also be considered a habitat maintenance account, which is part of the core accounts.

| 1                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                       | principles, the lower value oused.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ange values. In accordance with accounting<br>of the two (based on restoration costs) was                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                       | Cost-based method, cross-c<br>Valuation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | hecked with the results of Contingent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                       | Appreciation of ecosystem and species services are calculated as the average present value of the costs to create a biotope development with a present value of one "biotope value point".<br>The valuation of ecosystem and species services is physically measured in a first step by "biotope value points", which are assigned to each biotope type according to the Federal Compensation Ordinance. The Ordinance regulates the determination of full compensation through restoration measures for impairments to ecosystems caused by constructional and other measures that damage species and ecosystems. (For more information on the allocation of "biotope value points", see "physical account").                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                       | The average restauration costs that lead to a biotope development<br>resulting in a future biotope value development with a present value of<br>one biotope value point were calculated using the cost estimate for the<br>full implementation of NATURA 2000 (EU habitat directives) in Germany.<br>Average costs are used instead of marginal costs to reflect that public<br>decision makers tend to decide on the basis of costs and benefits of<br>"packages of measures" rather than for each individual measure.<br>The present value of the average biotope development costs per biotope<br>value point multiplied with the biotope value points allocated to an<br>ecosystem is a measure for the stock of biodiversity represented by this<br>ecosystem. The service flow is calculated as the annuity of the present<br>value (discount rate 3%, infinite calculation period). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                       | ecosystem. The service flow                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | is calculated as the annuity of the present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Specific<br>software/<br>model/ tool<br>used                          | ecosystem. The service flow                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | is calculated as the annuity of the present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| software/                                                             | ecosystem. The service flow                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | is calculated as the annuity of the present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| software/<br>model/tool<br>used<br>Following<br>SEEA EA               | ecosystem. The service flow<br>value (discount rate 3%, inf                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | is calculated as the annuity of the present inite calculation period).                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| software/<br>model/ tool<br>used<br>Following                         | ecosystem. The service flow<br>value (discount rate 3%, inf<br><u>Yes/ partly/no</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Partly         Partly         No recommendations in SEEA EA.         According to SEEA EA appreciation of ecosystem and species services are not services in the sense of SEEA EA as there is no need for transactions with ecosystems in order to be served by this service.                                                                                                                                                                                                                                               |
| software/<br>model/tool<br>used<br>Following<br>SEEA EA               | ecosystem. The service flow<br>value (discount rate 3%, inf<br><u>Yes/ partly/no</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Partly         Partly         No recommendations in SEEA EA.         According to SEEA EA appreciation of ecosystem and species services are not services in the sense of SEEA EA as there is no need for transactions with ecosystems in order to be served by this service.         It is, however, also argued that nature conservation aspects, addressed here, are focus of the habitat maintenance service. In this case this account is a core account belonging to the regulation and                               |
| software/<br>model/tool<br>used<br>Following<br>SEEA EA               | ecosystem. The service flow<br>value (discount rate 3%, inf<br><u>Yes/ partly/no</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Partly         Partly         No recommendations in SEEA EA.         According to SEEA EA appreciation of ecosystem and species services are not services in the sense of SEEA EA as there is no need for transactions with ecosystems in order to be served by this service.         It is, however, also argued that nature conservation aspects, addressed here, are focus of the habitat maintenance service. In this case this account is a core account                                                               |
| software/<br>model/tool<br>used<br>Following<br>SEEA EA<br>guidelines | ecosystem. The service flow<br>value (discount rate 3%, inf<br><u>Yes/ partly/no</u><br>If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Partly         Partly         No recommendations in SEEA EA.         According to SEEA EA appreciation of ecosystem and species services are not services in the sense of SEEA EA as there is no need for transactions with ecosystems in order to be served by this service.         It is, however, also argued that nature conservation aspects, addressed here, are focus of the habitat maintenance service. In this case this account is a core account belonging to the regulation and maintenance service accounts. |

|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method) | National level by addition                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Validation                                   | Yes/ no                                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                           | Expert knowledge                                                                                                                                                                                                                                                                                                                                                                                   |
| Data source(s)                               |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                              |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                    |
| Output(s)                                    | 1                                                                |                                                                                                                                                                                                                                                                                                                                                                                                    |
| Report(s)                                    | Yes/ no                                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                |
|                                              | Open access [yes/ no]                                            | Yes                                                                                                                                                                                                                                                                                                                                                                                                |
|                                              | Status [planned/ in preparation/ published]                      | First draft available at German Federal<br>Agency for Nature Conservation, final draft<br>in preparation                                                                                                                                                                                                                                                                                           |
|                                              | Note(s)                                                          |                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                              | If possible, specify link/<br>source                             | Grunewald, K., Meier, S., Syrbe, RU., Walz,<br>U. (2021): Ökosysteme Deutschlands.<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Leibniz-Institut für<br>ökologische Raumentwicklung e.V. (IOER),<br>Dresden. <u>http://doi.org/10.26084/45xx-<br/>rs50</u> |
|                                              |                                                                  | Hirschfeld, J., Hartje, V., Pekker, R.,<br>Grunewald, K., Meier, S., Sauer, A., Syrbe,<br>RU., Zieschank, R., Schweppe-Kraft, B.<br>(2020): Integration von Ökosystemen und<br>Ökosystemleistungen in die<br>Umweltökonomische Gesamtrechnung.<br>Research Report for the German Federal<br>Agency for Nature Conservation,<br>Berlin/Dresden/Bonn, unpublished<br>("Accounting I")                |
| Accounting                                   | Yes/ no                                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                |
| spreadsheet(s)                               | Open access [yes/ no]                                            | Yes                                                                                                                                                                                                                                                                                                                                                                                                |
|                                              | Status [planned/ in<br>preparation/ published]<br>Note(s)        | In preparation                                                                                                                                                                                                                                                                                                                                                                                     |
|                                              | If possible, specify link/<br>source                             | German Federal Agency for Nature<br>Conservation: Research Report<br>"Accounting II"                                                                                                                                                                                                                                                                                                               |
| Map(s)                                       | Yes/ no                                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                |
| (formatted)                                  | Open access [yes/ no]                                            | Yes                                                                                                                                                                                                                                                                                                                                                                                                |
|                                              | Status [planned/ in preparation/ published]                      | In preparation                                                                                                                                                                                                                                                                                                                                                                                     |
|                                              | Note(s)                                                          |                                                                                                                                                                                                                                                                                                                                                                                                    |

| Geodata         | If possible, specify link/<br>source<br>Yes/ no                                                                            | Will be published in the open access<br>German MAES-Report which will be<br>published at the end of 2022.<br>Article in "One Ecosystem", topical<br>collection: "Monetary Valuation for<br>Ecosystem Accounting" (Pensoft), planned<br>for July 2022<br>Yes                                                                                                                                                                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Scientific      | Yes/ no                                                                                                                    | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| publication(s)  | Open access [yes/ no]                                                                                                      | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | Status [planned/ in preparation/ published]                                                                                | Additional publication in German MAES<br>report in preparation (planned for end of<br>2022)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                 | Note(s)                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                 | If possible, specify link/<br>source                                                                                       | Grunewald, Karsten; Hartje, Volkmar;<br>Meier, Sophie; Sauer, Axel; Schweppe-<br>Kraft, Burkhard; Syrbe, Ralf-Uwe;<br>Zieschank, Roland; Ekinci, Beyhan;<br>Hirschfeld, Jesko<br>National accounting of ecosystem extents<br>and services in Germany: a pilot project<br>In: La Notte, Alessandra;<br>Grammatikopoulou, Ioanna; Grunewald,<br>Karsten; Barton, David N.; Ekinci, Beyhan<br>(Eds.): Ecosystem and ecosystem services<br>accounts: time for applications.<br>Luxembourg : Publications Office of the<br>European Union, 2021, S.34-48<br>http://dx.doi.org/10.2760/01033 |
| Other output(s) | Yes/ no                                                                                                                    | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | Open access [yes/ no]                                                                                                      | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | Status [planned/ in<br>preparation/ published]<br>Note(s)                                                                  | Published                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | If possible, specify link/<br>source                                                                                       | Schweppe-Kraft, B.; Ekinci, B. (German<br>Federal Agency for Nature Conservation)<br>Ecosystem and Species Appreciation –<br>Service Flow, Biodiversity Wealth and<br>Biodiversity Debt. Paper presented on the<br>27th Meeting of the London Group on<br>Environmental Accounting,<br>https://seea.un.org/sites/seea.un.org/files<br>/schweppe-kraft_ecosystem-and-species-                                                                                                                                                                                                           |

|                      |                                                                                                 | appreciation-service-flow-biodiversity-<br>wealth-and-biodiversity-debt_paper.pdf |
|----------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                      |                                                                                                 |                                                                                   |
| MAIA<br>contribution | Support through funding [yes/ no]                                                               | No <sup>i</sup>                                                                   |
|                      | Personalized support from MAIA community [yes/ no]                                              | No                                                                                |
|                      | Support through more than<br>one MAIA activity (such as<br>webinars and workshops)<br>[yes/ no] | Yes (Workshops, joint publication efforts)                                        |
|                      | Support through one MAIA activity (such as webinars and workshops) [yes/ no]                    | No                                                                                |
| Notes                |                                                                                                 |                                                                                   |
| References           |                                                                                                 |                                                                                   |

#### 6.6.5. Ecosystem asset account

Note: For the value of appreciation of ecosystem and species service / habitat maintenance service, only. Not taking all other values of ecosystems into account.

| Country                 |                                           | Germany                                                                              |
|-------------------------|-------------------------------------------|--------------------------------------------------------------------------------------|
| Account type            |                                           | Ecosystem asset account                                                              |
| Account code            |                                           | DE_EA_N_1                                                                            |
| Funding partners        |                                           | German Federal Agency for Nature<br>Conservation (BfN)                               |
| Other involved partners |                                           | Institute for Ecological Urban and Regional<br>Development Dresden (IOER)            |
|                         | Planned/ ongoing/ done                    | Done: For 2012, 2015, 2018 with 2019<br>data without MAIA support                    |
| Status                  |                                           | Ongoing: For 2012, 2015, 2018 with<br>revised 2021 data ongoing with MAIA<br>support |
|                         | (Estimated) completion date               | July 2020,<br>Revision: Spring 2023                                                  |
| Ecosystems              | Ecosystem types                           | CLC                                                                                  |
| Ecosystem               | Ecosystem service category                | Cultural                                                                             |
| service                 | Ecosystem service                         | Appreciation of ecosystem and species service                                        |
| Temporal                | Temporal coverage                         | 2012, 2015, 2018                                                                     |
| specifics               | Frequency of updates                      | 1 update with revised data in 2022                                                   |
| Spatial<br>specifics    | Spatial scale [local, regional, national] | National                                                                             |
|                         | If sub-national, please specify area      | Not applicable                                                                       |

|             | Spatial coverage [not                                                    | Fully spatially explicit                      |
|-------------|--------------------------------------------------------------------------|-----------------------------------------------|
|             | spatially explicit,                                                      |                                               |
|             | aggregated at                                                            |                                               |
|             | administrative scale,                                                    |                                               |
|             | aggregated at ecological                                                 |                                               |
|             | scale, fully spatially explicit]                                         |                                               |
|             | If aggregated, please                                                    | Not applicable                                |
|             | specify administrative or                                                |                                               |
|             | ecological scale                                                         |                                               |
|             | Spatial resolution                                                       | 1 ha + linear elements                        |
|             | · · ·                                                                    |                                               |
| Methodology |                                                                          |                                               |
| General     | Cost-based method, cross-ch                                              | ecked with the results of Contingent          |
| description | Valuation.                                                               |                                               |
| accomption  |                                                                          | nd species services are calculated as the     |
|             |                                                                          | costs to create a biotope development with a  |
|             | present value of one "biotope                                            |                                               |
|             |                                                                          | nd species services is physically measured in |
|             |                                                                          | points", which are assigned to each biotope   |
|             |                                                                          | Compensation Ordinance. The Ordinance         |
|             |                                                                          | of full compensation through restoration      |
|             | 0                                                                        |                                               |
|             | -                                                                        | ecosystems caused by constructional and       |
|             |                                                                          | species and ecosystems. (For more             |
|             |                                                                          | of "biotope value points", see "physical      |
|             | account").                                                               |                                               |
|             | The average restauration costs that lead to a biotope development        |                                               |
|             | resulting in a future biotope value development with a present value of  |                                               |
|             | one biotope value point were calculated using the cost estimate for the  |                                               |
|             | full implementation of NATURA 2000 (EU habitat directives) in Germany.   |                                               |
|             | Average costs are used instead of marginal costs to reflect that public  |                                               |
|             | decision makers tend to decide on the basis of costs and benefits of     |                                               |
|             | "packages of measures" rather than for each individual measure.          |                                               |
|             | The present value of the average biotope development costs per biotope   |                                               |
|             | value point multiplied with the biotope value points allocated to an     |                                               |
|             | ecosystem is a measure for the stock of biodiversity represented by this |                                               |
|             | ecosystem. The service flow i                                            | is calculated as the annuity of the present   |
|             | value (discount rate 3%, infinite calculation period).                   |                                               |
| Specific    |                                                                          |                                               |
| software/   |                                                                          |                                               |
| model/ tool |                                                                          |                                               |
| used        |                                                                          |                                               |
| Following   | Yes/ partly/no                                                           | Partly                                        |
| SEEA EA     | If partly, please specify                                                | Captures the present value of the             |
| guidelines  |                                                                          | appreciation of ecosystem and species         |
|             |                                                                          | services, only. Does not capture the future   |
|             |                                                                          | value of all other relevant services.         |
|             |                                                                          |                                               |
|             |                                                                          | According to SEEA EA appreciation of          |
|             |                                                                          | ecosystem and species services are not        |
|             |                                                                          | services in the sense of SEEA EA as there is  |
|             |                                                                          | no need for transactions with ecosystems      |
|             |                                                                          | in order to be served by this service.        |
|             |                                                                          |                                               |

| 1                                            |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                              |                                                                  | It is, however, also argued that nature<br>conservation aspects, addressed here, are<br>focus of the habitat maintenance service. In<br>this case this account can be seen as a<br>capital core account that captures one out<br>of different values of the future services of<br>ecosystems, here estimated as proxy by the<br>ecosystem creation and maintenance cost.                                                                                                                                                                                                                                                                                                                              |
| Indicators used                              | Yes/ no                                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                              | If yes, please specify                                           | Biotope value points per ecosystem type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Aggregation                                  | Yes/no                                                           | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 00 - 0                                       | If yes, please specify (e.g.<br>aggregation level and<br>method) | National level by addition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Validation                                   | Yes/ no                                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                           | Expert knowledge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                              |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Data source(s)                               |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                              |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Output(s)                                    |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Report(s)                                    | Yes/ no                                                          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                              | Open access [yes/ no]                                            | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                              | Status [planned/ in<br>preparation/ published]                   | First draft available at German Federal<br>Agency for Nature Conservation, final draft<br>in preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                              |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                              | Note(s)                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                              | Note(s)<br>If possible, specify link/<br>source                  | Grunewald, K., Meier, S., Syrbe, RU., Walz,<br>U. (2021): Ökosysteme Deutschlands.<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Leibniz-Institut für<br>ökologische Raumentwicklung e.V. (IOER),<br>Dresden.                                                                                                                                                                                                                                                                                                                                                  |
|                                              | If possible, specify link/                                       | U. (2021): Ökosysteme Deutschlands.<br>Klassifizierung und Kartierung der<br>Ökosystemtypen sowie Indikatoren für ein<br>bundesweites Assessment und Monitoring<br>des Ökosystemzustands und der<br>Ökosystemleistungen. Leibniz-Institut für<br>ökologische Raumentwicklung e.V. (IOER),                                                                                                                                                                                                                                                                                                                                                                                                             |
| Accounting<br>spreadsheet(s)                 | If possible, specify link/                                       | <ul> <li>U. (2021): Ökosysteme Deutschlands.</li> <li>Klassifizierung und Kartierung der</li> <li>Ökosystemtypen sowie Indikatoren für ein<br/>bundesweites Assessment und Monitoring<br/>des Ökosystemzustands und der</li> <li>Ökosystemleistungen. Leibniz-Institut für<br/>ökologische Raumentwicklung e.V. (IOER),<br/>Dresden.</li> <li>Hirschfeld, J., Hartje, V., Pekker, R.,<br/>Grunewald, K., Meier, S., Sauer, A., Syrbe,<br/>RU., Zieschank, R., Schweppe-Kraft, B.</li> <li>(2020): Integration von Ökosystemen und<br/>Ökosystemleistungen in die</li> <li>Umweltökonomische Gesamtrechnung.<br/>Research Report for the German Federal<br/>Agency for Nature Conservation,</li> </ul> |

|                 | Status [planned/ in                         | In propagation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | preparation/ published]                     | In preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                 | Note(s)                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                 | If possible, specify link/                  | German Federal Agency for Nature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                 | source                                      | Conservation Research Report "Accounting<br>II"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Map(s)          | Yes/ no                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| (formatted)     | Open access [yes/ no]                       | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | Status [planned/ in preparation/ published] | In preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                 | Note(s)                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                 | If possible, specify link/<br>source        | Will be published in the open access<br>German MAES-Report which will be<br>published at the end of 2022.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 |                                             | Article in "One Ecosystem", topical<br>collection: "Monetary Valuation for<br>Ecosystem Accounting" (Pensoft), planned<br>for July 2022                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Geodata         | Yes/ no                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | Open access [yes/ no]                       | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                 | Status [planned/ in                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                 | preparation/ published]                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                 | Note(s)                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                 | If possible, specify link/                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                 | source                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Scientific      | Yes/ no                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| publication(s)  | Open access [yes/ no]                       | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | Status [planned/ in preparation/ published] | Additional publication in German MAES<br>report in preparation (planned for end of<br>2022)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                 | Note(s)                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                 | If possible, specify link/<br>source        | Grunewald, Karsten; Hartje, Volkmar;<br>Meier, Sophie; Sauer, Axel; Schweppe-<br>Kraft, Burkhard; Syrbe, Ralf-Uwe;<br>Zieschank, Roland; Ekinci, Beyhan;<br>Hirschfeld, Jesko<br>National accounting of ecosystem extents<br>and services in Germany: a pilot project<br>In: La Notte, Alessandra;<br>Grammatikopoulou, Ioanna; Grunewald,<br>Karsten; Barton, David N.; Ekinci, Beyhan<br>(Eds.): Ecosystem and ecosystem services<br>accounts: time for applications.<br>Luxembourg : Publications Office of the<br>European Union, 2021, S.34-48<br>http://dx.doi.org/10.2760/01033 |
| Other output(s) | Yes/no                                      | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | Open access [yes/ no]                       | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | Status [planned/ in preparation/ published] | Published                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

|              | Note(s)                    |                                             |
|--------------|----------------------------|---------------------------------------------|
|              | If possible, specify link/ | Schweppe-Kraft, B.; Ekinci, B. (German      |
|              | source                     | Federal Agency for Nature Conservation)     |
|              |                            | Ecosystem and Species Appreciation –        |
|              |                            | Service Flow, Biodiversity Wealth and       |
|              |                            | Biodiversity Debt. Paper presented on the   |
|              |                            | 27th Meeting of the London Group on         |
|              |                            | Environmental Accounting,                   |
|              |                            | https://seea.un.org/sites/seea.un.org/files |
|              |                            | /schweppe-kraft_ecosystem-and-species-      |
|              |                            | appreciation-service-flow-biodiversity-     |
|              |                            | wealth-and-biodiversity-debt_paper.pdf      |
|              |                            |                                             |
| MAIA         | Support through funding    | No <sup>i</sup>                             |
| contribution | [yes/ no]                  |                                             |
|              | Personalized support from  | No                                          |
|              | MAIA community [yes/ no]   |                                             |
|              | Support through more than  | Yes (Workshops, joint publication efforts)  |
|              | one MAIA activity (such as |                                             |
|              | webinars and workshops)    |                                             |
|              | [yes/ no]                  |                                             |
|              | Support through one MAIA   | No                                          |
|              | activity (such as webinars |                                             |
|              | and workshops) [yes/ no]   |                                             |
| Notes        |                            |                                             |
| References   |                            |                                             |

## 6.7. Annex: Greece

### 6.7.1. Ecosystem extent accounts

| Country          |                                | Greece                             |
|------------------|--------------------------------|------------------------------------|
| Account type     |                                | Ecosystem extent account           |
| Account code     |                                | GR_EE_N_1                          |
| Funding partners |                                | MAIA project, University of Patras |
| Other involved   | partners                       |                                    |
|                  | Planned/ ongoing/ done         | Done                               |
|                  | (Estimated) completion date    | Not applicable                     |
|                  | (Sub-)national/                | National                           |
|                  | international                  |                                    |
| Ecosystem        | If possible, please specify    | Forests and forested areas         |
| type             | If (sub-)national, compatible  | No                                 |
| classification   | with international             |                                    |
|                  | classification (if yes, please |                                    |
|                  | specify which)                 |                                    |
| Ecosystems       | Ecosystem types                | Forests and forested areas         |
|                  | Temporal coverage              | 1945 and 2016                      |

| Tomporal                     | Eroquency of undated                     |                                                                                |
|------------------------------|------------------------------------------|--------------------------------------------------------------------------------|
| Temporal specifics           | Frequency of updates                     |                                                                                |
| Spatial                      | Spatial scale <i>[local, regional,</i>   | Regional                                                                       |
| specifics                    | national]                                | ACBIONIAI                                                                      |
| specifies                    | If sub-national, please                  | Peloponnese                                                                    |
|                              | specify area                             |                                                                                |
|                              | Spatial coverage [not                    | Fully spatially explicit                                                       |
|                              | spatially explicit, aggregated           |                                                                                |
|                              | at administrative scale,                 |                                                                                |
|                              | aggregated at ecological                 |                                                                                |
|                              | scale, fully spatially explicit]         |                                                                                |
|                              | If aggregated, please specify            | Not applicable                                                                 |
|                              | administrative or ecological scale       |                                                                                |
|                              | Spatial resolution                       | Topographical scale (~1:1000)                                                  |
|                              | Spatial resolution                       | Topographical scale (~1.1000)                                                  |
| Mothodology                  |                                          |                                                                                |
| Methodology<br>General       | Identification of formation of formation | reated areas for the max $1045 - 1201$                                         |
| description                  | via photointerpretation and fi           | rested areas for the year 1945 and 2016,                                       |
| uesci iptioli                |                                          | Liu sui veys.                                                                  |
| Specific                     | ArcGIS and QGIS                          |                                                                                |
| software/                    |                                          |                                                                                |
| ,<br>model/tool              |                                          |                                                                                |
| used                         |                                          |                                                                                |
| Following                    | Yes/ partly/no                           | Yes                                                                            |
| SEEA-EA                      | If partly, please specify                | Not applicable                                                                 |
| guidelines                   | /                                        |                                                                                |
| Validation                   | Yes/ no                                  | Yes                                                                            |
| process and/                 | If yes, please specify                   | Integrated: The data set has been                                              |
| or uncertainty<br>assessment |                                          | validated and approved by the Greek                                            |
|                              |                                          | forest service                                                                 |
| Data courco(c)               | Ministry of Environment                  | and Energy / National Cadactus                                                 |
| Data source(s)               | -                                        | and Energy / National Cadastre<br><u>es/DasikoiXartes240321/Dasikoi Xartes</u> |
|                              | Dedomena 2021.zip                        | es/Dasikulitai tes240321/Dasikulitai tes_                                      |
|                              |                                          |                                                                                |
|                              |                                          |                                                                                |
| Output(s)                    |                                          |                                                                                |
| Report(s)                    | Yes/ no                                  | Yes                                                                            |
| 1 (-)                        | Open access [yes/ no]                    | Yes                                                                            |
|                              | Status [planned/ in                      | In preparation                                                                 |
|                              | preparation/ published]                  |                                                                                |
|                              | Note(s)                                  |                                                                                |
|                              | If possible, specify link/               |                                                                                |
|                              | source                                   |                                                                                |
| Accounting                   | Yes/ no                                  | Yes                                                                            |
| spreadsheet(s)               | Open access [yes/ no]                    | Yes                                                                            |
|                              | Status [planned/ in                      | In preparation                                                                 |
|                              | preparation/ published]                  |                                                                                |
|                              | Note(s)                                  |                                                                                |
|                              |                                          |                                                                                |

|                 | If possible specify liply (          |                |
|-----------------|--------------------------------------|----------------|
|                 | If possible, specify link/<br>source |                |
| Map(s)(formatt  | Yes/ no                              | Yes            |
| ed)             | Open access [yes/ no]                | Yes            |
|                 |                                      |                |
|                 | Status [planned/ in                  | In preparation |
|                 | preparation/ published] Note(s)      |                |
|                 |                                      |                |
|                 | If possible, specify link/<br>source |                |
| Geodata         | Yes/ no                              | Yes            |
| Geouala         | ,                                    | Yes            |
|                 | Open access [yes/ no]                |                |
|                 | Status [planned/ in                  | In preparation |
|                 | preparation/ published] Note(s)      |                |
|                 |                                      |                |
|                 | If possible, specify link/<br>source |                |
| Scientific      | Yes/ no                              | Yes            |
| publication(s)  | Open access [yes/ no]                | Yes            |
| publication(3)  |                                      |                |
|                 | Status [planned/ in                  | In preparation |
|                 | preparation/ published]<br>Note(s)   |                |
|                 | If possible, specify link/           |                |
|                 | source                               |                |
| Other output(s) | Yes/ no                              | No             |
| other output(3) |                                      | 110            |
|                 | Open access [yes/ no]                | Not applicable |
|                 | Status [planned/ in                  | Not applicable |
|                 | preparation/ published]              |                |
|                 | Note(s)                              | Not applicable |
|                 | Note(s)                              | Not applicable |
|                 | If possible, specify link/           | Not applicable |
|                 | source                               |                |
|                 |                                      |                |
| MAIA            | Support through funding              | Yes            |
| contribution    | [yes/ no]                            |                |
|                 | Personalized support from            | Yes            |
|                 | MAIA community [yes/ no]             |                |
|                 | Support through more than            | Yes            |
|                 | one MAIA activity (such as           |                |
|                 | webinars and workshops)              |                |
|                 | [yes/ no]                            |                |
|                 | Support through one MAIA             | No             |
|                 | activity (such as webinars           | 110            |
|                 | and workshops) [yes/ no]             |                |
| Notes           |                                      | 1              |
| 110103          |                                      |                |
|                 |                                      |                |

| References | The outcomes are based on the current mapping data which can be<br>changed during the objection process by any interested party. |
|------------|----------------------------------------------------------------------------------------------------------------------------------|
|            | The assessment excludes areas within city and settlements limits.                                                                |

| Country                               |                                                                                                                                                                                                                                                                                                                                                      | Greece                                |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Account type                          |                                                                                                                                                                                                                                                                                                                                                      | Ecosystem extent account              |
| Account code                          |                                                                                                                                                                                                                                                                                                                                                      | GR_EE_N_2                             |
| Funding partners                      |                                                                                                                                                                                                                                                                                                                                                      | MAIA project, University of Patras    |
| Other involved                        |                                                                                                                                                                                                                                                                                                                                                      | r yr yr yr yr yr yr                   |
|                                       | Planned/ ongoing/ done                                                                                                                                                                                                                                                                                                                               | Done                                  |
| Status                                | (Estimated) completion<br>date                                                                                                                                                                                                                                                                                                                       | Not applicable                        |
|                                       | (Sub-)national/<br>international                                                                                                                                                                                                                                                                                                                     | International                         |
| Ecosystem                             | If possible, please specify                                                                                                                                                                                                                                                                                                                          | EU MAES ecosystem type classification |
| type<br>classification                | If (sub-)national,<br>compatible with<br>international classification<br>(if yes, please specify<br>which)                                                                                                                                                                                                                                           | Not applicable                        |
| Ecosystems                            | Ecosystem types                                                                                                                                                                                                                                                                                                                                      | All ecosystems                        |
| Temporal                              | Temporal coverage                                                                                                                                                                                                                                                                                                                                    | 1990 - 2018                           |
| specifics                             | Frequency of updates                                                                                                                                                                                                                                                                                                                                 | Pluri-annual                          |
| Spatial<br>specifics                  | Spatial scale [local,<br>regional, national]<br>If sub-national, please<br>specify area<br>Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]<br>If aggregated, please<br>specify administrative or<br>ecological scale<br>Spatial resolution | National<br>Not applicable            |
| Methodology<br>General<br>description | Corine Land Cover to MAES ecosystem types typology                                                                                                                                                                                                                                                                                                   |                                       |
| Specific<br>software/                 | ArcGIS and QGIS                                                                                                                                                                                                                                                                                                                                      |                                       |

| madal/taal          |                                   |                                          |
|---------------------|-----------------------------------|------------------------------------------|
| model/ tool<br>used |                                   |                                          |
| Following           | Yes/ partly/no                    | Yes                                      |
| SEEA-EA             | If partly, please specify         | Not applicable                           |
| guidelines          | If particy, please specify        | Not applicable                           |
| Validation          | Yes/ no                           | No                                       |
| process and/        | If yes, please specify            | Not applicable                           |
| or uncertainty      |                                   |                                          |
| assessment          |                                   |                                          |
|                     |                                   |                                          |
| Data                | Corine land Cover D               | atasets (1990 – 2018)                    |
| source(s)           | (https://land.coper               | nicus.eu/pan-european/corine-land-cover) |
|                     |                                   |                                          |
| Output(s)           |                                   |                                          |
| Report(s)           | Yes/ no                           | Yes                                      |
|                     | Open access [yes/ no]             | Yes                                      |
|                     | Status [planned/ in               | In preparation                           |
|                     | preparation/ published]           |                                          |
|                     | Note(s)                           |                                          |
|                     | If possible, specify link/        |                                          |
|                     | source                            |                                          |
| Accounting          | Yes/ no                           | Yes                                      |
| spreadsheet(s)      | Open access [yes/ no]             | Yes                                      |
|                     | Status [planned/ in               | In preparation                           |
|                     | preparation/ published]           |                                          |
|                     | Note(s)                           |                                          |
|                     | If possible, specify link/        |                                          |
|                     | source                            |                                          |
| Map(s)              | Yes/no                            | Yes                                      |
| (formatted)         | Open access [yes/ no]             | In preparation                           |
|                     | Status [planned/ in               |                                          |
|                     | preparation/ published] Note(s)   |                                          |
|                     | If possible, specify link/        |                                          |
|                     | source                            |                                          |
| Geodata             | Yes/no                            | Yes                                      |
| deouata             | Open access [yes/ no]             | Yes                                      |
|                     | Status [planned/ in               | In preparation                           |
|                     | preparation/ published]           |                                          |
|                     | Note(s)                           |                                          |
|                     | If possible, specify link/        |                                          |
|                     | source                            |                                          |
| Scientific          | Yes/ no                           | Yes                                      |
| publication(s)      | Open access [yes/ no]             | Yes                                      |
|                     | Status [planned/ in               | In preparation                           |
|                     |                                   | · · ·                                    |
|                     | preparation/ published]           |                                          |
|                     | preparation/published]<br>Note(s) |                                          |
|                     |                                   |                                          |

| Other                | Yes/ no                                                                                         | No             |
|----------------------|-------------------------------------------------------------------------------------------------|----------------|
| output(s)            | Open access [yes/ no]                                                                           | Not applicable |
|                      | Status [planned/ in preparation/ published]                                                     | Not applicable |
|                      | Note(s)                                                                                         | Not applicable |
|                      | If possible, specify link/<br>source                                                            | Not applicable |
|                      |                                                                                                 |                |
| MAIA<br>contribution | Support through funding [yes/ no]                                                               | Yes            |
|                      | Personalized support from MAIA community [yes/ no]                                              | Yes            |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no] | Yes            |
|                      | Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no]              | No             |
| Notes                |                                                                                                 |                |
| References           |                                                                                                 |                |

| Country                             |                                                                                                            | Greece                                                                |
|-------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Account type                        |                                                                                                            | Ecosystem extent account                                              |
| Account code                        |                                                                                                            | GR_EE_N_3                                                             |
| Funding partn                       | ers                                                                                                        | MAIA project, University of Patras                                    |
| Other involved                      | partners                                                                                                   |                                                                       |
| Chabra                              | Planned/ ongoing/ done                                                                                     | Done                                                                  |
| Status                              | (Estimated) completion date                                                                                | Not applicable                                                        |
|                                     | (Sub-)national/<br>international                                                                           | National                                                              |
| Fcosystom                           | If possible, please specify                                                                                | Freshwater (surface and groundwater)                                  |
| Ecosystem<br>type<br>classification | If (sub-)national,<br>compatible with<br>international classification<br>(if yes, please specify<br>which) | No                                                                    |
| Ecosystems                          | Ecosystem types                                                                                            | Rivers, lakes and groundwater bodies                                  |
| Temporal specifics                  | Temporal coverage                                                                                          | Two reporting WFD reporting cycles, i.e., (2009-2015) and (2016-2021) |
|                                     | Frequency of updates                                                                                       |                                                                       |
| Spatial specifics                   | Spatial scale [local, regional, national]                                                                  | Regional (Alfeios river basin, Peloponnese)                           |
|                                     | If sub-national, please specify area                                                                       | Not applicable                                                        |

|                                                          | Spatial coverage [not                                                                                                                                                                                                                                                                                                                                                                              | Fully spatially explicit                                                |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
|                                                          | spatially explicit,                                                                                                                                                                                                                                                                                                                                                                                |                                                                         |
|                                                          | aggregated at                                                                                                                                                                                                                                                                                                                                                                                      |                                                                         |
|                                                          | administrative scale,                                                                                                                                                                                                                                                                                                                                                                              |                                                                         |
|                                                          | aggregated at ecological                                                                                                                                                                                                                                                                                                                                                                           |                                                                         |
|                                                          | <i>scale, fully spatially explicit]</i><br>If aggregated, please                                                                                                                                                                                                                                                                                                                                   | Not applicable                                                          |
|                                                          | specify administrative or                                                                                                                                                                                                                                                                                                                                                                          | Not applicable                                                          |
|                                                          | ecological scale                                                                                                                                                                                                                                                                                                                                                                                   |                                                                         |
|                                                          | Spatial resolution                                                                                                                                                                                                                                                                                                                                                                                 | EEA Reference Grid Greece with cell size                                |
|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                    | 1x1km <sup>2</sup>                                                      |
|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                         |
| Methodology                                              |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                         |
| General                                                  |                                                                                                                                                                                                                                                                                                                                                                                                    | and groundwater bodies within the WFD, as                               |
| description                                              |                                                                                                                                                                                                                                                                                                                                                                                                    | hanagement plans. Additionally, (a) the                                 |
|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                    | abase for 1990, 2000, 2006, 2012, 2018, (b)                             |
|                                                          | JRC Global Surface Water, us 2020 have been used for the                                                                                                                                                                                                                                                                                                                                           | ing changes in seasonality between 1984 and water bodies identification |
| Specific                                                 | ArcGIS and QGIS                                                                                                                                                                                                                                                                                                                                                                                    | water boures identification.                                            |
| software/                                                |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                         |
| model/ tool                                              |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                         |
| used                                                     |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                         |
| Following                                                | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                     | Yes                                                                     |
| SEEA-EA                                                  | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                          | Not applicable                                                          |
| guidelines<br>Validation                                 | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                            | Yes                                                                     |
| process and/                                             | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                             | Comparison between the various used                                     |
| -                                                        | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                             | sources                                                                 |
| or uncertainty                                           |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                         |
| or uncertainty<br>assessment                             |                                                                                                                                                                                                                                                                                                                                                                                                    | sources                                                                 |
| -                                                        |                                                                                                                                                                                                                                                                                                                                                                                                    | 5001005                                                                 |
| assessment Data                                          | River basin management                                                                                                                                                                                                                                                                                                                                                                             | plans                                                                   |
| assessment                                               | • CORINE land use land cov                                                                                                                                                                                                                                                                                                                                                                         | plans                                                                   |
| assessment Data                                          | 5                                                                                                                                                                                                                                                                                                                                                                                                  | plans                                                                   |
| assessment Data source(s)                                | • CORINE land use land cov                                                                                                                                                                                                                                                                                                                                                                         | plans                                                                   |
| assessment Data source(s) Output(s)                      | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> </ul>                                                                                                                                                                                                                                                                                                                     | plans<br>er                                                             |
| assessment Data source(s)                                | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> </ul>                                                                                                                                                                                                                                                                                                                     | plans<br>er<br>Yes                                                      |
| assessment Data source(s) Output(s)                      | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> </ul>                                                                                                                                                                                                                                                                     | plans<br>er<br>Yes<br>Yes                                               |
| assessment Data source(s) Output(s)                      | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> <li>Status [planned/ in</li> </ul>                                                                                                                                                                                                                                        | plans<br>er<br>Yes                                                      |
| assessment Data source(s) Output(s)                      | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> <li>Status [planned/ in<br/>preparation/ published]</li> </ul>                                                                                                                                                                                                            | plans<br>er<br>Yes<br>Yes                                               |
| assessment Data source(s) Output(s)                      | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> <li>Status [planned/ in<br/>preparation/ published]</li> <li>Note(s)</li> </ul>                                                                                                                                                                                           | plans<br>er<br>Yes<br>Yes                                               |
| assessment Data source(s) Output(s)                      | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> <li>Status [planned/ in<br/>preparation/ published]</li> <li>Note(s)</li> <li>If possible, specify link/</li> </ul>                                                                                                                                                       | plans<br>er<br>Yes<br>Yes                                               |
| assessment Data source(s) Output(s) Report(s)            | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> <li>Status [planned/ in preparation/ published]</li> <li>Note(s)</li> <li>If possible, specify link/ source</li> </ul>                                                                                                                                                    | plans<br>er<br>Yes<br>Yes<br>In preparation                             |
| assessment Data source(s) Output(s)                      | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> <li>Status [planned/ in<br/>preparation/ published]</li> <li>Note(s)</li> <li>If possible, specify link/<br/>source</li> <li>Yes/ no</li> </ul>                                                                                                                           | plans<br>er<br>Yes<br>Yes                                               |
| assessment Data source(s) Output(s) Report(s) Accounting | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> <li>Status [planned/ in<br/>preparation/ published]</li> <li>Note(s)</li> <li>If possible, specify link/<br/>source</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> </ul>                                                                                            | plans<br>er<br>Yes<br>Yes<br>In preparation<br>Yes<br>Yes               |
| assessment Data source(s) Output(s) Report(s) Accounting | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> <li>Status [planned/ in<br/>preparation/ published]</li> <li>Note(s)</li> <li>If possible, specify link/<br/>source</li> <li>Yes/ no</li> </ul>                                                                                                                           | plans<br>er<br>Yes<br>Yes<br>In preparation<br>Yes                      |
| assessment Data source(s) Output(s) Report(s) Accounting | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> <li>Status [planned/ in<br/>preparation/ published]</li> <li>Note(s)</li> <li>If possible, specify link/<br/>source</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> <li>Status [planned/ in</li> </ul>                                                               | plans<br>er<br>Yes<br>Yes<br>In preparation<br>Yes<br>Yes               |
| assessment Data source(s) Output(s) Report(s) Accounting | <ul> <li>CORINE land use land cov</li> <li>JRC Global Surface Water</li> <li>JRC Global Surface Water</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> <li>Status [planned/ in<br/>preparation/ published]</li> <li>Note(s)</li> <li>If possible, specify link/<br/>source</li> <li>Yes/ no</li> <li>Open access [yes/ no]</li> <li>Status [planned/ in<br/>preparation/ published]</li> </ul> | plans<br>er<br>Yes<br>Yes<br>In preparation<br>Yes<br>Yes               |

| Map(s)         | Yes/ no                            | Yes                         |
|----------------|------------------------------------|-----------------------------|
| (formatted)    | Open access [yes/ no]              | Yes                         |
|                | Status [planned/ in                | In preparation              |
|                | preparation/ published]            | p. opulation                |
|                | Note(s)                            |                             |
|                | If possible, specify link/         |                             |
|                | source                             |                             |
| Geodata        | Yes/ no                            | Yes                         |
|                | Open access [yes/ no]              | Yes                         |
|                | Status [planned/ in                | In preparation              |
|                | preparation/ published]            |                             |
|                | Note(s)                            |                             |
|                | If possible, specify link/         |                             |
|                | source                             |                             |
| Scientific     | Yes/ no                            | Yes                         |
| publication(s) | Open access [yes/ no]              | Yes                         |
|                | Status [planned/ in                | In preparation              |
|                | preparation/published]             |                             |
|                | Note(s)                            | (Includes physical account) |
|                | If possible, specify link/         |                             |
|                | source                             | N.                          |
| Other          | Yes/ no                            | No                          |
| output(s)      | Open access [yes/ no]              | Not applicable              |
|                | Status [planned/ in                | Not applicable              |
|                | preparation/ published]<br>Note(s) | Not applicable              |
|                | If possible, specify link/         | Not applicable              |
|                | source                             | Not applicable              |
|                | source                             |                             |
| MAIA           | Support through funding            | Yes                         |
| contribution   | [yes/ no]                          |                             |
|                | Personalized support from          | Yes                         |
|                | MAIA community [yes/               |                             |
|                | no]                                |                             |
|                | Support through more               | Yes                         |
|                | than one MAIA activity             |                             |
|                | (such as webinars and              |                             |
|                | workshops) [yes/ no]               |                             |
|                | Support through one MAIA           | No                          |
|                | activity (such as webinars         |                             |
| Notes          | and workshops) [yes/ no]           |                             |
| References     |                                    |                             |
| References     |                                    |                             |

## 6.7.2. Ecosystem condition account

| Country               |                                                 | Greece                                         |
|-----------------------|-------------------------------------------------|------------------------------------------------|
| Account type          | <u> </u>                                        | Ecosystem condition account                    |
| Account code          |                                                 | GR_EC_1                                        |
| Funding part          |                                                 | MAIA project, University of Patras             |
| Other involv          |                                                 |                                                |
|                       | Planned/ ongoing/ done                          | Ongoing                                        |
| Status                | (Estimated) completion                          |                                                |
|                       | date                                            |                                                |
| Ecosystems            | Ecosystem types                                 | Freshwater (surface and groundwater)           |
| Temporal              | Temporal coverage                               | Two WFD reporting cycles, i.e., (2009-         |
| specifics             |                                                 | 2015) and (2016-2021)                          |
|                       | Frequency of updates                            |                                                |
| Spatial               | Spatial scale <i>[local,</i>                    | Regional                                       |
| specifics             | regional, national]                             |                                                |
|                       | If sub-national, please                         | Alfeios river basin, Western Peloponnese       |
|                       | specify area Spatial coverage [not              | Fully spatially explicit                       |
|                       | spatially explicit,                             |                                                |
|                       | aggregated at                                   |                                                |
|                       | administrative scale,                           |                                                |
|                       | aggregated at ecological                        |                                                |
|                       | scale, fully spatially                          |                                                |
|                       | explicit]                                       | NT / 1/ 11                                     |
|                       | If aggregated, please specify administrative or | Not applicable                                 |
|                       | ecological scale                                |                                                |
|                       | Spatial resolution                              | EEA Reference Grid Greece with cell size       |
|                       | - r                                             | 1x1 km <sup>2</sup>                            |
|                       |                                                 |                                                |
| Methodology           |                                                 |                                                |
| General               | Freshwater ecosystem cond                       | ition accounts are undertaken for the rivers   |
| description           |                                                 | groundwater, using the quantitative and        |
|                       |                                                 | th their assessment as reported in river basin |
| See a sifi a          | management plans for the t<br>ArcGIS            | wo WFD reporting cycles.                       |
| Specific<br>software/ | ArcGIS                                          |                                                |
| model/ tool           |                                                 |                                                |
| used                  |                                                 |                                                |
| Following             | Yes/ partly/no                                  | Yes                                            |
| SEEA-EA               | If partly, please specify                       | Not applicable                                 |
| guidelines            |                                                 |                                                |
| Indicators used       | Yes/no                                          | Yes                                            |
|                       | If yes, please specify                          | Surface waters (river and lakes):              |
|                       |                                                 | ecological status                              |
|                       |                                                 | Groundwaters: quantitative, chemical           |
| A                     | Wester                                          | and total status                               |
| Aggregation           | Yes/ no                                         | Yes                                            |

|                                              | If yes, please specify (e.g.,<br>aggregation level and<br>method) | Within the EEA Reference Grid cell (size:<br>1x1 km <sup>2</sup> ) following the worst-case status<br>classification |
|----------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Validation                                   | Yes/ no                                                           | Yes                                                                                                                  |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                            | Comparison with the WFD reports                                                                                      |
| Data arrest (a)                              | <b>D</b> : 1 ·                                                    |                                                                                                                      |
| Data source(s)                               |                                                                   | nanagement plans<br>Special Secretariat for Water                                                                    |
| Output(s)                                    |                                                                   |                                                                                                                      |
| Report(s)                                    | Yes/ no                                                           | Yes                                                                                                                  |
| Report(s)                                    |                                                                   |                                                                                                                      |
|                                              | Open access [yes/ no]                                             | In proposition                                                                                                       |
|                                              | Status [planned/ in<br>preparation/ published]<br>Note(s)         | In preparation                                                                                                       |
|                                              | If possible, specify link/                                        |                                                                                                                      |
|                                              | source                                                            |                                                                                                                      |
| Accounting                                   | Yes/ no                                                           | Yes                                                                                                                  |
| spreadsheet(s)                               | Open access [yes/ no]                                             |                                                                                                                      |
| 1 ()                                         | Status [planned/ in                                               | In preparation                                                                                                       |
|                                              | preparation/ published]<br>Note(s)                                |                                                                                                                      |
|                                              | If possible, specify link/<br>source                              |                                                                                                                      |
| Map(s)                                       | Yes/no                                                            | Yes                                                                                                                  |
| (formatted)                                  | Open access [yes/ no]                                             |                                                                                                                      |
|                                              | Status [planned/ in<br>preparation/ published]                    | In preparation                                                                                                       |
|                                              | Note(s)                                                           |                                                                                                                      |
|                                              | If possible, specify link/<br>source                              |                                                                                                                      |
| Geodata                                      | Yes/ no                                                           | Yes                                                                                                                  |
|                                              | Open access [yes/ no]                                             |                                                                                                                      |
|                                              | Status [planned/ in preparation/ published]                       | In preparation                                                                                                       |
|                                              | Note(s)                                                           |                                                                                                                      |
|                                              | If possible, specify link/                                        |                                                                                                                      |
| 0.1                                          | source                                                            |                                                                                                                      |
| Scientific                                   | Yes/no                                                            | Yes                                                                                                                  |
| publication(s)                               | Open access [yes/ no]                                             |                                                                                                                      |
|                                              | Status [planned/ in<br>preparation/ published]                    | In preparation                                                                                                       |
|                                              | Note(s)                                                           |                                                                                                                      |
|                                              | If possible, specify link/<br>source                              |                                                                                                                      |
| Other output(s)                              | Yes/ no                                                           | No                                                                                                                   |
|                                              | Open access [yes/ no]                                             | Not applicable                                                                                                       |

|                      | Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/         | Not applicable<br>Not applicable<br>Not applicable |
|----------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------|
|                      | source                                                                                          |                                                    |
|                      |                                                                                                 |                                                    |
| MAIA<br>contribution | Support through funding [yes/ no]                                                               | Yes                                                |
|                      | Personalized support from<br>MAIA community [yes/ no]                                           | Yes                                                |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no] | Yes                                                |
|                      | Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no]              | No                                                 |
| Notes                |                                                                                                 |                                                    |
| References           |                                                                                                 |                                                    |

# 6.7.3. Ecosystem service account – biophysical

| Country        |                                  | Greece                                  |
|----------------|----------------------------------|-----------------------------------------|
| Account type   |                                  | Ecosystem service account (biophysical) |
| Account code   |                                  | GR_ESb_R_1                              |
| Funding partne | rs                               | MAIA project, University of Patras      |
| Other involved | partners                         |                                         |
|                | Planned/ ongoing/ done           | Ongoing                                 |
| Status         | (Estimated) completion           |                                         |
|                | date                             |                                         |
| Ecosystems     | Ecosystem types                  |                                         |
| Ecosystem      | Ecosystem service category       | Provisional                             |
| service        | Ecosystem service                | Drinking and Irrigation water           |
| Temporal       | Temporal coverage                |                                         |
| specifics      | Frequency of updates             |                                         |
| Spatial        | Spatial scale <i>[local,</i>     | Regional                                |
| specifics      | regional, national]              |                                         |
|                | If sub-national, please          | Alfeios river basin, Water District of  |
|                | specify area                     | Western Peloponnese                     |
|                | Spatial coverage [not            | Fully spatially explicit                |
|                | spatially explicit,              |                                         |
|                | aggregated at                    |                                         |
|                | administrative scale,            |                                         |
|                | aggregated at ecological         |                                         |
|                | scale, fully spatially explicit] |                                         |

| ecological scale                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                     |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Spatial resolution         EEA Reference Grid Greece                                                                                                                                                                                                                                                                                                         | 1x1km <sup>2</sup>                                                                                                                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                     |  |
| Methodology                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                     |  |
| General                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                     |  |
| description                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                     |  |
| Specific                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                     |  |
| software/                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                     |  |
| model/ tool                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                     |  |
| used                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                     |  |
| Following     Yes/partly/no     Yes       SEEA-EA     If partly, please specify     Not applicable                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                     |  |
| SEEA-EAIf partly, please specifyNot applicableguidelines                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                     |  |
| Indicators used Yes/ no Yes                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                     |  |
| If yes, please specifyDrinking water use and supplementation                                                                                                                                                                                                                                                                                                 | ply                                                                                                                                                                                                                                 |  |
| Irrigation water use and sup                                                                                                                                                                                                                                                                                                                                 | oply                                                                                                                                                                                                                                |  |
| Aggregation Yes/no Yes                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                     |  |
| If yes, please specify (e.g. At EEA Reference Grid Gree                                                                                                                                                                                                                                                                                                      | ece cell with size                                                                                                                                                                                                                  |  |
| aggregation level and 1x1km <sup>2</sup>                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                     |  |
| method)                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                     |  |
| Validation Yes/ no Yes                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                     |  |
| process and/ or If yes, please specify Comparison with river bas                                                                                                                                                                                                                                                                                             | sin management                                                                                                                                                                                                                      |  |
| uncertainty plans                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                     |  |
| assessment                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                     |  |
| Data source(s)       • River basin management plans of two reporting 2015 and (ii) 2016-2021         • Eurostat –Water Database         • Agricultural Accounts         • WISE         • FADN Database         • Hellenic Statistical Authority         • IACS geodatabase         • Corine Land Use Land Cover         • JRC         • Global Surface Water | <ul> <li>Eurostat -Water Database</li> <li>Agricultural Accounts</li> <li>WISE</li> <li>FADN Database</li> <li>Hellenic Statistical Authority</li> <li>IACS geodatabase</li> <li>Corine Land Use Land Cover</li> <li>JRC</li> </ul> |  |
|                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                     |  |
| Output(s)                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                     |  |
| Output(s)       Report(s)     Yes/no                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                     |  |
| Report(s)Yes/ noYes                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                     |  |
|                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                     |  |
| Report(s)     Yes/ no     Yes       Open access [yes/ no]     Yes                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                     |  |

|                | If possible specify link/   |                |
|----------------|-----------------------------|----------------|
|                | If possible, specify link/  |                |
| <b>A</b>       | source                      | V              |
| Accounting     | Yes/ no                     | Yes            |
| spreadsheet(s) | Open access [yes/ no]       |                |
|                | Status [planned/ in         | In preparation |
|                | preparation/ published]     |                |
|                | Note(s)                     |                |
|                | If possible, specify link/  |                |
|                | source                      |                |
| Map(s)         | Yes/ no                     | Yes            |
| (formatted)    | Open access [yes/ no]       |                |
|                | Status [planned/ in         | In Preparation |
|                | preparation/ published]     |                |
|                | Note(s)                     |                |
|                | If possible, specify link/  |                |
|                | source                      |                |
| Geodata        | Yes/no                      | Yes            |
|                | Open access [yes/ no]       |                |
|                | Status [planned/ in         | In preparation |
|                | preparation/ published]     | in preparation |
|                | Note(s)                     |                |
|                |                             |                |
|                | If possible, specify link/  |                |
|                | source                      | V.             |
| Scientific     | Yes/ no                     | Yes            |
| publication(s) | Open access [yes/ no]       |                |
|                | Status [planned/ in         | In preparation |
|                | preparation/ published]     |                |
|                | Note(s)                     |                |
|                | If possible, specify link/  |                |
|                | source                      |                |
| Other          | Yes/ no                     | No             |
| output(s)      | Open access [yes/ no]       | Not applicable |
|                | Status [planned/ in         | Not applicable |
|                | preparation/ published]     |                |
|                | Note(s)                     | Not applicable |
|                | If possible, specify link/  | Not applicable |
|                | source                      |                |
|                |                             |                |
| MAIA           | Support through funding     | Yes            |
| contribution   | [yes/ no]                   |                |
|                | Personalized support from   | Yes            |
|                | MAIA community [yes/ no]    |                |
|                | Support through more than   | Yes            |
|                | one MAIA activity (such as  |                |
|                | one minin activity (such as |                |

|            | webinars and workshops)<br>[yes/ no] |    |
|------------|--------------------------------------|----|
|            | Support through one MAIA             | No |
|            | activity (such as webinars           |    |
|            | and workshops) <i>[yes/ no]</i>      |    |
| Notes      |                                      |    |
| References |                                      |    |

## 6.7.4. Ecosystem service account – monetary

| Account type       Ecosystem service account (monetary)         Account code       GR_ESm_R_1         Funding partners       MAIA project, University of Patras         Other involved partners       Ongoing         Status       [Estimated) completion<br>date       Ongoing         Ecosystems       Ecosystem service<br>category       Provisioning         Ecosystem service       Provisioning         Ecosystem service       Annual and summer drinking water use and<br>supply, Annual irrigation water use and<br>supply         Temporal<br>specifics       Temporal coverage       1991, 2001, 2011, 2015, 2021 for annual<br>drinking water use and supply;<br>2015, 2016, 2017, 2018 for irrigation water<br>use and supply         Spatial<br>specifics       Spatial scale [local,<br>regional, national]       Regional         If sub-national, please<br>specify area       Alfeios river basin, Peloponnese         Spatial coverage [not<br>spatial] vexplicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit       Fully spatially explicit         If aggregated, please<br>specify administrative or<br>ecological scale       Not applicable         Spatial resolution       EEA Reference Grid Greece with cell size<br>tax1km <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Country          |                                                                                                                     | Greece                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Funding partners         MAIA project, University of Patras           Other involved partners         Planned/ ongoing/ done         Ongoing           Status         Planned/ ongoing / done         Ongoing           Ecosystems         Ecosystem service<br>category         Provisioning<br>Ecosystem service           Service         Ecosystem service<br>category         Provisioning<br>Ecosystem service           Temporal<br>specifics         Temporal coverage         Innual and summer drinking water use and<br>supply           Frequency of updates         Spatial scale [local,<br>regional, national]         Regional           Specifics         Spatial coverage [not<br>specifics         Spatial coverage [not<br>spatial very explicit,<br>aggregated at<br>administrative scale,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]         Fully spatially explicit<br>fraggregated, please<br>specify area           Spatial resolution         EEA Reference Grid Greece with cell size<br>1x1km <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Account type     |                                                                                                                     | Ecosystem service account (monetary)                                          |
| Other involved partners         Planned/ ongoing/ done         Ongoing           Status         Planned/ ongoing/ done         Ongoing           Ecosystems         Ecosystem service<br>category         Provisioning<br>category           Ecosystem service         Provisioning           category         Ecosystem service           Provisioning         Provisioning           service         Ecosystem service           Provisioning         Ecosystem service           Service         Annual and summer drinking water use and<br>supply. Annual irrigation water use and<br>supply           Temporal<br>specifics         Temporal coverage           Prequency of updates         Spatial scale [local,<br>regional, national]           Frequency of updates         Spatial scale [local,<br>regional, national]           If sub-national, please<br>specify area         Alfeios river basin, Peloponnese           Spatial coverage [not<br>spatial[vexplicit],<br>aggregated at<br>administrative scale,<br>aggregated at<br>cale, fully spatially<br>explicit]         Fully spatially explicit           If aggregated, please<br>specify administrative or<br>ecological scale         Not applicable           Spatial resolution         EEA Reference Grid Greece with cell size<br>1x1km <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Account code     |                                                                                                                     | GR_ESm_R_1                                                                    |
| Status       Planned/ ongoing/ done       Ongoing         Ecosystems       Ecosystem types       Provisioning         Ecosystemservice       Ecosystem service category       Provisioning         Service       Ecosystem service       Annual and summer drinking water use and supply, Annual irrigation water use and supply         Temporal specifics       Temporal coverage       1991, 2001, 2011, 2015, 2021 for annual drinking water use and supply         Spatial specifics       Spatial scale [local, regional, national]       Regional         If sub-national, please specify area       Spatial coverage [not spatial coverage [not spatial y explicit, aggregated at ecological scale, fully spatially explicit, aggregated at ecological scale, fully spatially explicit       Fully spatially explicit         If aggregated, please specify administrative or ecological scale       Not applicable         Spatial resolution       EEA Reference Grid Greece with cell size 1x1km <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Funding partners |                                                                                                                     | MAIA project, University of Patras                                            |
| Status       (Estimated) completion<br>date         Ecosystems       Ecosystem types         Ecosystem<br>service       Ecosystem service<br>category       Provisioning         Ecosystem service       Annual and summer drinking water use and<br>supply, Annual irrigation water use and<br>supply         Temporal<br>specifics       Temporal coverage       1991, 2001, 2011, 2015, 2021 for annual<br>drinking water use and supply;<br>2015, 2016, 2017, 2018 for irrigation water<br>use and supply         Spatial<br>specifics       Spatial scale [local,<br>regional, national]       Regional         If sub-national, please<br>specificy area       Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>cadministrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]       Fully spatially explicit         If aggregated, please<br>specify administrative or<br>ecological scale       Not applicable         Spatial resolution       EEA Reference Grid Greece with cell size<br>1x1km <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Other involved   | partners                                                                                                            |                                                                               |
| dateEcosystemsEcosystem typesEcosystem<br>serviceEcosystem service<br>categoryProvisioning<br>supply, Annual and summer drinking water use and<br>supply, Annual irrigation water use and<br>supplyTemporal<br>specificsTemporal coverage1991, 2001, 2011, 2015, 2021 for annual<br>drinking water use and supply;<br>2015, 2016, 2017, 2018 for irrigation water<br>use and supplySpatial<br>specificsSpatial scale [local,<br>regional, national]Regional<br>Alfeios river basin, Peloponnese<br>specify areaSpatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative or<br>ecological scaleNot applicableIf aggregated, please<br>specify atenNot applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  | Planned/ ongoing/ done                                                                                              | Ongoing                                                                       |
| Ecosystem<br>serviceEcosystem service<br>categoryProvisioningEcosystem serviceAnnual and summer drinking water use and<br>supply, Annual irrigation water use and<br>supplyTemporal<br>specificsTemporal coverage1991, 2001, 2011, 2015, 2021 for annual<br>drinking water use and supply;<br>2015, 2016, 2017, 2018 for irrigation water<br>use and supplySpatial<br>specificsSpatial scale <i>[local,</i><br>regional, national]RegionalIf sub-national, please<br>specify areaAlfeios river basin, PeloponneseSpatial coverage [not<br>spatial coverage [not<br>spatial]y explicit,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]Fully spatially explicitIf aggregated, please<br>specify administrative or<br>ecological scaleNot applicableSpatial resolutionEEA Reference Grid Greece with cell size<br>1x1km <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Status           |                                                                                                                     |                                                                               |
| service       category         Ecosystem service       Annual and summer drinking water use and supply, Annual irrigation water use and supply         Temporal specifics       Temporal coverage       1991, 2001, 2011, 2015, 2021 for annual drinking water use and supply; 2015, 2016, 2017, 2018 for irrigation water use and supply         Spatial specifics       Frequency of updates       Regional         specifics       Spatial scale <i>[local, regional, national]</i> Regional         specifics       Spatial coverage <i>[not spatial] explicit, aggregated at administrative scale, aggregated at acological scale, fully spatially explicit</i> Fully spatially explicit         If aggregated, please specify administrative or ecological scale       Not applicable         Spatial resolution       EEA Reference Grid Greece with cell size 1x1km <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Ecosystems       | Ecosystem types                                                                                                     |                                                                               |
| Image: section of the section of th |                  | 5                                                                                                                   | Provisioning                                                                  |
| specifics       drinking water use and supply;<br>2015, 2016, 2017, 2018 for irrigation water<br>use and supply         Frequency of updates       Frequency of updates         Spatial<br>specifics       Spatial scale [local,<br>regional, national]       Regional         If sub-national, please<br>specify area       Alfeios river basin, Peloponnese         Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]       Fully spatially explicit         If aggregated, please<br>specify administrative or<br>ecological scale       Not applicable         Spatial resolution       EEA Reference Grid Greece with cell size<br>1x1km <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  | Ecosystem service                                                                                                   | supply, Annual irrigation water use and supply                                |
| Frequency of updatesSpatial<br>specificsSpatial scale [local,<br>regional, national]RegionalIf sub-national, please<br>specify areaAlfeios river basin, PeloponneseSpatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]Fully spatially explicitIf aggregated, please<br>specify administrative or<br>ecological scaleNot applicableSpatial resolutionEEA Reference Grid Greece with cell size<br>1x1km²                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -                | Temporal coverage                                                                                                   | drinking water use and supply;<br>2015, 2016, 2017, 2018 for irrigation water |
| specifics       regional, national]       Alfeios river basin, Peloponnese         specify area       Alfeios river basin, Peloponnese         Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]       Fully spatially explicit         If aggregated, please<br>specify administrative or<br>ecological scale       Not applicable         Spatial resolution       EEA Reference Grid Greece with cell size<br>1x1km <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  | Frequency of updates                                                                                                |                                                                               |
| If sub-national, please<br>specify areaAlfeios river basin, PeloponneseSpatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]Fully spatially explicitIf aggregated at ecological<br>scale, fully spatially<br>explicit]Not applicableIf aggregated, please<br>specify administrative or<br>ecological scaleNot applicableSpatial resolutionEEA Reference Grid Greece with cell size<br>1x1km²                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Spatial          | Spatial scale <i>[local,</i>                                                                                        | Regional                                                                      |
| specify area       Spatial coverage [not         Spatial coverage [not       Fully spatially explicit         spatially explicit,       aggregated at         administrative scale,       aggregated at ecological         scale, fully spatially       explicit]         If aggregated, please       Not applicable         specify administrative or       ecological scale         Spatial resolution       EEA Reference Grid Greece with cell size         1x1km <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | specifics        |                                                                                                                     |                                                                               |
| spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]Not applicableIf aggregated, please<br>specify administrative or<br>ecological scaleNot applicableSpatial resolutionEEA Reference Grid Greece with cell size<br>1x1km²                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  | specify area                                                                                                        |                                                                               |
| If aggregated, please<br>specify administrative or<br>ecological scaleNot applicableSpatial resolutionEEA Reference Grid Greece with cell size<br>1x1km2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  | spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially | Fully spatially explicit                                                      |
| 1x1km <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  | If aggregated, please specify administrative or                                                                     |                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                  | Spatial resolution                                                                                                  |                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                  |                                                                                                                     |                                                                               |
| Methodology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Methodology      |                                                                                                                     |                                                                               |

| General               | Valuation of drinking wate                                                                                                                           | r use and supply based on cost of production                 |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| description           | Valuation of drinking water use and supply based on cost of production,<br>Valuation of irrigation water use and supply based on (I) standard output |                                                              |
| uesenpuen             | of crops, (ii)net return to water and (iii) cost of production                                                                                       |                                                              |
| Specific              | ArcGIS                                                                                                                                               |                                                              |
| software/             | AICOIS                                                                                                                                               |                                                              |
| model/ tool           |                                                                                                                                                      |                                                              |
| used                  |                                                                                                                                                      |                                                              |
| Following             | Yes/ partly/no                                                                                                                                       | Yes                                                          |
| SEEA-EA               | If partly, please specify                                                                                                                            | Not applicable                                               |
| guidelines            |                                                                                                                                                      |                                                              |
| Indicators used       | Yes/ no                                                                                                                                              | Yes                                                          |
|                       | If yes, please specify                                                                                                                               | Value of drinking water use and supply                       |
|                       |                                                                                                                                                      | (Euros per year and Euros per summer),                       |
|                       |                                                                                                                                                      | Value of irrigation water use and supply<br>(Euros per year) |
| Aggregation           | Yes/ no                                                                                                                                              | Yes                                                          |
| nggregation           | If yes, please specify (e.g.                                                                                                                         | At EEA Reference Grid cell (1x1 km <sup>2</sup> )            |
|                       | aggregation level and                                                                                                                                |                                                              |
|                       | method)                                                                                                                                              |                                                              |
| Validation            | Yes/ no                                                                                                                                              | No                                                           |
| process and/          | If yes, please specify                                                                                                                               | Not applicable                                               |
| or uncertainty        |                                                                                                                                                      |                                                              |
| assessment            |                                                                                                                                                      |                                                              |
|                       |                                                                                                                                                      |                                                              |
| Data                  |                                                                                                                                                      |                                                              |
| source(s)             |                                                                                                                                                      |                                                              |
| Output(s)             |                                                                                                                                                      |                                                              |
| Report(s)             | Yes/no                                                                                                                                               | Yes                                                          |
| nopore(b)             | Open access [yes/ no]                                                                                                                                |                                                              |
|                       | Status [planned/ in                                                                                                                                  | In preparation                                               |
|                       | preparation/ published]                                                                                                                              | in propulation                                               |
|                       | Note(s)                                                                                                                                              |                                                              |
|                       | If possible, specify link/                                                                                                                           |                                                              |
|                       | source                                                                                                                                               |                                                              |
| Accounting            | Yes/ no                                                                                                                                              | Yes                                                          |
| spreadsheet(s)        | Open access [yes/ no]                                                                                                                                |                                                              |
|                       | Status [planned/ in                                                                                                                                  | In Preparation                                               |
|                       | preparation/ published]                                                                                                                              |                                                              |
|                       | Note(s)                                                                                                                                              |                                                              |
|                       | If possible, specify link/                                                                                                                           |                                                              |
|                       |                                                                                                                                                      |                                                              |
| Man(c)                | source                                                                                                                                               | Vac                                                          |
| Map(s)                | source<br>Yes/ no                                                                                                                                    | Yes                                                          |
| Map(s)<br>(formatted) | source<br>Yes/ no<br>Open access [yes/ no]                                                                                                           |                                                              |
|                       | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in                                                                                    | Yes<br>In preparation                                        |
|                       | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]                                                         |                                                              |
|                       | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)                                              |                                                              |
|                       | source<br>Yes/ no<br>Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]                                                         |                                                              |

|                 | Open access [yes/ no]      |                |
|-----------------|----------------------------|----------------|
|                 | Status [planned/ in        | In preparation |
|                 | preparation/ published]    |                |
|                 | Note(s)                    |                |
|                 | If possible, specify link/ |                |
|                 | source                     |                |
| Scientific      | Yes/ no                    | Yes            |
| publication(s)  | Open access [yes/ no]      |                |
|                 | Status [planned/ in        | In preparation |
|                 | preparation/ published]    |                |
|                 | Note(s)                    |                |
|                 | If possible, specify link/ |                |
|                 | source                     |                |
| Other output(s) | Yes/ no                    | No             |
|                 | Open access [yes/ no]      | Not applicable |
|                 | Status [planned/ in        | Not applicable |
|                 | preparation/ published]    |                |
|                 | Note(s)                    | Not applicable |
|                 | If possible, specify link/ | Not applicable |
|                 | source                     |                |
|                 |                            |                |
| MAIA            | Support through funding    | Yes            |
| contribution    | [yes/ no]                  |                |
|                 | Personalized support from  | Yes            |
|                 | MAIA community [yes/ no]   |                |
|                 | Support through more       | No             |
|                 | than one MAIA activity     |                |
|                 | (such as webinars and      |                |
|                 | workshops) [yes/ no]       |                |
|                 | Support through one MAIA   | Yes            |
|                 | activity (such as webinars |                |
|                 | and workshops) [yes/ no]   |                |
| Notes           |                            |                |
| References      |                            |                |
|                 |                            |                |

## 6.7.5. Ecosystem asset account

| Country                 |                             | Greece                                         |
|-------------------------|-----------------------------|------------------------------------------------|
| Account type            |                             | Ecosystem asset account                        |
| Account code            |                             | GR_EA_N_1                                      |
| Funding partners        |                             | MAIA project, University of Patras             |
| Other involved partners |                             |                                                |
|                         | Planned/ ongoing/ done      | Done                                           |
| Status                  | (Estimated) completion date | Not applicable                                 |
| Ecosystems              | Ecosystem types             | All terrestrial ecosystem types (MAES level 2) |
| Temporal                | Temporal coverage           | 2018                                           |
| specifics               | Frequency of updates        |                                                |

| Spatial                      | Spatial scale flogal                      | National                                        |
|------------------------------|-------------------------------------------|-------------------------------------------------|
| specifics                    | Spatial scale [local, regional, national] | National                                        |
| specifics                    | If sub-national, please                   | Not applicable                                  |
|                              | specify area                              | not applicable                                  |
|                              | Spatial coverage <i>[not</i>              | Aggregated                                      |
|                              | spatially explicit,                       |                                                 |
|                              | aggregated at                             |                                                 |
|                              | administrative scale,                     |                                                 |
|                              | aggregated at ecological                  |                                                 |
|                              | scale, fully spatially                    |                                                 |
|                              | explicit]                                 |                                                 |
|                              | If aggregated, please                     | 10x10 km EEA reference grid cell                |
|                              | specify administrative or                 |                                                 |
|                              | ecological scale                          | 10x10 km                                        |
|                              | Spatial resolution                        | 10x10 km                                        |
| Mathadala                    |                                           |                                                 |
| Methodology                  |                                           |                                                 |
| General                      | 5 51                                      | ent and flora species richness (total, endemic. |
| description                  |                                           | cosystem type exclusive endemics) per 10x10     |
|                              | category, per floristic region            | with respect to the relevant species richness   |
| Specific                     | GIS analysis                              |                                                 |
| software/                    | GIS analysis                              |                                                 |
| model/ tool                  |                                           |                                                 |
| used                         |                                           |                                                 |
| Following                    | Yes/ partly/no                            | Yes                                             |
| SEEA-EA                      | If partly, please specify                 | Not applicable                                  |
| guidelines                   |                                           |                                                 |
| Indicators used              | Yes/ no                                   | Yes                                             |
|                              | If yes, please specify                    | Species richness                                |
| Aggregation                  | Yes/ no                                   | Yes                                             |
|                              | If yes, please specify (e.g.              | Aggregation of floristic records (point data)   |
|                              | aggregation level and                     | in each 10x10 km grid cell                      |
|                              | method)                                   |                                                 |
| Validation                   | Yes/ no                                   | No (all analyses are based on filed             |
| process and/                 | If was places and if                      | recordings)                                     |
| or uncertainty<br>assessment | If yes, please specify                    | Not applicable                                  |
| assessment                   |                                           |                                                 |
| Data source(s)               |                                           |                                                 |
|                              |                                           |                                                 |
| Output(s)                    |                                           |                                                 |
| Output(s)                    | Vac/no                                    | Vos                                             |
| Report(s)                    | Yes/no                                    | Yes                                             |
|                              | Open access [yes/ no]                     | Yes                                             |
|                              | Status [planned/ in                       | In preparation                                  |
|                              | preparation/published]                    |                                                 |
|                              | Note(s)                                   |                                                 |
|                              | If possible, specify link/                |                                                 |
|                              | source                                    | No                                              |
|                              | Yes/ no                                   | 110                                             |

| Accounting           | Open access [yes/ no]            |                                            |
|----------------------|----------------------------------|--------------------------------------------|
| spreadsheet(s)       | Status [planned/ in              |                                            |
| spreadsheet(s)       | preparation/ published]          |                                            |
|                      | Note(s)                          | Baseline assessment (accounting reference) |
|                      | If possible, specify link/       |                                            |
|                      | source                           |                                            |
| Map(s)               | Yes/no                           | Yes                                        |
| (formatted)          | Open access [yes/ no]            | Yes                                        |
|                      | Status [planned/ in              | Published                                  |
|                      | preparation/ published]          | i ubilbileu                                |
|                      | Note(s)                          |                                            |
|                      | If possible, specify link/       |                                            |
|                      | source                           |                                            |
| Geodata              | Yes/ no                          | Yes                                        |
|                      | Open access [yes/ no]            | Yes                                        |
|                      | Status [planned/ in              |                                            |
|                      | preparation/ published]          |                                            |
|                      | Note(s)                          |                                            |
|                      | If possible, specify link/       |                                            |
|                      | source                           |                                            |
| Scientific           | Yes/ no                          | Yes                                        |
| publication(s)       | Open access [yes/ no]            | Yes                                        |
|                      | Status [planned/ in              | In preparation                             |
|                      | preparation/ published]          |                                            |
|                      | Note(s)                          |                                            |
|                      | If possible, specify link/       |                                            |
|                      | source                           |                                            |
| Other output(s)      | Yes/ no                          | No                                         |
|                      | Open access [yes/ no]            | Not applicable                             |
|                      | Status [planned/ in              | Not applicable                             |
|                      | preparation/published]           |                                            |
|                      | Note(s)                          | Not applicable                             |
|                      | If possible, specify link/       | Not applicable                             |
|                      | source                           |                                            |
| MAIA                 | Cumpout the second Construction  | Vac                                        |
| MAIA<br>contribution | Support through funding [yes/no] | Yes                                        |
|                      | Personalized support from        | Yes                                        |
|                      | MAIA community [yes/ no]         |                                            |
|                      | Support through more             | No                                         |
|                      | than one MAIA activity           |                                            |
|                      | (such as webinars and            |                                            |
|                      | workshops) [yes/ no]             |                                            |
|                      | Support through one MAIA         | Yes                                        |
|                      | activity (such as webinars       |                                            |
|                      | and workshops) [yes/ no]         |                                            |
| Notes                | Extensive initial support from   | m the MAIA partners, related to the Task.  |
| References           |                                  |                                            |

### 6.8. Annex: The Netherlands

| Country                                      |                                                                                                                                                           | The Netherlands                         |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Account type                                 |                                                                                                                                                           | Ecosystem service account (biophysical) |
| Account code                                 |                                                                                                                                                           | NL_ESb_N_1                              |
| Funding partners                             |                                                                                                                                                           | MAIA                                    |
| Other involved partners                      |                                                                                                                                                           |                                         |
|                                              | Planned/ ongoing/ done                                                                                                                                    | Done                                    |
| Status                                       | (Estimated) completion<br>date                                                                                                                            | Not applicable                          |
| Ecosystems                                   | Ecosystem types                                                                                                                                           | All ecosystems                          |
| Ecosystem<br>service                         | Ecosystem service<br>category<br>Ecosystem service                                                                                                        | Regulating       Coastal protection     |
| Tomporal                                     | Temporal coverage                                                                                                                                         | 2013, 2015, 2018                        |
| Temporal specifics                           | Frequency of updates                                                                                                                                      | Pluri-annual                            |
| Spatial<br>specifics                         | Spatial scale [local,<br>regional, national]                                                                                                              | National                                |
|                                              | If sub-national, please specify area                                                                                                                      | Not applicable                          |
|                                              | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit] |                                         |
|                                              | If aggregated, please<br>specify administrative or<br>ecological scale<br>Spatial resolution                                                              | 10m                                     |
|                                              |                                                                                                                                                           |                                         |
| Methodology                                  |                                                                                                                                                           |                                         |
| General<br>description                       | GIS model                                                                                                                                                 |                                         |
| Specific<br>software/<br>model/ tool<br>used | ArcGIS                                                                                                                                                    |                                         |
| Following                                    | Yes/ partly/no                                                                                                                                            | Yes                                     |
| SEEA-EA<br>guidelines                        | If partly, please specify                                                                                                                                 | Not applicable                          |
| Indicators used                              | Yes/ no                                                                                                                                                   | Yes                                     |
|                                              | If yes, please specify                                                                                                                                    | Km of coastline protected               |
| Aggregation                                  | Yes/ no                                                                                                                                                   | No                                      |

|                 | If yes, please specify (e.g. aggregation level and   | Not applicable                                             |
|-----------------|------------------------------------------------------|------------------------------------------------------------|
|                 | method)                                              |                                                            |
| Validation      | Yes/ no                                              | No                                                         |
| process and/    | If yes, please specify                               | Not applicable                                             |
| or uncertainty  |                                                      | 11                                                         |
| assessment      |                                                      |                                                            |
|                 |                                                      |                                                            |
| Data source(s)  | <ul><li>Land use</li><li>Location of dunes</li></ul> |                                                            |
|                 |                                                      |                                                            |
| Output(s)       |                                                      |                                                            |
| Report(s)       | Yes/ no                                              | Yes: part of the NL biophysical ecosystem services account |
|                 | Open access [yes/ no]                                | Yes                                                        |
|                 | Status [planned/ in                                  | Published                                                  |
|                 | preparation/ published]                              |                                                            |
|                 | Note(s)                                              |                                                            |
|                 | If possible, specify link/                           |                                                            |
|                 | source                                               |                                                            |
| Accounting      | Yes/ no                                              | No                                                         |
| spreadsheet(s)  | Open access [yes/ no]                                |                                                            |
|                 | Status [planned/ in                                  |                                                            |
|                 | preparation/ published]                              |                                                            |
|                 | Note(s)                                              |                                                            |
|                 | If possible, specify link/                           |                                                            |
|                 | source                                               |                                                            |
| Map(s)          | Yes/ no                                              | Yes                                                        |
| (formatted)     | Open access [yes/ no]                                | Yes                                                        |
|                 | Status [planned/ in                                  | Yes, same report as above                                  |
|                 | preparation/ published]                              |                                                            |
|                 | Note(s)                                              |                                                            |
|                 | If possible, specify link/                           |                                                            |
|                 | source                                               |                                                            |
| Geodata         | Yes/no                                               |                                                            |
|                 | Open access [yes/ no]                                |                                                            |
|                 | Status [planned/ in                                  |                                                            |
|                 | preparation/ published]                              |                                                            |
|                 | Note(s)                                              |                                                            |
|                 | If possible, specify link/                           |                                                            |
| Scientific      | source                                               | No                                                         |
| publication(s)  | Yes/no                                               | No                                                         |
| publication(s)  | Open access [yes/ no]                                |                                                            |
|                 | Status [planned/ in                                  |                                                            |
|                 | preparation/published]                               |                                                            |
|                 | Note(s)                                              |                                                            |
|                 | If possible, specify link/                           |                                                            |
| Other output(s) | source<br>Yes/ no                                    | No                                                         |
| other output(s) | 105/110                                              | 110                                                        |

|              | 0                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                    |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | Open access [yes/ no]                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                    |
|              | Status [planned/ in                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                    |
|              | preparation/ published]                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                    |
|              | Note(s)                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                    |
|              | If possible, specify link/                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                    |
|              | source                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                    |
|              |                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                    |
| MAIA         | Support through funding                                                                                                                                            | Yes                                                                                                                                                                                                                                                                                                                                                |
| contribution | [yes/ no]                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                    |
|              | Personalized support from                                                                                                                                          | No                                                                                                                                                                                                                                                                                                                                                 |
|              | MAIA community [yes/ no]                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                    |
|              | Support through more                                                                                                                                               | Yes                                                                                                                                                                                                                                                                                                                                                |
|              | than one MAIA activity                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                    |
|              | (such as webinars and                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                    |
|              | workshops) <i>[yes/ no]</i>                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                    |
|              | Support through one MAIA                                                                                                                                           | No                                                                                                                                                                                                                                                                                                                                                 |
|              | activity (such as webinars                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                    |
|              | and workshops) [yes/ no]                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                    |
| Notes        |                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                    |
| References   | Bogaart, Corine Driessen, Ed<br>Mosterd, Lars Hein (WUR) (2<br>Nederland 2013-2018 ( <u>https:<br/>statistische-diensten/2021/</u><br>2013-2018); Statistics Nethe | Sjoerd Schenau, Jocelyn van Berkel, Patrick<br>win Horlings, Marjolein Lof (WUR), Redbad<br>2021) Natuurlijk Kapitaalrekeningen<br>s://www.cbs.nl/nl-nl/longread/aanvullende-<br>natuurlijk-kapitaalrekeningen-nederland-<br>erlands and WUR (2021), Natural Capital<br>ds – Technical report. Statistics Netherlands<br>ersity and Research (WUR) |

| Country        |                              | The Netherlands                         |
|----------------|------------------------------|-----------------------------------------|
| Account type   |                              | Ecosystem service account (biophysical) |
| Account code   |                              | NL_ESb_N_2                              |
| Funding partne | ers                          |                                         |
| Other involved | partners                     |                                         |
|                | Planned/ ongoing/ done       | Done                                    |
| Status         | (Estimated) completion       | Not applicable                          |
|                | date                         |                                         |
| Ecosystems     | Ecosystem types              | All ecosystems                          |
| Ecosystem      | Ecosystem service            | Regulating                              |
| service        | category                     |                                         |
|                | Ecosystem service            | Local climate regulation                |
| Temporal       | Temporal coverage            | 2013, 2015, 2018                        |
| specifics      | Frequency of updates         | Pluri-annual                            |
| Spatial        | Spatial scale <i>[local,</i> | National                                |
| specifics      | regional, national]          |                                         |
|                | If sub-national, please      | [but only in urban areas + 500m buffer] |
|                | specify area                 |                                         |
|                | Spatial coverage [not        |                                         |
|                | spatially explicit,          |                                         |
|                | aggregated at                |                                         |
|                | administrative scale,        |                                         |

|                              | aggregated at ecological                                                                                                                                        |                                                                                                                                                                                                                                                                                    |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | scale, fully spatially                                                                                                                                          |                                                                                                                                                                                                                                                                                    |
|                              | <i>explicit]</i><br>If aggregated, please                                                                                                                       |                                                                                                                                                                                                                                                                                    |
|                              | specify administrative or                                                                                                                                       |                                                                                                                                                                                                                                                                                    |
|                              | ecological scale                                                                                                                                                |                                                                                                                                                                                                                                                                                    |
|                              | Spatial resolution                                                                                                                                              |                                                                                                                                                                                                                                                                                    |
|                              | <b>↓</b> •                                                                                                                                                      |                                                                                                                                                                                                                                                                                    |
| Methodology                  |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                    |
| General                      | The local climate regulation                                                                                                                                    | service is defined here as the contribution of                                                                                                                                                                                                                                     |
| description                  | vegetation within a radius of<br>areas during a heat wave. Th<br>vegetation to the temperatur<br>°C in the city during a heat w<br>the number of degrees of the | 500m to the cooling capacity of highly urban<br>be service is expressed in the contribution of<br>re reduction of the total heat wave number in<br>vave). The heat wave number is calculated as<br>a maximum temperature above 25.0 °C<br>he heat wave, with a unit in degree-days |
| Specific                     | ArcGIS model                                                                                                                                                    |                                                                                                                                                                                                                                                                                    |
| software/                    |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                    |
| model/ tool                  |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                    |
| used                         |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                    |
| Following<br>SEEA-EA         | Yes/ partly/no                                                                                                                                                  | Yes                                                                                                                                                                                                                                                                                |
| guidelines                   | If partly, please specify                                                                                                                                       | Not applicable                                                                                                                                                                                                                                                                     |
| Indicators used              | Yes/ no                                                                                                                                                         | Yes, see above.                                                                                                                                                                                                                                                                    |
|                              | If yes, please specify                                                                                                                                          |                                                                                                                                                                                                                                                                                    |
| Aggregation                  | Yes/no                                                                                                                                                          | No                                                                                                                                                                                                                                                                                 |
| 00 0                         | If yes, please specify (e.g.                                                                                                                                    | Not applicable                                                                                                                                                                                                                                                                     |
|                              | aggregation level and                                                                                                                                           |                                                                                                                                                                                                                                                                                    |
|                              | method)                                                                                                                                                         |                                                                                                                                                                                                                                                                                    |
| Validation                   | Yes/ no                                                                                                                                                         | No                                                                                                                                                                                                                                                                                 |
| process and/                 | If yes, please specify                                                                                                                                          | Not appliable                                                                                                                                                                                                                                                                      |
| or uncertainty<br>assessment |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                    |
| assessment                   |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                    |
| Data source(s)               | Ecosystem Type mar                                                                                                                                              | o from Statistics Netherlands                                                                                                                                                                                                                                                      |
| Dutu source(s)               |                                                                                                                                                                 | nen 10m, Shrub cover map: struik 10m and                                                                                                                                                                                                                                           |
|                              | Grass cover map: gra                                                                                                                                            | -                                                                                                                                                                                                                                                                                  |
|                              | • CBS buurt 2013, 201                                                                                                                                           | 5 and 2018 from Statistics Netherlands                                                                                                                                                                                                                                             |
|                              | Sky-view-factor and                                                                                                                                             | climatic data from KNMI                                                                                                                                                                                                                                                            |
|                              |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                    |
| Output(s)                    |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                    |
| Report(s)                    | Yes/ no                                                                                                                                                         | Yes, see reference below                                                                                                                                                                                                                                                           |
|                              | Open access [yes/ no]                                                                                                                                           | Yes                                                                                                                                                                                                                                                                                |
|                              | Status [planned/ in                                                                                                                                             | Published                                                                                                                                                                                                                                                                          |
|                              | preparation/published]                                                                                                                                          |                                                                                                                                                                                                                                                                                    |
|                              | Note(s)                                                                                                                                                         |                                                                                                                                                                                                                                                                                    |
|                              | If possible, specify link/                                                                                                                                      |                                                                                                                                                                                                                                                                                    |
| Accounting                   | source<br>Yes/ no                                                                                                                                               | No                                                                                                                                                                                                                                                                                 |
| spreadsheet(s)               | Open access [yes/ no]                                                                                                                                           |                                                                                                                                                                                                                                                                                    |
| opreudoneet(5)               | open access [yes/ no]                                                                                                                                           |                                                                                                                                                                                                                                                                                    |

|                      | Status [planned/ in                                     |                                             |
|----------------------|---------------------------------------------------------|---------------------------------------------|
|                      | preparation/ published]                                 |                                             |
|                      | Note(s)                                                 |                                             |
|                      | If possible, specify link/                              |                                             |
|                      | source                                                  |                                             |
| Map(s)               | Yes/ no                                                 | Yes, but only published for Amsterdam       |
| (formatted)          | Open access [yes/ no]                                   |                                             |
|                      | Status [planned/ in                                     |                                             |
|                      | preparation/ published]                                 |                                             |
|                      | Note(s)                                                 |                                             |
|                      | If possible, specify link/                              |                                             |
|                      | source                                                  |                                             |
| Geodata              | Yes/ no                                                 |                                             |
|                      | Open access [yes/ no]                                   |                                             |
|                      | Status [planned/ in                                     |                                             |
|                      | preparation/ published]                                 |                                             |
|                      | Note(s)                                                 |                                             |
|                      | If possible, specify link/                              |                                             |
|                      | source                                                  |                                             |
| Scientific           | Yes/ no                                                 | No                                          |
| publication(s)       | Open access [yes/ no]                                   |                                             |
|                      | Status [planned/ in                                     |                                             |
|                      | preparation/ published]                                 |                                             |
|                      | Note(s)                                                 |                                             |
|                      | If possible, specify link/                              |                                             |
|                      | source                                                  |                                             |
| Other output(s)      | Yes/ no                                                 | No                                          |
|                      | Open access [yes/ no]                                   |                                             |
|                      | Status [planned/ in                                     |                                             |
|                      | preparation/ published]                                 |                                             |
|                      | Note(s)                                                 |                                             |
|                      | If possible, specify link/                              |                                             |
|                      | source                                                  |                                             |
|                      |                                                         |                                             |
| MAIA<br>contribution | Support through funding [yes/ no]                       | Yes                                         |
|                      | Personalized support from                               | No                                          |
|                      | MAIA community [yes/ no]                                |                                             |
|                      | Support through more                                    | Yes                                         |
|                      | than one MAIA activity                                  |                                             |
|                      | (such as webinars and                                   |                                             |
|                      | workshops) <i>[yes/ no]</i><br>Support through one MAIA | No                                          |
|                      | activity (such as webinars                              |                                             |
|                      | and workshops) [yes/ no]                                |                                             |
| Notes                |                                                         | 1                                           |
| References           | Linda de Jongh, Rixt de Jong                            | Sjoerd Schenau, Jocelyn van Berkel, Patrick |
|                      |                                                         | win Horlings, Marjolein Lof (WUR), Redbad   |
|                      | 0                                                       | 2021) Natuurlijk Kapitaalrekeningen         |
|                      |                                                         | s://www.cbs.nl/nl-nl/longread/aanvullende-  |
|                      |                                                         |                                             |

| statistische-diensten/2021/natuurlijk-kapitaalrekeningen-nederland-      |
|--------------------------------------------------------------------------|
| 2013-2018); Statistics Netherlands and WUR (2021), Natural Capital       |
| Accounting in the Netherlands – Technical report. Statistics Netherlands |
| (CBS) and Wageningen University and Research (WUR)                       |

# 6.8.2. Ecosystem service account – monetary

| Country               |                                      | The Netherlands                              |
|-----------------------|--------------------------------------|----------------------------------------------|
| Account type          |                                      | Ecosystem service account (monetary)         |
| Account code          |                                      | NL_ESm_N_1                                   |
| Funding partne        | rs                                   |                                              |
| Other involved        |                                      |                                              |
|                       | Planned/ ongoing/ done               | Done                                         |
| Status                | (Estimated) completion date          |                                              |
| Ecosystems            | Ecosystem types                      | All ecosystems                               |
| Ecosystem             | Ecosystem service                    | Regulating                                   |
| service               | category                             |                                              |
|                       | Ecosystem service                    | Coastal protection                           |
| Temporal              | Temporal coverage                    | 2013, 2015, 2018                             |
| specifics             | Frequency of updates                 | Pluri-annual                                 |
| Spatial               | Spatial scale <i>[local,</i>         | National                                     |
| specifics             | regional, national]                  |                                              |
|                       | If sub-national, please              |                                              |
|                       | specify area                         |                                              |
|                       | Spatial coverage [not                | Coastal zone of the NLs                      |
|                       | spatially explicit,<br>aggregated at |                                              |
|                       | administrative scale,                |                                              |
|                       | aggregated at ecological             |                                              |
|                       | scale, fully spatially               |                                              |
|                       | explicit]                            |                                              |
|                       | If aggregated, please                |                                              |
|                       | specify administrative or            |                                              |
|                       | ecological scale                     |                                              |
|                       | Spatial resolution                   |                                              |
|                       |                                      |                                              |
| Methodology           |                                      |                                              |
| General               | Replacement cost approach            | ; compared with costs of constructing dykes. |
| description           | AnaCIS                               |                                              |
| Specific<br>software/ | ArcGIS                               |                                              |
| model/ tool           |                                      |                                              |
| used                  |                                      |                                              |
| Following             | Yes/ partly/no                       | Yes                                          |
| SEEA-EA               | If partly, please specify            |                                              |
| guidelines            | r                                    |                                              |
| Indicators used       | Yes/ no                              |                                              |
|                       | If yes, please specify               |                                              |

| Aggregation    | Yes/ no                               |                                            |
|----------------|---------------------------------------|--------------------------------------------|
| 1.881 0.84000  | If yes, please specify (e.g.          |                                            |
|                | aggregation level and                 |                                            |
|                | method)                               |                                            |
| Validation     | Yes/ no                               |                                            |
| process and/   | If yes, please specify                |                                            |
| or uncertainty |                                       |                                            |
| assessment     |                                       |                                            |
|                |                                       |                                            |
| Data source(s) |                                       | tions on the costs of construction coastal |
|                | production such as                    |                                            |
|                |                                       | enance and construction and maintenance of |
|                | dykes                                 |                                            |
| Output(c)      |                                       |                                            |
| Output(s)      | Vac/no                                | Yes, see reference below                   |
| Report(s)      | Yes/no                                |                                            |
|                | Open access [yes/ no]                 | Yes                                        |
|                | Status [planned/ in                   | Published                                  |
|                | preparation/published]                |                                            |
|                | Note(s)                               |                                            |
|                | If possible, specify link/            |                                            |
| Accounting     | source<br>Yes/ no                     | No                                         |
| spreadsheet(s) |                                       | NO                                         |
| spreausneet(s) | Open access [yes/ no]                 |                                            |
|                | Status [planned/ in                   |                                            |
|                | preparation/published]                |                                            |
|                | Note(s)                               |                                            |
|                | If possible, specify link/            |                                            |
| Map(s)         | source<br>Yes/ no                     | No                                         |
| (formatted)    | · · · · · · · · · · · · · · · · · · · | NO                                         |
| (iormaticu)    | Open access [yes/ no]                 |                                            |
|                | Status [planned/ in                   |                                            |
|                | preparation/ published]               |                                            |
|                | Note(s)                               |                                            |
|                | If possible, specify link/ source     |                                            |
| Geodata        | Yes/ no                               | No                                         |
| George         | Open access [yes/ no]                 |                                            |
|                | Status [planned/ in                   |                                            |
|                | preparation/ published]               |                                            |
|                | Note(s)                               |                                            |
|                | If possible, specify link/            |                                            |
|                | source                                |                                            |
| Scientific     | Yes/no                                | No                                         |
| publication(s) | Open access [yes/ no]                 |                                            |
| 1              | Status [planned/ in                   |                                            |
|                | preparation/ published]               |                                            |
|                | Note(s)                               |                                            |
|                | 1000(3)                               |                                            |

|                 | If possible, specify link/    |                                               |
|-----------------|-------------------------------|-----------------------------------------------|
|                 | source                        |                                               |
| Other output(s) | Yes/ no                       | No                                            |
|                 | Open access [yes/ no]         |                                               |
|                 | Status [planned/ in           |                                               |
|                 | preparation/ published]       |                                               |
|                 | Note(s)                       |                                               |
|                 | If possible, specify link/    |                                               |
|                 | source                        |                                               |
|                 |                               |                                               |
| MAIA            | Support through funding       | Yes                                           |
| contribution    | [yes/ no]                     |                                               |
|                 | Personalized support from     | No                                            |
|                 | MAIA community [yes/ no]      |                                               |
|                 | Support through more          | Yes                                           |
|                 | than one MAIA activity        |                                               |
|                 | (such as webinars and         |                                               |
|                 | workshops) [yes/ no]          |                                               |
|                 | Support through one MAIA      | No                                            |
|                 | activity (such as webinars    |                                               |
|                 | and workshops) [yes/ no]      |                                               |
| Notes           |                               |                                               |
| References      | Linda de Jongh, Rixt de Jong, | Sjoerd Schenau, Jocelyn van Berkel, Patrick   |
|                 | Bogaart, Corine Driessen, Ed  | win Horlings, Marjolein Lof (WUR), Redbad     |
|                 | Mosterd, Lars Hein (WUR) (2   | 2021) Natuurlijk Kapitaalrekeningen           |
|                 | Nederland 2013-2018 (https    | s://www.cbs.nl/nl-nl/longread/aanvullende-    |
|                 | statistische-diensten/2021/   | natuurlijk-kapitaalrekeningen-nederland-      |
|                 | 2013-2018); Statistics Nethe  | erlands and WUR (2021), Natural Capital       |
|                 | Accounting in the Netherland  | ds – Technical report. Statistics Netherlands |
|                 | (CBS) and Wageningen Univ     | ersity and Research (WUR)                     |
|                 |                               |                                               |

## 6.9. Annex: Norway

#### 6.9.1. Ecosystem asset account

| Country        |                                | Norway                                                                                                                                                                     |
|----------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type   |                                | Norway, values of agricultural land                                                                                                                                        |
|                |                                | (Ecosystem asset account)                                                                                                                                                  |
| Account code   |                                | NO_EA_N_1                                                                                                                                                                  |
| Funding partne | rs                             | Statistics Norway (SSB)                                                                                                                                                    |
| Other involved | partners                       | Norwegian Agriculture Agency provided<br>data on rental prices for agricultural land in<br>active use                                                                      |
|                | Done                           | Done                                                                                                                                                                       |
| Status         | (Estimated) completion<br>date | Calculations were prepared before<br>presentation at the conference of the<br>International Association for Research in<br>Income and Wealth (IARIW), on 26 August<br>2021 |

| Econvetome  | Econvictor types                           | Agricultural account and with valuation in a                                           |
|-------------|--------------------------------------------|----------------------------------------------------------------------------------------|
| Ecosystems  | Ecosystem types                            | Agricultural ecosystems, with valuation in a context of ecosystem asset accounts based |
|             |                                            | on resource rent for other natural resources                                           |
| Temporal    | Temporal coverage                          | Agricultural values are assessed by three                                              |
| specifics   | Temporarcoverage                           | approaches, with different temporal and                                                |
| specifics   |                                            | spatial coverage:                                                                      |
|             |                                            | <b>Resource rent</b> 1984-2018, for the natural                                        |
|             |                                            | resource sectors agriculture, hydro power,                                             |
|             |                                            | petroleum, aquaculture, fisheries, mining,                                             |
|             |                                            | forestry and harvesting of nature for own                                              |
|             |                                            | use and private sales;                                                                 |
|             |                                            | Value of public transfers to agriculture                                               |
|             |                                            | 1986-2018;                                                                             |
|             |                                            | Rental prices for agricultural land in active                                          |
|             |                                            | use, 2005-2020                                                                         |
|             | Frequency of updates                       | Input data are updated yearly (including                                               |
|             |                                            | data for resource rent calculation from                                                |
|             |                                            | national accounts, data for value of public                                            |
|             |                                            | transfers and rental prices for agricultural                                           |
|             |                                            | land.)                                                                                 |
|             |                                            | The frequency of updates for future                                                    |
|             |                                            | ecosystem accounts to be developed is not                                              |
|             |                                            | yet decided.                                                                           |
| Spatial     | Spatial scale <i>[local,</i>               | National level: Data for resource rent                                                 |
| specifics   | regional, national]                        | calculation from national accounts, data for                                           |
|             |                                            | value of public transfers.<br><b>Municipal</b> (scale) level: Data for rental          |
|             |                                            | prices for agricultural land in active use                                             |
|             |                                            | These data are not (yet) spatially explicit,                                           |
|             |                                            | due to lack of mapping of crops at farm                                                |
|             |                                            | level, a gap in data yet to be improved.                                               |
|             | If sub-national, please                    | Data for rental prices for agricultural land in                                        |
|             | specify area                               | active use are available at municipal level,                                           |
|             |                                            | provided by the Norwegian Agriculture                                                  |
|             |                                            | Agency.                                                                                |
|             | Spatial coverage [not                      | Not spatially explicit.                                                                |
|             | spatially explicit,                        | Input data are aggregated at administrative                                            |
|             | aggregated at                              | level: national level for resource rent and                                            |
|             | administrative scale,                      | public transfers, and municipal level for                                              |
|             | aggregated at ecological                   | rental prices.                                                                         |
|             | scale, fully spatially                     |                                                                                        |
|             | explicit]                                  | Notional level for resource much and an 1.11                                           |
|             | If aggregated, please                      | National level for resource rent and public                                            |
|             | specify administrative or ecological scale | transfers, and municipal level for rental prices.                                      |
|             | Spatial resolution                         | Not spatially explicit at ecosystem scale,                                             |
|             | Spatial resolution                         | input data for rental prices available at                                              |
|             |                                            | municipal level.                                                                       |
|             |                                            |                                                                                        |
| Methodology |                                            |                                                                                        |
| General     | Agricultural values are asse               | essed by three methods:                                                                |
| description |                                            | .ssea by three methods.                                                                |
| acscription |                                            |                                                                                        |

|                                              | System of National Accoun<br>Indirect valuation of societ<br>level of public transfers to | al willingness to pay for agriculture by the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specific<br>software/<br>model/ tool<br>used | Standard tools                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Following<br>SEEA-EA                         | Yes/ partly/no                                                                            | Partly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| guidelines                                   | If partly, please specify                                                                 | Resource rent calculations follow SEEA-EA<br>guidelines<br>Values of agriculture presented here<br>represent estimates of values of agricultural<br>land as basis for (future) assessments of<br>ecosystem services, as assessments of (farm<br>level and ecosystem level) agricultural<br>extent and condition are not yet available<br>for Norway.                                                                                                                                                                                                                                                                                                                      |
| Indicators used                              | Yes/ no                                                                                   | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                              | If yes, please specify                                                                    | Resource rent for agriculture<br>Indirect valuation by public transfers<br>Rental prices for agricultural land in active<br>use.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Aggregation                                  | Yes/ no                                                                                   | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                          | Input data for indicators are aggregated at<br>national level for resource rent and public<br>transfers and at municipal level for rental<br>prices.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Validation                                   | Yes/ no                                                                                   | No/Partly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                    | Sensitivity analysis of resource rent has<br>been carried out as standard procedure.<br>Practices for reporting rental prices for<br>agricultural land vary across municipalities,<br>and future efforts to enhance data quality<br>should aim to enhance consistency in<br>reporting practice across municipalities, for<br>prices and location of rented land. A<br>challenge for developing ecosystem<br>accounting for agriculture is lack of data on<br>the spatial distribution of crops, neither for<br>own land nor rented land, and future work<br>should aim to develop remote sensing<br>methods to assess the spatial distribution of<br>crops at farm level. |

| for coverage<br>o<br>access [yes/ no]<br>[planned/ in<br>ration/ published]<br>s)<br>sible, specify link/<br>e<br>o<br>access [yes/ no]<br>[planned/ in<br>ration/ published] | No         Not applicable         Not applicable         See below: Scientific publication is in preparation         Not applicable         No         No         Not applicable                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| access [yes/ no]<br>[planned/ in<br>ration/ published]<br>5]<br>sible, specify link/<br>e<br>o<br>access [yes/ no]<br>[planned/ in                                            | Not applicable         Not applicable         See below: Scientific publication is in preparation         Not applicable         No                                                                                                                                               |
| access [yes/ no]<br>[planned/ in<br>ration/ published]<br>5]<br>sible, specify link/<br>e<br>o<br>access [yes/ no]<br>[planned/ in                                            | Not applicable         Not applicable         See below: Scientific publication is in preparation         Not applicable         No                                                                                                                                               |
| access [yes/ no]<br>[planned/ in<br>ration/ published]<br>5]<br>sible, specify link/<br>e<br>o<br>access [yes/ no]<br>[planned/ in                                            | Not applicable         Not applicable         See below: Scientific publication is in preparation         Not applicable         No                                                                                                                                               |
| [planned/ in<br>ration/ published]<br>s)<br>sible, specify link/<br>e<br>o<br>access [yes/ no]<br>[planned/ in                                                                | Not applicable         See below: Scientific publication is in preparation         Not applicable         No                                                                                                                                                                      |
| sible, specify link/<br>o<br>access [yes/ no]<br>[planned/ in                                                                                                                 | See below: Scientific publication is in<br>preparation<br>Not applicable<br>No                                                                                                                                                                                                    |
| sible, specify link/<br>e<br>o<br>access [yes/ no]<br>[planned/ in                                                                                                            | preparation<br>Not applicable<br>No                                                                                                                                                                                                                                               |
| e<br>o<br>access [yes/ no]<br>[planned/ in                                                                                                                                    | Not applicable       No                                                                                                                                                                                                                                                           |
| e<br>o<br>access [yes/ no]<br>[planned/ in                                                                                                                                    | No                                                                                                                                                                                                                                                                                |
| access [yes/ no]<br>[planned/ in                                                                                                                                              |                                                                                                                                                                                                                                                                                   |
| [planned/ in                                                                                                                                                                  | Not applicable                                                                                                                                                                                                                                                                    |
| ,                                                                                                                                                                             |                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                               | Not applicable                                                                                                                                                                                                                                                                    |
| 5)                                                                                                                                                                            | (Accounting spreadsheets may possibly be<br>part of future development of ecosystem<br>accounting)                                                                                                                                                                                |
| sible, specify link/                                                                                                                                                          | Not applicable                                                                                                                                                                                                                                                                    |
| 0                                                                                                                                                                             | No                                                                                                                                                                                                                                                                                |
| access [yes/ no]                                                                                                                                                              | Not applicable                                                                                                                                                                                                                                                                    |
| [planned/ in<br>ration/ published]                                                                                                                                            | Not applicable                                                                                                                                                                                                                                                                    |
| 5)                                                                                                                                                                            | (Maps may possibly be part of future development of ecosystem accounting)                                                                                                                                                                                                         |
| sible, specify link/                                                                                                                                                          | Not applicable                                                                                                                                                                                                                                                                    |
| 0                                                                                                                                                                             | No                                                                                                                                                                                                                                                                                |
| access [yes/ no]                                                                                                                                                              | Not applicable                                                                                                                                                                                                                                                                    |
| [planned/ in<br>ration/ published]                                                                                                                                            | Not applicable                                                                                                                                                                                                                                                                    |
| 5)                                                                                                                                                                            | (Geodata may possibly be part of future development of ecosystem accounting)                                                                                                                                                                                                      |
|                                                                                                                                                                               | Not applicable                                                                                                                                                                                                                                                                    |
|                                                                                                                                                                               | Yes                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                               |                                                                                                                                                                                                                                                                                   |
| [planned/ in                                                                                                                                                                  | In preparation<br>H. M. Dalen, L. Lindholt, P. A. Garnåsjordet,<br>M. E. Hillestad, A. Norderhaug and I.<br>Aslaksen, and other contributing authors<br>(2021): Valuing agricultural land: From<br>resource rent and willingness to pay to<br>values of ecosystem services, paper |
|                                                                                                                                                                               | s)<br>sible, specify link/<br>e<br>o<br>access [yes/ no]<br>[planned/ in<br>ration/ published]                                                                                                                                                                                    |

|              |                            | Income and Wealth (IARIW), 26 August                |
|--------------|----------------------------|-----------------------------------------------------|
|              |                            | 2021, in presentation with comments by              |
|              |                            | Mark de Haan of Statistics Netherlands.             |
|              | Note(s)                    |                                                     |
|              | If possible, specify link/ | https://iariw.org/wp-                               |
|              | source                     | <pre>content/uploads/2021/06/LarsLindholt.pdf</pre> |
| Others       | Weed as                    | V                                                   |
| Other        | Yes/no                     | Yes                                                 |
| output(s)    | Open access [yes/ no]      | Yes                                                 |
|              | Status [planned/ in        | Two outputs in addition to article in               |
|              | preparation/ published]    | international journal, in preparation:              |
|              |                            | IARIW Conference presentation                       |
|              |                            | Discussion Paper from Statistics Norway             |
|              |                            | (SSB) is in preparation, based on paper             |
|              |                            | presented at IARIW conference, with                 |
|              |                            | Discussion Paper from internal review               |
|              |                            | process before submission to the                    |
|              |                            | international journal Review of Income and          |
|              |                            | Wealth                                              |
|              | Note(s)                    |                                                     |
|              | If possible, specify link/ |                                                     |
|              | source                     |                                                     |
|              |                            |                                                     |
| MAIA         | Support through funding    | Yes                                                 |
| contribution | [yes/ no]                  |                                                     |
|              | Personalized support from  | Yes                                                 |
|              | MAIA community [yes/ no]   |                                                     |
|              | Support through more       | Yes                                                 |
|              | than one MAIA activity     |                                                     |
|              | (such as webinars and      |                                                     |
|              | workshops) [yes/ no]       |                                                     |
|              | Support through one        | No                                                  |
|              | MAIA activity (such as     |                                                     |
|              | webinars and workshops)    |                                                     |
|              | [yes/no]                   |                                                     |
| Notes        |                            | ot a full on SEEA-EA ecosystem asset account.       |
| References   |                            | . Garnåsjordet, M. E. Hillestad, A. Norderhaug      |
|              |                            | ontributing authors (2021): Valuing                 |
|              |                            | ource rent and willingness to pay to values of      |
|              | 0                          | resented at International Association for           |
|              |                            | alth (IARIW), 26 August 2021,                       |
|              |                            | nt/uploads/2021/06/LarsLindholt.pdf                 |
|              | ,,,,,                      |                                                     |
|              |                            |                                                     |

# 6.10. Annex: Spain

#### 6.10.1. Ecosystem extent account

| Country                          |                                                                                                                                                           | Spain                                                                                                                                                                                                                                       |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type                     |                                                                                                                                                           | Ecosystem extent account                                                                                                                                                                                                                    |
| Account code                     |                                                                                                                                                           | SP_EE_N_1                                                                                                                                                                                                                                   |
| Funding partners                 |                                                                                                                                                           | MAIA project, Rey Juan Carlos University                                                                                                                                                                                                    |
| Other involved partn             | ers                                                                                                                                                       | Spanish Ministry of ecological transition and<br>demographic challenge; Spanish National<br>Statistical Institute                                                                                                                           |
| Status                           | Planned/ ongoing/<br>done<br>(Estimated)<br>completion date                                                                                               | Done                                                                                                                                                                                                                                        |
|                                  | <i>(Sub-)national/</i><br><i>international</i><br>If possible, please<br>specify                                                                          |                                                                                                                                                                                                                                             |
| Ecosystem type<br>classification | If (sub-)national,<br>compatible with<br>international<br>classification (if yes,<br>please specify which)                                                | LULUCF IPCC classification and via a crosswalk is compatible with IUCN ET                                                                                                                                                                   |
| Ecosystems                       | Ecosystem types                                                                                                                                           | Sclerophyllous Mediterranean, Continental<br>Mediterranean, Mediterranean mountain,<br>Atlantic, Alpine, Macaronesia, Arid zones,<br>Coastal areas, Other lands, Wetlands, Rivers<br>& lakes, Perennial woody crops, Annual<br>crops, Urban |
| Temporal specifics               | Temporal coverage                                                                                                                                         | 1970-2015                                                                                                                                                                                                                                   |
|                                  | Frequency of updates                                                                                                                                      | Every three years                                                                                                                                                                                                                           |
| Spatial specifics                | Spatial scale [local,<br>regional, national]                                                                                                              | National                                                                                                                                                                                                                                    |
|                                  | If sub-national,<br>please specify area                                                                                                                   | The entire territory of Spain was considered<br>as the study area, which includes the Spanish<br>Iberian Peninsula and the Balearic and the<br>Canary Islands                                                                               |
|                                  | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at<br>ecological scale, fully<br>spatially explicit] | Fully spatially explicit                                                                                                                                                                                                                    |
|                                  | If aggregated, please<br>specify<br>administrative or<br>ecological scale                                                                                 | Not applicable                                                                                                                                                                                                                              |
|                                  | Spatial resolution                                                                                                                                        | 25 meters                                                                                                                                                                                                                                   |

| Methodology                            |                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General description                    | accounts for different p<br>an ecosystem classifica<br>map of ecosystem type<br>extension changes in an<br>information on all tran<br>between the periods st<br>on the changes that eac<br>turnover, stable stock,<br>has given us informatio<br>different ecosystems. | ithm capable of producing ecosystem extent<br>beriods, follow the SEEA-EA approach. From<br>ition and a land cover mapping, we generated a<br>s, which is the basic input need it to assess<br>in accounting system. This algorithm gives us<br>sformations that occurred in the ecosystems<br>udied. Including, on the one hand, information<br>ch ecosystem has undergone (net change,<br>and extension change), and on the other hand,<br>on on the flows that occurred between |
| Specific software/<br>model/ tool used | Python                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Following SEEA-EA                      | Yes/ partly/no                                                                                                                                                                                                                                                         | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| guidelines                             | If partly, please<br>specify                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Validation process                     | Yes/ no                                                                                                                                                                                                                                                                | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| and/ or uncertainty<br>assessment      | If yes, please specify                                                                                                                                                                                                                                                 | We use observational data from LUCAS to compare the results obtained on spatially explicit information.                                                                                                                                                                                                                                                                                                                                                                            |
|                                        | -                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                        | <ul> <li>Land cover, land cover change, and forestry (LULUCF)</li> <li>Supporting spatial data (Climate of peninsular Spain 1950 2007', MODIS1A, Terraclimate, CHIRPS, Copernicus ripari and coastal)</li> <li>Land Cover Survey (LUCAS) program</li> </ul>            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                        |                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Output(s)                              |                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Report(s)                              | Yes/ no                                                                                                                                                                                                                                                                | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                        | Open access [yes/ no]                                                                                                                                                                                                                                                  | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                        | Status [planned/ in<br>preparation/<br>published]<br>Note(s)                                                                                                                                                                                                           | Published                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                        | If possible, specify                                                                                                                                                                                                                                                   | https://maiaportal.eu/storage/app/media/                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                        | link/ source                                                                                                                                                                                                                                                           | MAIA SP Factsheet final.pdf                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Accounting                             | Yes/ no                                                                                                                                                                                                                                                                | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| spreadsheet(s)                         | Open access [yes/no]                                                                                                                                                                                                                                                   | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                        | Status [planned/ in<br>preparation/<br>published]                                                                                                                                                                                                                      | In preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | Note(s)                                                                                                                                                                                                                                                                | Website for Spanish accounting                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | If possible, specify<br>link/ source                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Map(s) (formatted)                     | Yes/ no                                                                                                                                                                                                                                                                | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                        | Open access [yes/ no]                                                                                                                                                                                                                                                  | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|                   | Status [planned/ in               | In preparation                                                                                   |
|-------------------|-----------------------------------|--------------------------------------------------------------------------------------------------|
|                   | preparation/                      |                                                                                                  |
|                   | published]                        |                                                                                                  |
|                   | Note(s)                           | Website for Spanish accounting                                                                   |
|                   | If possible, specify link/ source |                                                                                                  |
| Geodata           | Yes/ no                           | Yes                                                                                              |
|                   | Open access [yes/ no]             | Yes                                                                                              |
|                   | Status [planned/ in               | In preparation                                                                                   |
|                   | preparation/                      |                                                                                                  |
|                   | published]                        |                                                                                                  |
|                   | Note(s)                           | Website for Spanish accounting                                                                   |
|                   | If possible, specify              |                                                                                                  |
| Scientific        | link/ source<br>Yes/ no           | Yes                                                                                              |
| publication(s)    | Open access [yes/ no]             | No                                                                                               |
| p ubliculou (c)   | Status [planned/ in               | Published                                                                                        |
|                   | preparation/                      | i ublished                                                                                       |
|                   | published]                        |                                                                                                  |
|                   | Note(s)                           |                                                                                                  |
|                   | If possible, specify              | https://www.sciencedirect.com/science/arti                                                       |
|                   | link/ source                      | <u>cle/abs/pii/S0048969721079821</u>                                                             |
| Other output(s)   | Yes/ no                           | No                                                                                               |
|                   | Open access [yes/ no]             | Not applicable                                                                                   |
|                   | Status [planned/ in preparation/  | Not applicable                                                                                   |
|                   | published]                        |                                                                                                  |
|                   | Note(s)                           | Not applicable                                                                                   |
|                   | If possible, specify              | Not applicable                                                                                   |
|                   | link/ source                      |                                                                                                  |
|                   | T                                 |                                                                                                  |
| MAIA contribution | Support through funding [yes/ no] | Yes                                                                                              |
|                   | Personalized support              | Yes                                                                                              |
|                   | from MAIA                         |                                                                                                  |
|                   | community [yes/ no]               |                                                                                                  |
|                   | Support through                   | Yes                                                                                              |
|                   | more than one MAIA                |                                                                                                  |
|                   | activity (such as webinars and    |                                                                                                  |
|                   | workshops) [yes/ no]              |                                                                                                  |
|                   | Support through one               | No                                                                                               |
|                   | MAIA activity (such               |                                                                                                  |
|                   | as webinars and                   |                                                                                                  |
| N7 .              | workshops) [yes/ no]              |                                                                                                  |
| Notes             |                                   | e Europe D. de America D.M. N. (11) C.L. C.                                                      |
| References        | 0                                 | e-Funes, P., de Anguita, P. M., Novillo, C. J., &<br>2). How the ecosystem extent is changing: A |
|                   | -                                 | ng approach and application. Science of The                                                      |
|                   | Total Environment, 15             | • • • • • • • • • • • • • • • • • • • •                                                          |
|                   | Total Birritonnicity 15.          | = / 0 0 1                                                                                        |

## 6.10.2. Ecosystem condition account

| Country                                      |                                                                                                                                                                                                                                                                                                                                                                                                           | Spain                                                                                                                                                                   |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account type                                 |                                                                                                                                                                                                                                                                                                                                                                                                           | Ecosystem condition account                                                                                                                                             |
| Account code                                 |                                                                                                                                                                                                                                                                                                                                                                                                           | SP_EC_N_1                                                                                                                                                               |
| Funding partne                               | rs                                                                                                                                                                                                                                                                                                                                                                                                        | MAIA project, Rey Juan Carlos University                                                                                                                                |
| Other involved                               |                                                                                                                                                                                                                                                                                                                                                                                                           | Spanish Ministry of ecological transition and<br>demographic challenge; Spanish National<br>Statistical Institute                                                       |
|                                              | Planned/ ongoing/ done                                                                                                                                                                                                                                                                                                                                                                                    | Ongoing                                                                                                                                                                 |
| Status                                       | (Estimated) completion date                                                                                                                                                                                                                                                                                                                                                                               | 2022                                                                                                                                                                    |
| Ecosystems                                   | Ecosystem types                                                                                                                                                                                                                                                                                                                                                                                           | Broadleaved, Coniferous, and Mixed forests<br>for Sclerophyllous Mediterranean,<br>Continental Mediterranean, Mediterranean<br>mountain, Atlantic, Alpine, Macaronesia. |
| Temporal                                     | Temporal coverage                                                                                                                                                                                                                                                                                                                                                                                         | 2000-2015                                                                                                                                                               |
| specifics                                    | Frequency of updates                                                                                                                                                                                                                                                                                                                                                                                      | Every three years                                                                                                                                                       |
| Spatial specifics                            | Spatial scale [local, regional, national]                                                                                                                                                                                                                                                                                                                                                                 | National                                                                                                                                                                |
|                                              | If sub-national, please specify area                                                                                                                                                                                                                                                                                                                                                                      | Not applicable                                                                                                                                                          |
|                                              | Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]<br>If aggregated, please                                                                                                                                                                                                                        | Fully spatially explicit Not applicable                                                                                                                                 |
|                                              | specify administrative or ecological scale                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                         |
|                                              | Spatial resolution                                                                                                                                                                                                                                                                                                                                                                                        | 25 meters                                                                                                                                                               |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                         |
| Methodology                                  |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                         |
| General<br>description                       | Our computed based method follows the five steps of the SEEA-EA<br>condition account framework and it works used three explicit spatial<br>inputs, data of condition variables from different available data sources,<br>ecosystem types and reference areas. These inputs have been in raster<br>format. The method uses three main process steps to measure a condition<br>index by year and ecosystem. |                                                                                                                                                                         |
| Specific<br>software/<br>model/ tool<br>used | Python                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                         |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                            | Yes                                                                                                                                                                     |
| SEEA-EA<br>guidelines                        | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                 | Not applicable                                                                                                                                                          |
| Indicators used                              | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                   | Yes                                                                                                                                                                     |

| Aggregation       Yes/ no       Yes         Aggregation       Yes/ no       Yes         If yes, please specify (e.g. aggregation level and method)       We have evaluated the distance betwee weighted condition variables in the rest of the for areas, used the max-min scaler to resc condition variables in a composition variables in a composition variables in a composition variable in the rest of the for areas, used the max-min scaler to resc condition variables in a composition variable value valu                                                                                                                                                                            |                |                                                                              |                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If yes, please specify (e.g. aggregation level and method)       We have evaluated the distance betwee weighted condition variables in the reference areas with the rest of the fo areas, used the max-min scaler to resc condition variables by reference value applied the arithmetic mean for aggre these condition variables by reference value applied the arithmetic mean for aggre these condition variables in a compose condition variable.         Data source(s) <ul> <li>I. Landsat, MODIS</li> <li>JRC-soil, Land Cover Survey (LUCAS) program</li> <li>European Environment Agency</li> <li>Spanish Ministry of ecological transition and demographic challenge</li> <li>Guidos tool box</li> </ul> Output(s)     Yes/no           Report(s)<                                                                                                                                                                                                                                                                              |                | If yes, please specify                                                       | eutrophication, Species richness Forest<br>birds, Species richness Forest flora, Tree<br>cover, NDVI, GPP, Forest Area Density                                                                                                       |
| If yes, please specify (e.g. aggregation level and method)       We have evaluated the distance betwee weighted condition variables in the reference areas with the rest of the fo areas, used the max-min scaler to resc condition variables by reference value applied the arithmetic mean for aggre these condition variables in a compose condition uncertainty assessment         Validation process and/or uncertainty assessment       Yes/ no       No         Data source(s) <ul> <li>Landsat, MODIS</li> <li>JRC-soil, Land Cover Survey (LUCAS) program</li> <li>European Environment Agency</li> <li>Spanish Ministry of ecological transition and demographic challenge</li> <li>Guidos tool box</li> <li>Guidos tool box</li> <li>Status [planned/ in preparation/published]</li> <li>Note(s)</li> <li>If possible, specify link/ source</li> <li>MAIA SP Factsheet final.pdf</li> <li>Accounting spreadsheet(s)</li> <li>Qpen access [yes/ no]</li> <li>Yes</li> <li>Status [planned/ in preparation/ published]</li> <li>Note(s)</li> <li>Website for Spanish accounting</li> <li>If possible, specify link/</li> <li>Status [planned/ in preparation/ published]</li> <li>Note(s)</li> <li>Website for Spanish accounting</li> <li>If possible, specify link/</li> <li>Status [planned/ in preparation/ published]</li> <li>Note(s)</li> <li>Website for Spanish accounting</li> <li>If possible, specify link/</li> </ul> <li>Mote(s)</li>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Aggregation    | Yes/ no                                                                      | Yes                                                                                                                                                                                                                                  |
| process and/<br>or uncertainty<br>assessment       If yes, please specify       Not applicable         Data source(s)       • Landsat, MODIS       •<br>JRC-soil, Land Cover Survey (LUCAS) program         • European Environment Agency       • Spanish Ministry of ecological transition and demographic<br>challenge         • Guidos tool box         Output(s)         Report(s)       Yes/no         Yes         Open access [yes/no]       Yes         Status [planned/ in<br>preparation/published]       Published         Note(s)       If possible, specify link/<br>source       https://maiaportal.eu/storage/app/r<br>MAIA SP Factsheet final.pdf         Accounting<br>spreadsheet(s)       Yes/no       Yes         Status [planned/ in<br>preparation/ published]       Yes         Note(s)       If possible, specify link/<br>source       https://maiaportal.eu/storage/app/r<br>MAIA SP Factsheet final.pdf         Accounting<br>spreadsheet(s)       Open access [yes/ no]       Yes         Status [planned/ in<br>preparation/ published]       Website for Spanish accounting         If possible, specify link/       If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | If yes, please specify (e.g. aggregation level and                           | reference areas with the rest of the forest<br>areas, used the max-min scaler to rescale the<br>condition variables by reference values and<br>applied the arithmetic mean for aggregate<br>these condition variables in a composite |
| or uncertainty<br>assessment Data source(s)  Landsat, MODIS  JRC-soil, Land Cover Survey (LUCAS) program<br>European Environment Agency<br>Spanish Ministry of ecological transition and demographic<br>challenge Guidos tool box  Output(s) Report(s)  Yes/no Yes Open access [yes/no] Yes Status [planned/ in<br>preparation/published] Note(s) If possible, specify link/<br>spreadsheet(s) Yes/no Yes Open access [yes/no] Yes Status [planned/ in<br>preparation/published] Note(s) If possible, specify link/<br>spreadsheet(s) Open access [yes/no] Yes Status [planned/ in<br>preparation/published] Note(s) If possible, specify link/<br>surce MAIA SP Factsheet final.pdf Yes Status [planned/ in<br>preparation/published] Note(s) Yes Status [planned/ in Preparation/published] Yes Status [p | Validation     | Yes/ no                                                                      | No                                                                                                                                                                                                                                   |
| <ul> <li>JRC-soil, Land Cover Survey (LUCAS) program</li> <li>European Environment Agency</li> <li>Spanish Ministry of ecological transition and demographic challenge</li> <li>Guidos tool box</li> </ul> Output(s) Report(s)           Yes/no         Yes           Open access [yes/no]         Yes           Status [planned/ in preparation/ published]         Published           Note(s)         If possible, specify link/ source           Accounting spreadsheet(s)         Yes/no           Yes/no         Yes           Status [planned/ in preparation/ published]         https://maiaportal.eu/storage/app/r           Note(s)         If possible, specify link/ source           Accounting spreadsheet(s)         Open access [yes/ no]         Yes           Status [planned/ in preparation/ published]         Yes           Note(s)         Yes         Yes           If possible, specify link/ source         Yes           MalA SP Factsheet final.pdf         Yes           Status [planned/ in preparation/ published]         Yes           Note(s)         Website for Spanish accounting           If possible, specify link/         Website for Spanish accounting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | or uncertainty | •                                                                            | Not applicable                                                                                                                                                                                                                       |
| <ul> <li>JRC-soil, Land Cover Survey (LUCAS) program</li> <li>European Environment Agency</li> <li>Spanish Ministry of ecological transition and demographic challenge</li> <li>Guidos tool box</li> </ul> Output(s) Report(s)           Yes/no         Yes           Open access [yes/no]         Yes           Status [planned/ in preparation/ published]         Published           Note(s)         If possible, specify link/ source           Accounting spreadsheet(s)         Yes/no           Yes/no         Yes           Status [planned/ in preparation/ published]         https://maiaportal.eu/storage/app/r           Note(s)         If possible, specify link/ source           Accounting spreadsheet(s)         Yes/no           Yes         Yes           If possible, specify link/ source         Yes           Yes/no         Yes           Status [planned/ in preparation/ published]         https://maiaportal.eu/storage/app/r           Note(s)         Yes           Status [planned/ in preparation/ published]         Yes           Note(s)         Website for Spanish accounting           If possible, specify link/         Website for Spanish accounting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                                                                              |                                                                                                                                                                                                                                      |
| Report(s)Yes/noYesOpen access [yes/no]YesStatus [planned/ in<br>preparation/ published]PublishedNote(s)If possible, specify link/<br>sourcehttps://maiaportal.eu/storage/app/r<br>MAIA SP Factsheet final.pdfAccounting<br>spreadsheet(s)Yes/noYesOpen access [yes/no]YesStatus [planned/ in<br>preparation/ published]YesNote(s)If possible, specify link/<br>Status [planned/ in<br>preparation/ published]Note(s)Website for Spanish accountingIf possible, specify link/If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                | <ul> <li>European Environm</li> <li>Spanish Ministry of challenge</li> </ul> | ent Agency                                                                                                                                                                                                                           |
| Report(s)Yes/noYesOpen access [yes/no]YesStatus [planned/ in<br>preparation/ published]PublishedNote(s)If possible, specify link/<br>sourcehttps://maiaportal.eu/storage/app/r<br>MAIA SP Factsheet final.pdfAccounting<br>spreadsheet(s)Yes/noYesOpen access [yes/no]YesStatus [planned/ in<br>preparation/ published]YesNote(s)If possible, specify link/<br>Status [planned/ in<br>preparation/ published]Note(s)Website for Spanish accountingIf possible, specify link/If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                                                                              |                                                                                                                                                                                                                                      |
| Open access [yes/ no]YesStatus [planned/ in<br>preparation/ published]PublishedNote(s)If possible, specify link/<br>sourcehttps://maiaportal.eu/storage/app/r<br>MAIA SP Factsheet final.pdfAccounting<br>spreadsheet(s)Yes/noYesOpen access [yes/ no]YesStatus [planned/ in<br>preparation/ published]YesNote(s)If possible, specify link/<br>sourceYesIf possible, specify link/<br>spreadsheet(s)If possible, specify link/<br>status [planned/ in<br>preparation/ published]YesIf possible, specify link/<br>specify link/Website for Spanish accounting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |                                                                              |                                                                                                                                                                                                                                      |
| Status [planned/ in preparation/ published]       Published         Note(s)       If possible, specify link/ source       https://maiaportal.eu/storage/app/r         Accounting spreadsheet(s)       Yes/no       Yes         Open access [yes/ no]       Yes         Status [planned/ in preparation/ published]       Note(s)         Note(s)       Website for Spanish accounting         If possible, specify link/       If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Report(s)      | Yes/ no                                                                      | Yes                                                                                                                                                                                                                                  |
| preparation/ published]         Note(s)         If possible, specify link/<br>source       https://maiaportal.eu/storage/app/r         Accounting<br>spreadsheet(s)       Yes/no         Yes/no       Yes         Open access [yes/no]       Yes         Status [planned/ in<br>preparation/ published]       Yes         Note(s)       Website for Spanish accounting         If possible, specify link/       If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                | Open access [yes/ no]                                                        | Yes                                                                                                                                                                                                                                  |
| If possible, specify link/<br>source       https://maiaportal.eu/storage/app/m         Accounting<br>spreadsheet(s)       Yes/no       Yes         Open access [yes/no]       Yes         Status [planned/ in<br>preparation/ published]       Yes         Note(s)       Website for Spanish accounting         If possible, specify link/       Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -              | preparation/ published]                                                      | Published                                                                                                                                                                                                                            |
| spreadsheet(s)       Open access [yes/ no]       Yes         Status [planned/ in preparation/ published]       Preparation/ published]       Note(s)         Note(s)       Website for Spanish accounting         If possible, specify link/       If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                | If possible, specify link/<br>source                                         |                                                                                                                                                                                                                                      |
| Status [planned/ in preparation/ published]         Note(s)       Website for Spanish accounting         If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                | · ·                                                                          |                                                                                                                                                                                                                                      |
| preparation/published]           Note(s)         Website for Spanish accounting           If possible, specify link/         If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | spreadsheet(s) | 1 0, 1                                                                       | Yes                                                                                                                                                                                                                                  |
| If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                | /                                                                            |                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                | .,                                                                           | Website for Spanish accounting                                                                                                                                                                                                       |
| source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                | If possible, specify link/<br>source                                         |                                                                                                                                                                                                                                      |
| Map(s) Yes/no Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Map(s)         | Yes/ no                                                                      | Yes                                                                                                                                                                                                                                  |
| (formatted) Open access [yes/ no] Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                | Open access [yes/no]                                                         | Yes                                                                                                                                                                                                                                  |
| Status [planned/ in<br>preparation/ published]     In preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                | Status [planned/ in                                                          | In preparation                                                                                                                                                                                                                       |
| Note(s) Website for Spanish accounting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                                                                              | Website for Spanish accounting                                                                                                                                                                                                       |
| If possible, specify link/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -              | Note(s)                                                                      | website for spanish accounting                                                                                                                                                                                                       |
| Source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                | .,                                                                           |                                                                                                                                                                                                                                      |
| Geodata Yes/no Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Geodata        | If possible, specify link/<br>source                                         |                                                                                                                                                                                                                                      |

|                 |                             | <b>y</b>                       |
|-----------------|-----------------------------|--------------------------------|
|                 | Status [planned/ in         | In preparation                 |
|                 | preparation/ published]     |                                |
|                 | Note(s)                     | Website for Spanish accounting |
|                 | If possible, specify link/  |                                |
|                 | source                      |                                |
| Scientific      | Yes/ no                     | Yes                            |
| publication(s)  | Open access [yes/ no]       |                                |
|                 | Status [planned/ in         | In preparation                 |
|                 | preparation/ published]     |                                |
|                 | Note(s)                     |                                |
|                 | If possible, specify link/  |                                |
|                 | source                      |                                |
| Other output(s) | Yes/ no                     | No                             |
|                 | Open access [yes/ no]       | Not applicable                 |
|                 | Status [planned/ in         | Not applicable                 |
|                 | preparation/ published]     |                                |
|                 | Note(s)                     | Not applicable                 |
|                 | If possible, specify link/  | Not applicable                 |
|                 | source                      |                                |
|                 |                             |                                |
| MAIA            | Support through funding     | Yes                            |
| contribution    | [yes/ no]                   |                                |
|                 | Personalized support from   | No                             |
|                 | MAIA community [yes/ no]    |                                |
|                 | Support through more        | Yes                            |
|                 | than one MAIA activity      |                                |
|                 | (such as webinars and       |                                |
|                 | workshops) <i>[yes/ no]</i> |                                |
|                 | Support through one MAIA    | Yes                            |
|                 | activity (such as webinars  |                                |
|                 | and workshops) [yes/ no]    |                                |
| Notes           |                             |                                |
| References      |                             |                                |

# 6.10.3. Ecosystem service accounts - biophysical

| Country                 |                             | Spain                                                                                                                             |
|-------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Account type            |                             | Ecosystem service account (biophysical)                                                                                           |
| Account code            |                             | SP_ESb_N_1                                                                                                                        |
| Funding partners        |                             | MAIA project, Rey Juan Carlos University                                                                                          |
| Other involved partners |                             | Spanish Ministry of ecological transition<br>and demographic challenge; Spanish<br>National Statistical Institute                 |
|                         | Planned/ ongoing/ done      | Ongoing                                                                                                                           |
| Status                  | (Estimated) completion date | 2022                                                                                                                              |
| Ecosystems              | Ecosystem types             | Sclerophyllous Mediterranean, Continental<br>Mediterranean, Mediterranean mountain,<br>Atlantic, Alpine, Macaronesia, Arid zones, |

|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Coastal areas, Other lands, Wetlands, Rivers<br>& lakes, Perennial woody crops, Annual<br>crops, Urban. |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Ecosystem                                    | Ecosystem service                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Regulation services                                                                                     |
| service                                      | category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                         |
|                                              | Ecosystem service                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Carbon storage and sequestration                                                                        |
| Temporal                                     | Temporal coverage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2000-2015                                                                                               |
| specifics                                    | Frequency of updates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Every three years                                                                                       |
| Spatial                                      | Spatial scale <i>[local,</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | National                                                                                                |
| specifics                                    | regional, national]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                         |
| •                                            | If sub-national, please                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                         |
|                                              | specify area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                         |
|                                              | Spatial coverage [not                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Fully spatially explicit                                                                                |
|                                              | spatially explicit,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                         |
|                                              | aggregated at                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                         |
|                                              | administrative scale,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                         |
|                                              | aggregated at ecological                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                         |
|                                              | scale, fully spatially                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                         |
|                                              | explicit]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                         |
|                                              | If aggregated, please                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                         |
|                                              | specify administrative or                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                         |
|                                              | ecological scale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 25 meters                                                                                               |
|                                              | Spatial resolution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 25 meters                                                                                               |
| NG -1 1 1                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                         |
| Methodology                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                         |
| General<br>description                       | The InVEST model developed by Stanford University is used for carbon<br>storage and sequestration services. The InVEST Carbon Storage and<br>Sequestration model estimates the current amount of carbon stored in a<br>landscape and values the amount of sequestered carbon over time. First,<br>it aggregates the biophysical amount of carbon stored in four carbon<br>pools (aboveground living biomass, belowground living biomass, soil, and<br>dead organic matter) based on land use/land cover (LULC) maps<br>provided by users. |                                                                                                         |
| Specific                                     | The InVEST Carbon Storage and Sequestration model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                         |
| software/                                    | (https://naturalcapitalproject.stanford.edu/software/invest-                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                         |
| model/ tool                                  | models/carbon)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                         |
| used                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                         |
| Following                                    | Yes/ partly/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Yes                                                                                                     |
| SEEA-EA                                      | If partly, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Not applicable                                                                                          |
| guidelines                                   | Vac/na                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Vac                                                                                                     |
| Indicators used                              | Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes                                                                                                     |
|                                              | If yes, please specify                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Carbon pool by ecosystem                                                                                |
| Aggregation                                  | Yes/no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No                                                                                                      |
|                                              | If yes, please specify (e.g.<br>aggregation level and<br>method)                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Not applicable                                                                                          |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                         |
| Validation                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No                                                                                                      |
|                                              | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                         |
| Validation<br>process and/<br>or uncertainty |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No<br>Not applicable                                                                                    |
| process and/                                 | Yes/ no                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                         |

| Data source(s)          Data source(s)         Output(s)         Report(s) | Maps (NASA) <ul> <li>Soil Organic Carbon</li> </ul>                                                                        |                |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------|
|                                                                            | Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)<br>If possible, specify link/<br>source |                |
| Accounting                                                                 | Yes/ no                                                                                                                    | Yes            |
| spreadsheet(s)                                                             | Open access [yes/ no]                                                                                                      | No             |
|                                                                            | Status [planned/ in<br>preparation/ published]<br>Note(s)                                                                  | In preparation |
|                                                                            | If possible, specify link/<br>source                                                                                       |                |
| Map(s)                                                                     | Yes/ no                                                                                                                    | Yes            |
| (formatted)                                                                | Open access [yes/ no]                                                                                                      | No             |
|                                                                            | Status [planned/ in<br>preparation/ published]                                                                             | In preparation |
|                                                                            | Note(s)<br>If possible, specify link/<br>source                                                                            |                |
| Geodata                                                                    | Yes/ no                                                                                                                    | Yes            |
|                                                                            | Open access [yes/ no]                                                                                                      | No             |
|                                                                            | Status [planned/ in                                                                                                        | In preparation |
|                                                                            | preparation/published]<br>Note(s)                                                                                          |                |
|                                                                            | If possible, specify link/<br>source                                                                                       |                |
| Scientific<br>publication(s)                                               | Yes/ no                                                                                                                    | Yes            |
|                                                                            | Open access [yes/ no]                                                                                                      | No             |
|                                                                            | Status [planned/ in<br>preparation/ published]                                                                             | In preparation |
|                                                                            | Note(s)                                                                                                                    |                |
|                                                                            | If possible, specify link/                                                                                                 |                |
| Other output(c)                                                            | source                                                                                                                     | No             |
| Other output(s)                                                            | Yes/no                                                                                                                     | No             |
|                                                                            | Open access [yes/ no]                                                                                                      |                |
|                                                                            | Status [planned/ in<br>preparation/ published]                                                                             |                |
|                                                                            | Note(s)                                                                                                                    |                |

|              | If possible, specify link/ |     |
|--------------|----------------------------|-----|
|              | source                     |     |
|              |                            |     |
| MAIA         | Support through funding    | Yes |
| contribution | [yes/ no]                  |     |
|              | Personalized support from  | No  |
|              | MAIA community [yes/ no]   |     |
|              | Support through more       | Yes |
|              | than one MAIA activity     |     |
|              | (such as webinars and      |     |
|              | workshops) [yes/ no]       |     |
|              | Support through one MAIA   | No  |
|              | activity (such as webinars |     |
|              | and workshops) [yes/ no]   |     |
| Notes        |                            |     |
| References   |                            |     |

| Country              |                                                                                                                                                                                                                                                                                                                                                      | Spain                                    |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Account type         |                                                                                                                                                                                                                                                                                                                                                      | Ecosystem service account (biophysical)  |
| Account code         |                                                                                                                                                                                                                                                                                                                                                      | SP_ESb_N_2                               |
| Funding partne       | rs                                                                                                                                                                                                                                                                                                                                                   | MAIA project, Rey Juan Carlos University |
| Other involved       | partners                                                                                                                                                                                                                                                                                                                                             |                                          |
|                      | Planned/ ongoing/ done                                                                                                                                                                                                                                                                                                                               | Ongoing                                  |
| Status               | (Estimated) completion date                                                                                                                                                                                                                                                                                                                          | 2023                                     |
| Ecosystems           | Ecosystem types                                                                                                                                                                                                                                                                                                                                      | Forest                                   |
| Ecosystem<br>service | Ecosystem service<br>category                                                                                                                                                                                                                                                                                                                        | Cultural                                 |
|                      | Ecosystem service                                                                                                                                                                                                                                                                                                                                    | Nature recreation                        |
| Temporal             | Temporal coverage                                                                                                                                                                                                                                                                                                                                    | 2021                                     |
| specifics            | Frequency of updates                                                                                                                                                                                                                                                                                                                                 |                                          |
| Spatial<br>specifics | Spatial scale [local,<br>regional, national]<br>If sub-national, please<br>specify area<br>Spatial coverage [not<br>spatially explicit,<br>aggregated at<br>administrative scale,<br>aggregated at ecological<br>scale, fully spatially<br>explicit]<br>If aggregated, please<br>specify administrative or<br>ecological scale<br>Spatial resolution | National                                 |
|                      |                                                                                                                                                                                                                                                                                                                                                      |                                          |
| Methodology          |                                                                                                                                                                                                                                                                                                                                                      |                                          |

| General         | We compare models of landscape quality using Flickr and deep learning     |                                          |
|-----------------|---------------------------------------------------------------------------|------------------------------------------|
| description     | with an environmental indicator model, and explore their synergistic use. |                                          |
| Specific        | R software, and R studio                                                  |                                          |
| software/       |                                                                           |                                          |
| model/ tool     |                                                                           |                                          |
| used            |                                                                           |                                          |
| Following       | Yes/ partly/no                                                            | Party                                    |
| SEEA-EA         | If partly, please specify                                                 |                                          |
| guidelines      |                                                                           |                                          |
| Indicators used | Yes/ no                                                                   | Yes                                      |
|                 | If yes, please specify                                                    | Environmental indicator                  |
| Aggregation     | Yes/ no                                                                   | No                                       |
|                 | If yes, please specify (e.g.<br>aggregation level and<br>method)          |                                          |
| Validation      | Yes/ no                                                                   | No                                       |
| process and/    | If yes, please specify                                                    |                                          |
| or uncertainty  |                                                                           |                                          |
| assessment      |                                                                           |                                          |
|                 |                                                                           |                                          |
| Data source(s)  | Flickr images                                                             |                                          |
| Output(s)       |                                                                           |                                          |
| Report(s)       | Yes/ no                                                                   | Yes                                      |
|                 | Open access [yes/ no]                                                     | Yes                                      |
|                 | Status [planned/ in                                                       | Published                                |
|                 | preparation/ published]                                                   | Tublisheu                                |
|                 | Note(s)                                                                   |                                          |
|                 | If possible, specify link/                                                | https://maiaportal.eu/storage/app/media/ |
|                 | source                                                                    | MAIA_SP_Factsheet_final.pdf              |
| Accounting      | Yes/no                                                                    | Yes                                      |
| spreadsheet(s)  | Open access [yes/ no]                                                     | Yes                                      |
|                 | Status [planned/ in                                                       |                                          |
|                 | preparation/ published]                                                   |                                          |
|                 | Note(s)                                                                   | Website for Spanish accounting           |
|                 | If possible, specify link/                                                | · · ·                                    |
|                 | source                                                                    |                                          |
| Map(s)          | Yes/ no                                                                   | Yes                                      |
| (formatted)     | Open access [yes/ no]                                                     | Yes                                      |
|                 | Status [planned/ in                                                       | In preparation                           |
|                 | preparation/ published]                                                   |                                          |
|                 | Note(s)                                                                   | Website for Spanish accounting           |
|                 | If possible, specify link/                                                |                                          |
|                 | source                                                                    |                                          |
| Geodata         | Yes/ no                                                                   | Yes                                      |
|                 | Open access [yes/ no]                                                     | Yes                                      |
|                 | Status [planned/ in                                                       | In preparation                           |
|                 | preparation/published]                                                    |                                          |
|                 | Note(s)                                                                   | Website for Spanish accounting           |

|                 | If possible, specify link/ |         |
|-----------------|----------------------------|---------|
|                 | source                     |         |
| Scientific      | Yes/ no                    | Yes     |
| publication(s)  | Open access [yes/ no]      |         |
|                 | Status [planned/ in        | Planned |
|                 | preparation/ published]    |         |
|                 | Note(s)                    |         |
|                 | If possible, specify link/ |         |
|                 | source                     |         |
| Other output(s) | Yes/ no                    |         |
|                 | Open access [yes/ no]      |         |
|                 | Status [planned/ in        |         |
|                 | preparation/ published]    |         |
|                 | Note(s)                    |         |
|                 | If possible, specify link/ |         |
|                 | source                     |         |
|                 |                            |         |
| MAIA            | Support through funding    | Yes     |
| contribution    | [yes/ no]                  |         |
|                 | Personalized support from  | Yes     |
|                 | MAIA community [yes/ no]   |         |
|                 | Support through more       | Yes     |
|                 | than one MAIA activity     |         |
|                 | (such as webinars and      |         |
|                 | workshops) [yes/ no]       |         |
|                 | Support through one MAIA   | No      |
|                 | activity (such as webinars |         |
|                 | and workshops) [yes/ no]   |         |
| Notes           |                            |         |
| References      |                            |         |

# 6.10.4. Ecosystem service accounts – monetary

| Country          |                        | Spain                                    |
|------------------|------------------------|------------------------------------------|
| Account type     |                        | Ecosystem service account (biophysical)  |
| Account code     |                        | SP_ESm_N_1                               |
| Funding partners |                        | MAIA project, Rey Juan Carlos University |
| Other involved   | partners               |                                          |
|                  | Planned/ ongoing/ done | Ongoing                                  |
| Status           | (Estimated) completion | 2023                                     |
|                  | date                   |                                          |
| Ecosystems       | Ecosystem types        | Forest                                   |
| Ecosystem        | Ecosystem service      | Regulating                               |
| service          | category               |                                          |
|                  | Ecosystem service      | Carbon storage                           |
| Temporal         | Temporal coverage      | 2000,2015                                |
| specifics        | Frequency of updates   |                                          |

| Spatial         | Spatial agala (logal         | National                                     |
|-----------------|------------------------------|----------------------------------------------|
| Spatial         | Spatial scale <i>[local,</i> | National                                     |
| specifics       | regional, national]          |                                              |
|                 | If sub-national, please      |                                              |
|                 | specify area                 |                                              |
|                 | Spatial coverage [not        |                                              |
|                 | spatially explicit,          |                                              |
|                 | aggregated at                |                                              |
|                 | administrative scale,        |                                              |
|                 | aggregated at ecological     |                                              |
|                 | scale, fully spatially       |                                              |
|                 | explicit]                    |                                              |
|                 | If aggregated, please        |                                              |
|                 | specify administrative or    |                                              |
|                 | ecological scale             |                                              |
|                 | Spatial resolution           |                                              |
|                 | Spatial resolution           |                                              |
|                 |                              |                                              |
| Methodology     |                              |                                              |
| General         | Carbon Storage model uses    | maps of land use along with stocks in four   |
| description     |                              | biomass, belowground biomass, soil, and dead |
|                 | organic matter) to estimate  | the amount of carbon currently stored in a   |
|                 | landscape or the amount of   | carbon sequestered over time.                |
| Specific        | InVest                       | *                                            |
| software/       |                              |                                              |
| model/ tool     |                              |                                              |
| used            |                              |                                              |
| Following       | Yes/ partly/no               | Yes                                          |
| SEEA-EA         |                              |                                              |
| guidelines      | If partly, please specify    |                                              |
| Indicators used | Vac/no                       | Yes                                          |
| mulcators used  | Yes/no                       |                                              |
|                 | If yes, please specify       | Price of Carbon, Annual Market Discount      |
| -               |                              | Rate, Annual Price Change                    |
| Aggregation     | Yes/ no                      | Yes                                          |
|                 | If yes, please specify (e.g. |                                              |
|                 | aggregation level and        |                                              |
|                 | method)                      |                                              |
| Validation      | Yes/ no                      | No                                           |
| process and/    | If yes, please specify       |                                              |
| or uncertainty  | in yes, picase specify       |                                              |
| assessment      |                              |                                              |
|                 |                              | l                                            |
| Data cource(c)  | FII carbon price             |                                              |
| Data source(s)  | EU carbon price              |                                              |
|                 |                              |                                              |
| Output(s)       |                              |                                              |
| Report(s)       | Yes/ no                      | Yes                                          |
|                 | Open access [yes/ no]        | Yes                                          |
|                 | Status [planned/ in          | Published                                    |
|                 | preparation/ published]      |                                              |
|                 | Note(s)                      |                                              |
|                 |                              |                                              |
|                 | If possible, specify link/   | https://maiaportal.eu/storage/app/media/     |
|                 | source                       | MAIA_SP_Factsheet_final.pdf                  |

| Accounting      | Yes/ no                                         | Yes                            |
|-----------------|-------------------------------------------------|--------------------------------|
| spreadsheet(s)  | Open access [yes/ no]                           | Yes                            |
| spreausneet(s)  | Status [planned/ in                             |                                |
|                 | preparation/ published]                         |                                |
|                 | Note(s)                                         | Website for Spanish accounting |
|                 | If possible, specify link/                      |                                |
|                 | source                                          |                                |
| Map(s)          | Yes/ no                                         | Yes                            |
| (formatted)     | Open access [yes/ no]                           | Yes                            |
| (101111110004)  | Status [planned/ in                             | In preparation                 |
|                 | preparation/ published]                         | in preparation                 |
|                 | Note(s)                                         | Website for Spanish accounting |
|                 | If possible, specify link/                      |                                |
|                 | source                                          |                                |
| Geodata         | Yes/ no                                         | Yes                            |
|                 | Open access [yes/ no]                           | Yes                            |
|                 | Status [planned/ in                             | In preparation                 |
|                 | preparation/ published]                         |                                |
|                 | Note(s)                                         | Website for Spanish accounting |
|                 | If possible, specify link/                      |                                |
|                 | source                                          |                                |
| Scientific      | Yes/ no                                         | Yes                            |
| publication(s)  | Open access [yes/ no]                           |                                |
|                 | Status [planned/ in                             | Planned                        |
|                 | preparation/ published]                         |                                |
|                 | Note(s)                                         |                                |
|                 | If possible, specify link/                      |                                |
|                 | source                                          |                                |
| Other output(s) | Yes/ no                                         |                                |
|                 | Open access [yes/ no]                           |                                |
|                 | Status [planned/ in                             |                                |
|                 | preparation/ published]                         |                                |
|                 | Note(s)                                         |                                |
|                 | If possible, specify link/                      |                                |
|                 | source                                          |                                |
|                 |                                                 |                                |
| MAIA            | Support through funding                         | Yes                            |
| contribution    | [yes/ no]                                       |                                |
|                 | Personalized support from                       | Yes                            |
|                 | MAIA community [yes/ no]                        |                                |
|                 | Support through more                            | Yes                            |
|                 | than one MAIA activity<br>(such as webinars and |                                |
|                 | workshops) [yes/ no]                            |                                |
|                 | Support through one MAIA                        | No                             |
|                 | activity (such as webinars                      |                                |
|                 | and workshops) [yes/ no]                        |                                |
| Notes           |                                                 |                                |
| References      |                                                 |                                |
|                 | 1                                               |                                |

| Country                |                                                                      | Spain                                                                                           |
|------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Account type           |                                                                      | Ecosystem service account (monetary)                                                            |
| Account code           |                                                                      | SP_ESm_N_2                                                                                      |
| Funding partners       |                                                                      | MAIA project                                                                                    |
| Other involved         |                                                                      | CSIC, URIC                                                                                      |
| other monie            | Planned/ ongoing/ done                                               | Ongoing                                                                                         |
| Status                 | (Estimated) completion                                               | 2022                                                                                            |
|                        | date                                                                 |                                                                                                 |
| Ecosystems             | Ecosystem types                                                      | Forest, shrubland and grassland                                                                 |
| Ecosystem              | Ecosystem service                                                    | cultural services                                                                               |
| service                | category                                                             |                                                                                                 |
|                        | Ecosystem service                                                    | Nature recreation                                                                               |
| Temporal               | Temporal coverage                                                    | 2022                                                                                            |
| specifics              | Frequency of updates                                                 | One time study                                                                                  |
| Spatial                | Spatial scale <i>[local,</i>                                         | Regional                                                                                        |
| specifics              | regional, national]                                                  |                                                                                                 |
|                        | If sub-national, please                                              | Protected areas (National parks)                                                                |
|                        | specify area                                                         |                                                                                                 |
|                        | Spatial coverage [not spatially explicit,                            | Aggregated at ecological scale                                                                  |
|                        | aggregated at                                                        |                                                                                                 |
|                        | administrative scale,                                                |                                                                                                 |
|                        | aggregated at ecological                                             |                                                                                                 |
|                        | scale, fully spatially                                               |                                                                                                 |
|                        | explicit]                                                            |                                                                                                 |
|                        | If aggregated, please                                                | Forest, shrubland and grassland into                                                            |
|                        | specify administrative or                                            | national parks                                                                                  |
|                        | ecological scale                                                     |                                                                                                 |
|                        | Spatial resolution                                                   |                                                                                                 |
| Mathadalagy            |                                                                      |                                                                                                 |
| Methodology            | The choice method can be u                                           | and to actimate according to be sintually                                                       |
| General<br>description |                                                                      | sed to estimate economic values for virtually<br>ental service and can be used to estimate non- |
| uescription            |                                                                      | the choice method asks the respondent to state                                                  |
|                        |                                                                      | roup of environmental services or                                                               |
|                        | characteristics, at a given price or cost to the individual, and and |                                                                                                 |
|                        | group of environmental characteristics at a different price or cost. |                                                                                                 |
| Specific               | Choice method                                                        |                                                                                                 |
| software/              |                                                                      |                                                                                                 |
| model/ tool            |                                                                      |                                                                                                 |
| used<br>Following      | Vos ( narthu (no                                                     | Vac                                                                                             |
| Following<br>SEEA-EA   | Yes/ partly/no                                                       | Yes                                                                                             |
| guidelines             | If partly, please specify                                            | Not applicable                                                                                  |
| Indicators used        | Yes/ no                                                              | Yes                                                                                             |
|                        | If yes, please specify                                               | Forest condition, species richness, IRPF                                                        |
|                        | , , r                                                                | values                                                                                          |
| Aggregation            | Yes/ no                                                              | No                                                                                              |

|                                              | If yes, please specify (e.g. aggregation level and                                               | Not applicable |
|----------------------------------------------|--------------------------------------------------------------------------------------------------|----------------|
|                                              | method)                                                                                          |                |
| Validation                                   | Yes/ no                                                                                          | No             |
| process and/<br>or uncertainty<br>assessment | If yes, please specify                                                                           | Not applicable |
|                                              |                                                                                                  |                |
| Data source(s)                               | <ul> <li>Survey to populatio</li> <li>Forest condition acc</li> <li>Biodiversity data</li> </ul> |                |
|                                              |                                                                                                  |                |
| Output(s)                                    |                                                                                                  |                |
| Report(s)                                    | Yes/no                                                                                           | Yes            |
|                                              | Open access [yes/ no]                                                                            | No             |
|                                              | Status [planned/ in                                                                              | Planned        |
|                                              | preparation/ published]                                                                          |                |
|                                              | Note(s)                                                                                          |                |
|                                              | If possible, specify link/<br>source                                                             |                |
| Accounting                                   | Yes/ no                                                                                          | Yes            |
| spreadsheet(s)                               | Open access [yes/ no]                                                                            | No             |
|                                              | Status [planned/ in<br>preparation/ published]                                                   | Planned        |
|                                              | Note(s)                                                                                          |                |
|                                              | If possible, specify link/<br>source                                                             |                |
| Map(s)                                       | Yes/ no                                                                                          | No             |
| (formatted)                                  | Open access [yes/ no]                                                                            |                |
|                                              | Status [planned/ in<br>preparation/ published]                                                   |                |
|                                              | Note(s)                                                                                          |                |
|                                              | If possible, specify link/<br>source                                                             |                |
| Geodata                                      | Yes/ no                                                                                          | No             |
|                                              | Open access [yes/ no]                                                                            |                |
|                                              | Status [planned/ in                                                                              |                |
|                                              | preparation/ published]                                                                          |                |
|                                              | Note(s)                                                                                          |                |
|                                              | If possible, specify link/<br>source                                                             |                |
| Scientific                                   | Yes/ no                                                                                          | Yes            |
| publication(s)                               | Open access [yes/ no]                                                                            | No             |
|                                              | Status [planned/ in<br>preparation/ published]                                                   | Planned        |
|                                              | Note(s)                                                                                          |                |
|                                              | If possible, specify link/<br>source                                                             |                |
| Other output(s)                              | Yes/no                                                                                           | No             |
|                                              |                                                                                                  |                |

|                      | Open access [yes/ no]<br>Status [planned/ in<br>preparation/ published]<br>Note(s)              |     |
|----------------------|-------------------------------------------------------------------------------------------------|-----|
|                      | If possible, specify link/<br>source                                                            |     |
|                      |                                                                                                 |     |
| MAIA<br>contribution | Support through funding [yes/ no]                                                               | Yes |
|                      | Personalized support from MAIA community [yes/ no]                                              | No  |
|                      | Support through more<br>than one MAIA activity<br>(such as webinars and<br>workshops) [yes/ no] | No  |
|                      | Support through one MAIA<br>activity (such as webinars<br>and workshops) [yes/ no]              | No  |
| Notes                |                                                                                                 |     |
| References           |                                                                                                 |     |

<sup>&</sup>lt;sup>i</sup> The BfN is an official MAIA Partner. Nevertheless, they don't receive any direct financial support from the MAIA project. They fund the accounting activities from the IOER through the research projects Accounting I and II. Therefore, the account is considered MAIA-supported even though the official funding cannot be dedicated to the MAIA project directly.