MAIA

Mapping and Assessment for
Integrated ecosystem Accounting

Synthesis report on final outcomes of mainstreaming accounts in the participating member states

Deliverable 3.4

Lead Authors: Sabine Lange (LUH), Benjamin Burkhard (LUH), Adrián García Bruzón (URJC) and Fernando Santos-Martín (URJC)

Contributing authors: Dimopoulos Panayotis (UPAT), Ioannis P. Kokkoris (UPAT), Konstantinos Kotsiras (UPAT), Leo De Nocker (Vito), Harold Levrel (CIRED; AgroParisTech), Adrien Comte (CIRED; AgroParisTech), Oinonen Soile (SYKE), Pohjola Johanna (SYKE), Salminen Jani (SYKE), Markku Viitasalo (SYKE), Elina Virtanen (SYKE), Pekka Hurskainen (SYKE), Peter Kullberg (SYKE), Petteri Vihervaara (SYKE), Hristina Prodanova (NIGGG-BAS; LUH), Boian Koulov (NIGGG-BAS), Lieven De Smet (INBO), Raïsa Carmen (INBO), Radoslav Stanchev (ExEA), Genoveva Popova (ExEA), Ivailo Rangelov (NSI), Ioanna Grammatikopoulou (Czech academy of sciences), Davina Vačkářová (CZEG), Eva Horváthová (CZEG), Petr Krpec (CZEG), Linda de Jongh (Statistics Netherlands), David N. Barton (NINA), Alejandro Caparrós (CSIC), Ana Luisa Solera Carnicero (INE), Per Arild Garnåsjordet (SSB), Hanne Marit Dalen (SSB), Lars Lindholt (SSB), Burkhard Schweppe-Kraft (BfN), Sophie Meier (IOER), Ralf-Uwe Syrbe (IOER), Karsten Grunewald (IOER)

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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 (NCA) and ecosystem accounting (EA) 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 core and thematic accounts. In MAIA, a flexible approach is followed, allowing for adaptation of the SEEA-EA framework to the conditions of each individual EU MS. 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 accounting projects. 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[1]) 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 EA in the participating MS and generating a holistic overview on the progress (including past, present and future activities) was published in the MAIA Deliverables D3.1 and D3.2, respectively. In addition to that, in order to communicate and disseminate the information on the progress in the participating MS, so called "Country Fact Sheets" have been developed and published open-access on the MAIA website. In order to facilitate the mainstreaming of EA, with MAIA Deliverable D3.3 an open access and detailed report on the individual MAIA-supported national efforts has been published, including account-specific information on e.g. account objectives, input data, methodologies as well as specifics of the MAIA support, focussing on SEEA-EA core accounts. As final MAIA Deliverable from WP3, Deliverable D3.4 can be regarded as an overarching synthesis of the WP3 efforts. It focuses on the core essence of the MAIA project – mainstreaming NCA – as well as on country-specific experiences with challenges and issues with regard to NCA implementation. For the identified issues, also, the lessons learned and (potential) solutions, including the MAIA contribution are outlined and discussed. Finally, based upon all these insights, we propose a recommendation for NCA mainstreaming in the form of a stepwise implementation approach.

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[1] https://seea.un.org/ecosystem-accounting/biophysical-modelling

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. Within this MAIA Deliverable D3.4, efforts and progress of the MAIA MS with regard to NCA implementation are synthesized. In order to facilitate the EA mainstreaming in the countries, the individual national activities have been inspected in more detail.

Thereby, the aim of Deliverable D3.4. was in particular to synthesize experiences in the MS and builds upon a variety of different MAIA activities. Next to the process of mainstreaming EA, specific issues and challenges that the MS encountered throughout the MAIA project are highlighted. The MS' experiences with these issues and challenges are discussed and their progress in overcoming the issues are presented. Thereby, the focus lies on the identification and synthesise of the MS' solutions and lessons learned. The synthesis highlights that shared learning is promoted throughout project implementation, e.g. by exchanging experiences during workshops, organizing thematic sessions in order to share technical skills and/ or knowledge related to specific constraints or opportunities for implementing accounts.

The vivid (international) cooperation and expert network of the MAIA community enabled many MS to move forward in mainstreaming EA and to achieve progress in a variety of encountered issues and challenges. Nevertheless, even though, generally, extensive progress has been achieved by many MAIA MS, for some issues and challenges the progress is still rather limited, in particular when it comes to the issue "lack of data/ data access". In order to support and guide future NCA in MAIA MS and beyond, we propose a stepwise approach towards EA mainstreaming and implementation.

1. INTRODUCTION

In this Deliverable D3.4, we focus on "Coordination and integration of mainstreaming activities in all participating countries". We report on mainstreaming EA in the 9 EU member states (MS) and Norway participating in MAIA, highlighting NCA progress and experiences of the MS. Within the Deliverable D3.4, next to synthesizing MAIA mainstreaming activities, we focus on discussing main challenges and issues that the MAIA MS faced during the implementation of NCA in their countries. Thereby, the focus lies on the identification of the progress that the MS made. In that context, we aim at an integration of solutions and lessons learned from all participating countries in mainstreaming their EA at different scales with regard to the different issues. The role of the MAIA project in the progress of overcoming the issues and challenges is outlined as well.

In addition to that, so-called "Success Stories" have been integrated into the Deliverable. The idea behind these Success Stories is to present some highlights of specific progress in the NCA implementation process during the activities of the MAIA project in individual MS. Also, most relevant hints and lessons learned which might also be applicable for other countries are derived from these Success Stories. Altogether, the Deliverable can be regarded as a guideline report that synthesis the experiences with piloting EA in the 10 MAIA MS and it provides guidance on practicalities of accounting based on these experiences. The outputs will provide guidance on addressing NCA implementation in the context of EU and elsewhere.

In the following Chapter 2, insights will be given on the underlying methods and the utilized data. Afterwards we give a general overview on the process of mainstreaming NCA in the MAIA MS. The general idea behind mainstreaming NCA as well as the role of the MAIA project in that matter is outlined in Chapter 3.1. In Chapter 3.2, the issues and challenges that the MAIA MS experienced are presented, before we focus on the MS' progress in overcoming these issues (Chapter 3.3). Thereby, the MS' solutions and lessons learned are presented. With Chapter 4, the main findings of the Deliverable are summarized and a corresponding outlook is presented.

2. METHODS and DATA

This Deliverable D3.4 is based on a variety of activities from MAIA WP3. Throughout the process of the whole MAIA project and by means of the different MAIA WP3 surveys and Deliverables, the MAIA project partners' perspectives on experienced issues, challenges and lessons learned regarding the NCA implementation in their country were collected. In order to learn more about the country-specific process but also the country-specific encountered challenges and lessons learned, each MAIA MS was asked to hold a presentation during the MAIA consortium meeting and workshop in Madrid (from 28th – 30th of March, 2022).

A dedicated Q&A session followed each country presentation in order to foster some additional knowledge exchange and to explore potential future networking opportunities. An **interactive survey** was developed on the mentimeter platform (Appendix 1) and a **round table discussion** was prepared in another session at the MAIA consortium meeting in order to get into a vivid exchange with the partners on the topics of mainstreaming NCA and experienced issues, challenges as well as possible solutions and lessons learned. The four identified main issues and challenges covered by this survey were: (i) lack of policy support, (ii) lack of financial resources/ personnel, (iii) lack of technical skills/ knowledge and (iv) lack of data/ data access.

Based on the information that we were able to derive from the open discussion, the valuable feedback from the MAIA community and the mentimeter survey, more elaborated **follow-up survey** questions were developed. Aiming for efficiency and collaboration, the follow-up survey was compiled as a cooperation between MAIA WP2 and WP3 (Appendix 2). The joined survey, implemented by using the online platform SurveyMonkey, was sent around to all MAIA partners via Email[2] in May 2022. In total 22 people participated in the WP3 part of the survey. However, not all participants recorded answers for all questions. Survey responses from participants with unidentified national affiliation are not presented in Figure 3 - Figure 6 and Figure 8 - Figure 11.

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[2] The diagrams and corresponding statements in this Deliverable are based on this specific joined survey. For all other parts, the information from the whole variety of MAIA WP3 activities and documents has been integrated.

Besides, the MAIA Country Fact Sheets, our WP3 internal NCA database, as well as presentation slides from further MAIA events and the Ecosystem Services Partnership European Conference ESP2021 were considered as additional sources. Thus, the MAIA Deliverable D3.4 builds upon a diverse set of information, which has been collected through a long range of different MAIA WP3 activities conducted throughout the whole runtime of the MAIA project.

This information is synthesized in order to give a concise and meaningful overview onto the relevant progress and experiences. In addition to that, so-called "Success Stories" have been integrated into the Deliverable. The idea behind these Success Stories is to present some highlights of specific progress in the NCA implementation process during the runtime of the MAIA project. For each identified issue, MS were selected which managed to accomplish progress (partially) overcoming that specific issue. In the Success Story Box, the country and the specific issue are presented in more detail. The issue (if applicable) is divided into individual obstacles. Afterwards, for each of these identified obstacles (if applicable, otherwise for the general issue), a step-by-step overview on the solutions and the recent and foreseen progress is presented. Also, the involvement of the MAIA project in the progress is indicated and most relevant hints and lessons learned, which might also be applicable for other countries, were derived from these Success Stories.

3. RESULTS

In the following Section, the overall characteristics of mainstreaming NCA in MAIA MS as well as the MAIA contribution with regard to mainstreaming NCA are outlined. Afterwards, insights into identified issues with regard to the NCA implementation in the MAIA MS are presented and country-specific experiences with regard to (potential) solutions, lessons learned and further needs are provided.

3.1. General characteristics of mainstreaming NCA in the MAIA countries

As outlined in the introductory chapters of this Deliverable, the focus of WP3 lies on ensuring mainstreaming of NCA (based on the SEEA-EA guidelines) within the 10 MAIA MS on the basis of existing and newly initiated pilot account projects in each participating country. Respondents were given the following definition of NCA mainstreaming:

I.   In the context of mainstreaming NCA, accounts shall:
- Be comparable within the EU and globally;
- include national needs and particularities:
- follow the SEEA-EA guidelines (principally, but not limited to the SEEA);
- be well-aligned with policy priorities in EU member states and institutions;
- be based upon available methods and data;
- be developed in close collaboration with statistical agencies and other relevant government offices:
- be based on experiences and knowledge sharing;
- be based on interdisciplinary/transdisciplinary research and
- employ consistent data sharing and documentation protocols.

II.   In that sense, mainstreaming NCA is a process that involves:
- Establishing national and international networks of statistical and other government offices, technical experts and environmental economists;
- testing and evaluation of the various approaches (e.g. from SEEA-EA);
- development of guidance materials and experience sharing;
- enhancing access to methods and datasets and
- developing a strategy for the implementation, publication and policy use.

In order to make sure that our internal understanding of mainstreaming NCA meets the understanding of our MAIA project partners and all MAIA MS, we enquired their confirmation and/ or adaptation of the definition.
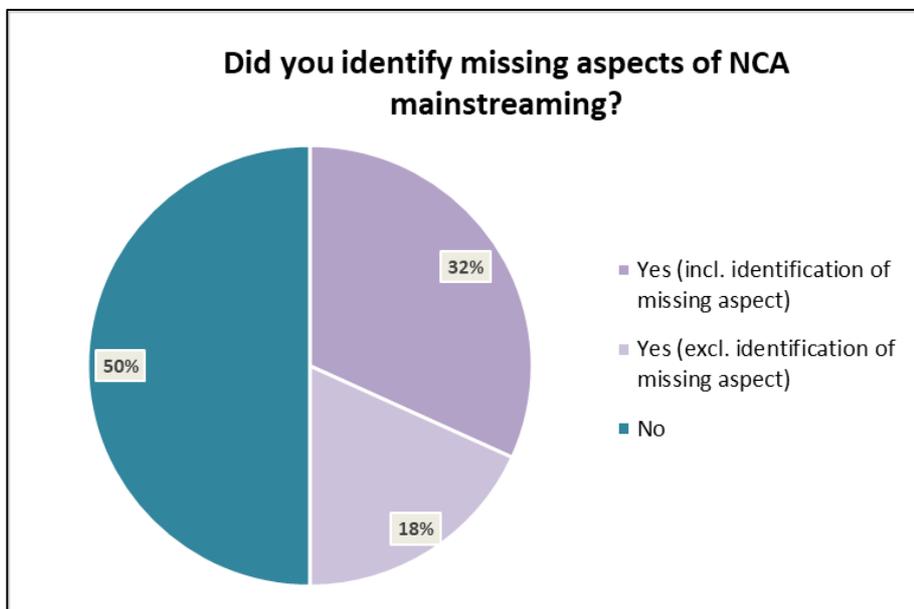
Figure 1: Survey[3] responses regarding the questions if the respondents identified missing aspects on the definition of NCA mainstreaming (n = 22).

Half of the respondents completely agreed with our definition (Figure 1). While almost 20% indicated some aspects would be missing, they were not able to further specify those missing aspects. Approximately 30% actually identified concrete missing aspects. Based upon their understanding and feedback, we updated our definition of mainstreaming NCA. In addition to our proposed definition of NCA mainstreaming the following aspects were identified:

I. In the context of mainstreaming NCA, accounts shall:

- Spatially link the information from ecosystem extent, condition, and services accounts.

II. In that sense, mainstreaming NCA is a process that involves:

- Breaking stereotypes and biases produced by a conservationist and pessimistic conception of ecosystems, their resilience and recovery and
- facilitating the process of searching and collecting relevant data.

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[3] Joined MAIA WP2/WP3 SurveyMonkey survey that has been send around in May 2022.

In that context, some of the MAIA partners had some further remarks and/ or indicated their partner/MS/ account-specific challenges related to mainstreaming NCA (Box 1).

- With regard to following SEEA-EA guidelines: Methods for physical and valuation of ecosystem service accounts are not being standardized at national level, yet. Up until now, they are considered in the context of "ad hoc" research projects.

- The use of economic statistical information for ES valuation in monetary terms, as per SEEA-EA, is almost impossible at this time, due to the fact that the ES classifications do not correspond to the international and national economic statistics classifications and standards, such as "Statistical Classification of Economic Activities in the European Community" (Nace.rev.2) and "Classification of the Functions of Government" (COFOG).

- For Norway: Collaboration between Statistics Norway and Sector Agencies on ecosystem accounting has not yet been implemented.

- Consistent data sharing and documentation protocols for ecosystem extent, condition and services accounts have different processing statuses.

- Data compatible with the SEEA approach is missing (e.g. time-series data).
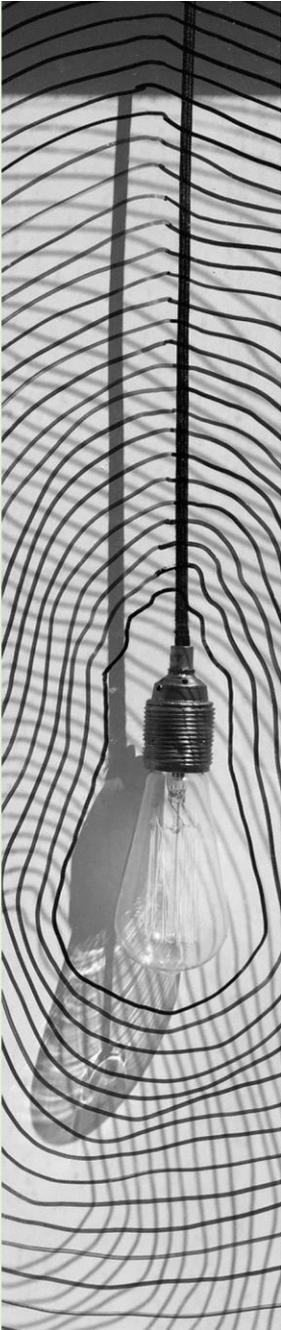
Box 1: Additional remarks from MAIA partners on mainstreaming NCA.

The scope of action and capacities of any project are limited. This of course also applies to the MAIA project. Therefore, in the context of mainstreaming NCA, also the potential support activities have been matched with the MS ideas and concepts. Therefore, again an initial list

of potential MAIA support activities has been shared with the MS:

- Addressing the above mentioned aspects in national-scale works, case studies and pilot accounts;
- harnessing partners' experience from projects such as ESMERALDA, OpenNESS, OPERAs, MAES, KIP-INCA and WAVES;
- facilitating knowledge exchange between countries by various workshops, webinars, individual support, online tools and (non-)scientific publications;
- providing guidance;
- creating networks and communities of practice, as well as engaging colleagues from other related disciplines;
- enhancing collaboration with regard to communication and dissemination of accounting efforts and results (e.g. in the form of scientific publications) and collaborating in the application for new projects.
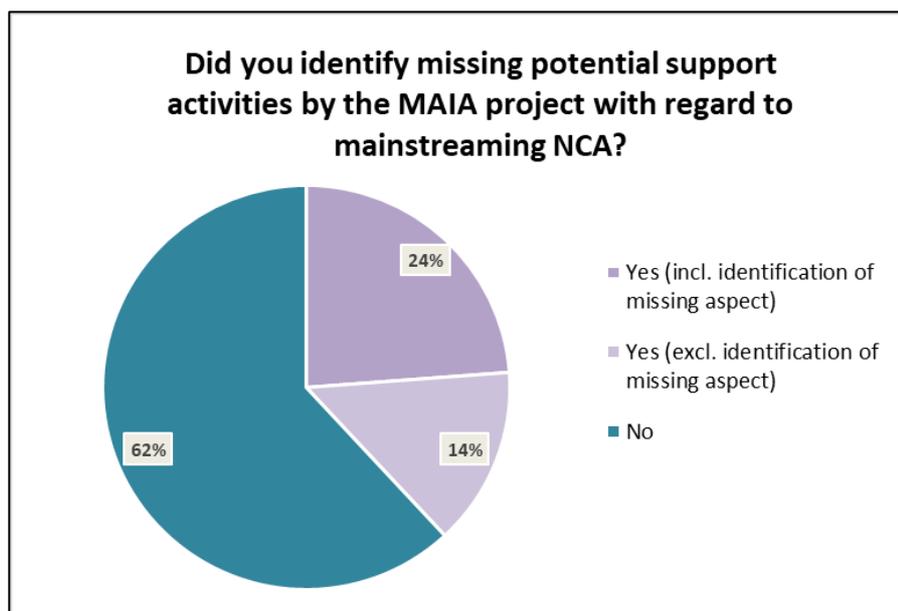
Figure 2: Survey[4] responses regarding the questions if the respondents identified missing potential support activities by the MAIA project with regard to mainstreaming NCA (n = 21).

More than 60% of the responses indicated that they agree with the proposed MAIA support activities (Figure 2). A little less than 25% were actually able to complement the list with additional aspects. These updates resulted in the following additionally proposed potential support activities with regard to mainstreaming NCA:

- Supporting the development of a vision, a strategy for creating the accounts or a

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[4] Joined MAIA WP2/WP3 SurveyMonkey survey that has been send around in May 2022.

strategy on how to engage with stakeholders and

- Translation of materials in countries' language.

3.2.   Issues and challenges

In order to maximize the significance and usability of this Deliverable, issues and challenges on the one hand and solutions and lessons learned on the other one are covered in two individual chapters. Throughout our contact with the MAIA MS and the compilation of the previous Deliverables and other project related outcomes, a list of four issues were mentioned and highlighted repeatedly, namely (i) lack of policy support, (ii) lack of financial resources/ personnel, (iii) lack of technical skills/ knowledge and (iv) lack of data/ data access. In the following Section, we will give insights into the MAIA MS experiences with regard to encountering these issues. For that, the issues are looked at one by one.

Lack of policy support

When it comes to "lack of policy support", Spain, Bulgaria, Czech Republic, Finland and France identified they encountered the issue to a large extent (with a value of at least 7, Figure 3). Smallest values can be found for the MS Belgium, Germany and the Netherlands. The mean value for Norway is situated at a medium value, nevertheless, the grey bar indicates that for Norway the different survey entries differed considerably (between 3 and 10, to be precise). Greece recorded that they encountered the issue "lack of policy support" on a medium scale as well.
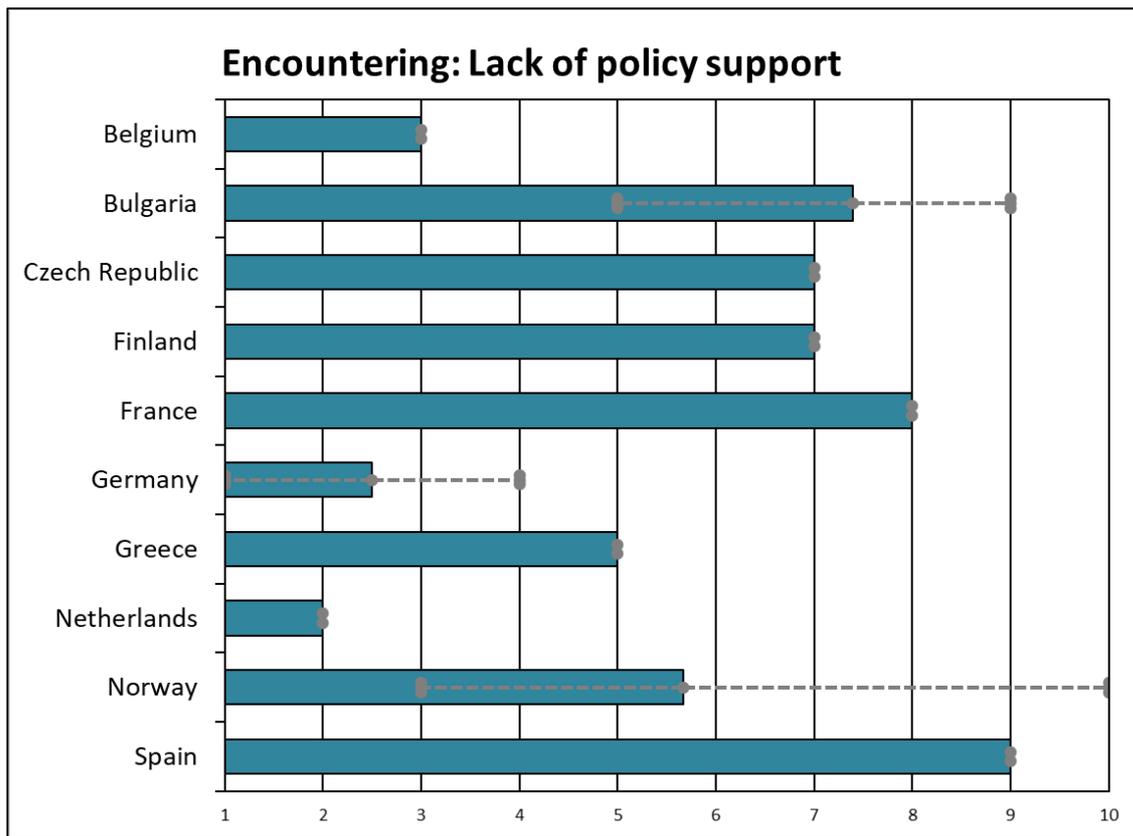
Figure 3: Mean MS-specific survey[5] responses regarding the questions to which extent the survey respondents encountered the issue of "*lack of policy support*" in their country. Answers are provided on a scale from 1 to 10, where 1 indicates "not at all" and 10 indicates "very much". In case multiple survey entries were affiliated with the same country, a mean was calculated and the grey bars in the figure indicate the lowest and highest responses (n = *diverse*).

Lack of financial resources/ personnel

The MAIA MS Spain, Norway and France indicated that they encountered the issue "lack of financial resources/ personnel" to a very large extent, followed by the MS Belgium, Bulgaria and Finland (Figure 4). Again for Greece, a medium value has been recorded (5). Whereas, the MS Germany and the Czech Republic identified that they encountered the issue only to a smaller extent. For the Netherlands, no value was recorded.
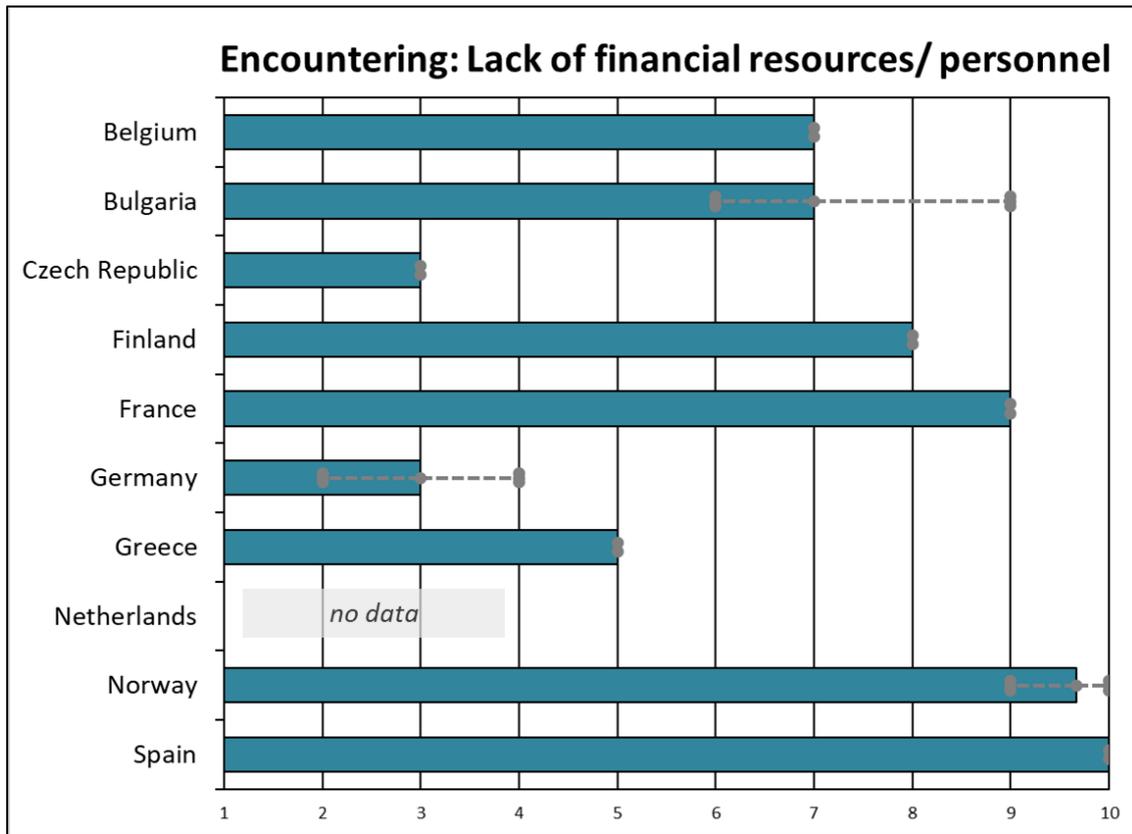
Figure 4: Mean MS-specific survey[6] responses regarding the questions to which extent the survey respondents encountered the issue of "lack of financial resources/ personnel" in their country. Answers are provided on a scale from 1 to 10, where 1 indicates "not at all" and 10 indicates "very much". In case multiple survey entries were affiliated with the same country, a mean was calculated and the grey bars in the figure indicate the lowest and highest responses (n = diverse).

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[6] Joined MAIA WP2/WP3 SurveyMonkey survey that has been send around in May 2022.

Lack of technical skills/ knowledge

In particular, in France and Greece the issue "lack of technical skills/ knowledge" was encountered at a larger extent (Figure 5). For both Belgium and Spain, rather small values have been recorded (3), whereas again for the Netherlands, no value was identified. All other MS recorded that they encountered the issue at a medium extent (including the survey respondents with unidentified national affiliation).
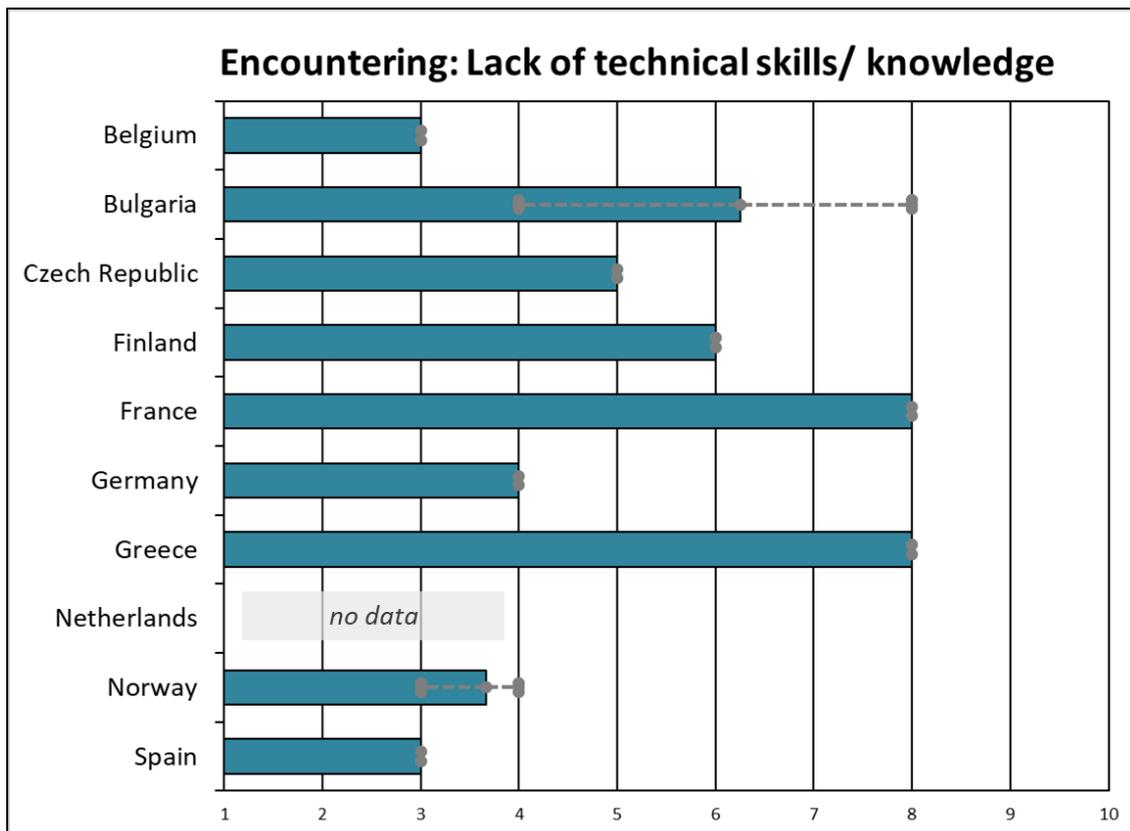

Figure 5: Mean MS-specific survey[7] responses regarding the questions to which extent the survey respondents encountered the issue of "*lack of technical skills/ knowledge*" in their country. Answers are provided on a scale from 1 to 10, where 1 indicates "not at all" and 10 indicates "very much". In case multiple survey entries were affiliated with the same country, a mean was calculated and the grey bars in the figure indicate the lowest and highest responses (n = *diverse*).

Lack of data/ data access

The extent to which the MAIA MS encountered the issue "lack of data/ data access" differs the least. Except for the Netherlands (for which no value was entered, again), each MAIA MS indicated they encountered the issue at least on the scale of 4 (Figure 6). Actually, for 80% of the countries, a mean value between 6 and 9 was identified. The same is true for

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[7] Joined MAIA WP2/WP3 SurveyMonkey survey that has been send around in May 2022.

the survey respondents with unidentified national affiliation. Nevertheless, it should be noted that for Bulgaria, the multiple survey responses differed rather intensively with regard to this issue. Values between two and nine were recorded.
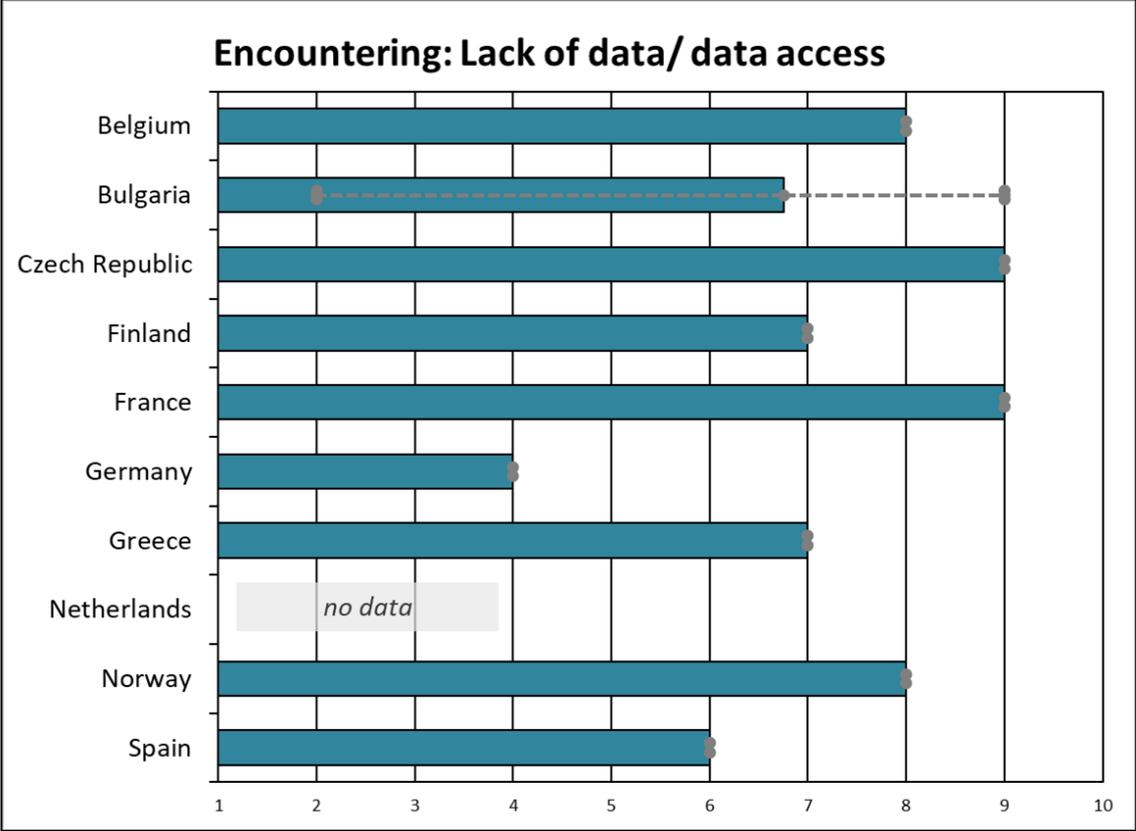

Figure 6: Mean MS-specific survey[8] responses regarding the questions to which extent the survey respondents encountered the issue of "*lack of data/ data access*" in their country. Answers are provided on a scale from 1 to 10, where 1 indicates "not at all" and 10 indicates "very much". In case multiple survey entries were affiliated with the same country, a mean was calculated and the grey bars in the figure indicate the lowest and highest responses (n = *diverse*).

Further relevant issues/ challenges

For this MAIA Deliverable, the target was to provide a synthesis of the NCA progress in the MAIA MS throughout the runtime of the MAIA project. As outlined in the introductory chapters of the Deliverable, through our contact with the MAIA MS, the compilation of previous Deliverables and other MAIA project-related outcomes, the four general issues addressed above were mentioned and highlighted repeatedly as being crucial for the overall NCA progress in the MS. Hence, they were identified as key elements for this Deliverable.

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[8] Joined MAIA WP2/WP3 SurveyMonkey survey that has been send around in May 2022.

However, along the way, at a more technical level of NCA implementation, the following aspects were identified as (additional) challenges[9]:

- Data availability and quality
- Validation of the accuracy
- Spatial resolution and spatial aggregation
- Identification of reference values for ecosystem condition accounts

In order to facilitate the identification of required future support activities, the MAIA partners were asked to rank these technical challenges based upon their relevance from 1 to 4, where 1 indicates the highest and 4 the lowest relevance. As a result, the following ranking order was identified from all responses:

(1) Data availability and quality (mean value = 1,5 and n = 13);
(2) Validation of the accuracy (mean value = 2,4 and n = 13);
(3) Spatial resolution and spatial aggregation (mean value = 2,7 and n = 14);
(4) Identification of reference values for ecosystem condition accounts (mean value = 3,4 and n = 14).

In order to guarantee a holistic synthesis of the MS experiences, the survey participants were asked whether they encountered any further issues or challenges within their country. The majority of the respondents (around 67%) indicated that no other issues or challenges were encountered (Figure 7). Only 27% of the respondents indicated that there were other issues, which also could be identified.

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[9] These issues were repeatedly raised in the MAIA MS presentations during the MAIA consortium meeting and workshop in Madrid in March 2022.
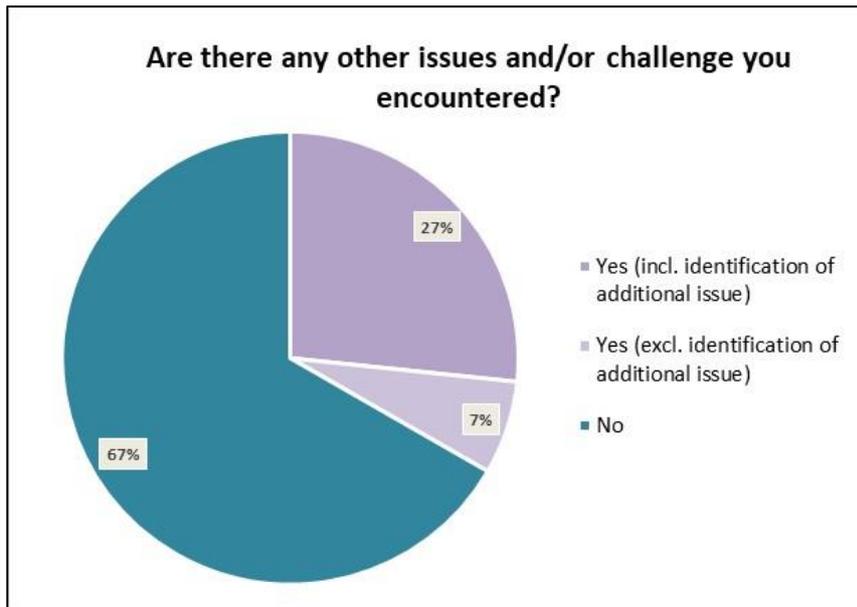
Figure 7: Survey[10] responses regarding the questions if and which other issues or challenges were encountered in their country (n = 15).

The following aspects were identified as additional issues and challenges by the MAIA partners:

- Lack of cooperation among stakeholders;
- Identification of ecosystem services users (USE accounting tables);
- Indicator development;
- Lack of agreement on the methodology for measurement and indicators of particular ecosystem services. Some of the methods and models used for ecosystem accounting have not been accepted as robust and realistic.

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[10] Joined MAIA WP2/WP3 SurveyMonkey survey that has been sent around in May 2022.

3.3.   Solutions and lessons learned

After looking into the challenges and issues experienced by the MAIA MS with regard to their NCA process within the last couple of years, we will shift the focus and report on the progress made by the MS. In that context, we will highlight the MS' solutions and lessons learned. In the recent survey, we asked the representatives from the MAIA MS to report on the extent to which they overcame the four issues (i) lack of policy support, (ii) lack of financial resources/ personnel, (iii) lack of technical skills/ knowledge and (iv) lack of data/ data access. Generally, it could be identified that there has been quite some progress with regard to solutions for all of the four issues. Again, we will present the results considering the national affiliations of the survey participants. For that, the issues are looked at one by one. Also, for each of the issues considered, details on how MS managed to (partially) overcome the issues will be presented. Thereby, the role of the MAIA project in supporting mainstreaming of NCA in Europe will be outlined. Besides, where possible, also additional/ potential future measures to overcome these issues will be highlighted.

Lack of policy support

Generally, with regard to overcoming the issue "lack of policy support", progress in overcoming the issue has been indicated for all MAIA MS (Figure 8). Thereby, the minimum average value that has been recorded for the MS is 4. With a value of 8, Belgium achieved most progress. For Norway, the Netherlands, Greece, Germany and the Czech Republic a progress between 5 and 7 has been indicated.
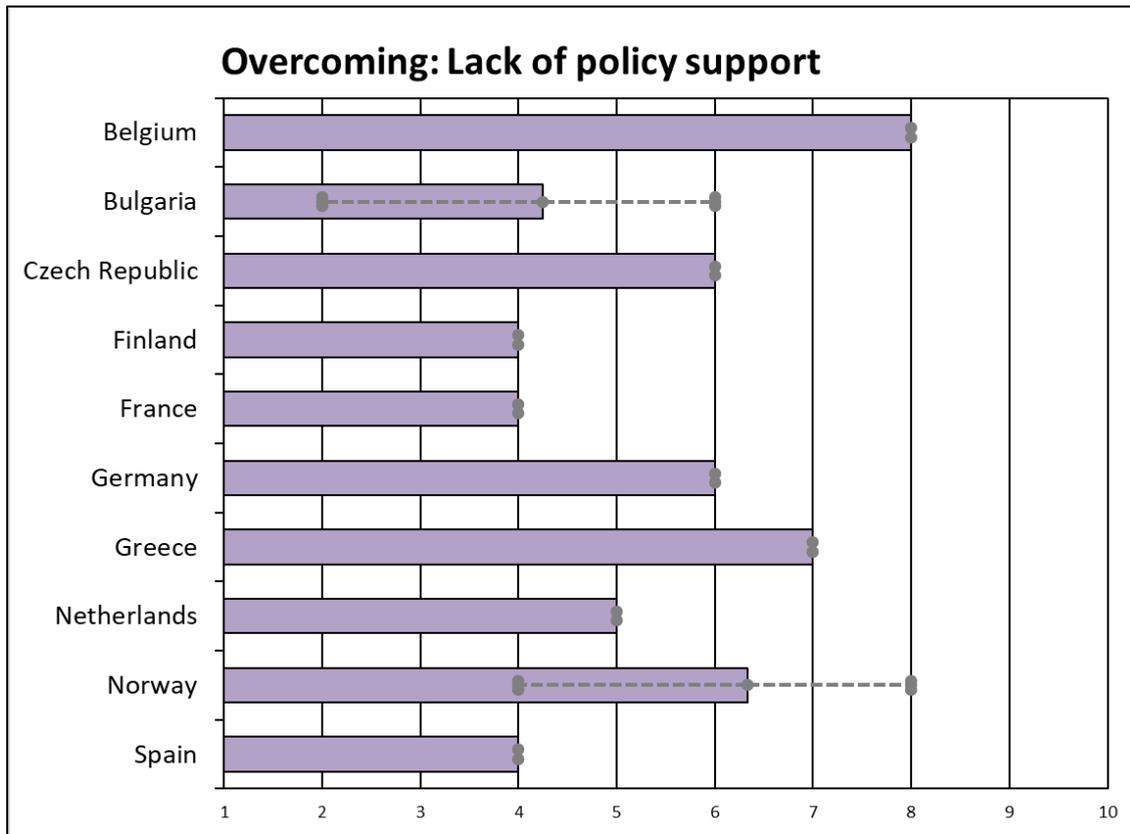
Figure 8: Mean MS-specific survey[11] responses regarding the questions to which extent the survey respondents overcame the issue of "*lack of policy support*" in their country. Answers are provided on a scale from 1 to 10, where 1 indicates "not at all" and 10 indicates "completely". In case multiple survey entries were affiliated with the same country, a mean was calculated and the grey bars in the figure indicate the lowest and highest responses (n = *diverse*).

Activities leading to overcoming lack of policy support

In the following Section, insights into the activities, which led to progress in overcoming the issue, will be presented in the form of "solutions and lessons learned". Afterwards, the contribution of the MAIA project in that progress will be outlined and lastly, ideas from the MAIA MS with regard to potential future activities targeted towards overcoming the issue "lack of policy support" are listed.[12]

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[11] Joined MAIA WP2/WP3 SurveyMonkey survey that has been send around in May 2022.
[12] The same structure has been used in the subsequent subchapters of the other three issues. We refrain from repeating the structure in these chapters.

Solutions and lessons learned

France recorded, that they managed to progress on the issue by getting into discussions with the department of the Ministry for the Environment in charge of strategic planning (CGDD). **Norway**, on the other hand, indicated that they made process thanks to strong support of top management of Statistics Norway and the initiative taken by Eurostat. Besides, the formation of a new government with new governmental declaration lead to some process. In the **Czech Republic**, progress was achieved through close cooperation with the Czech Statistical Office. In **Bulgaria**, some progress was made through the organization of national meetings and discussions with relevant stakeholders. Many MS highlighted the relevance of the Amendment of Regulation (EU) 691/2011 in the area of EA. Originally, the regulation set up a legal framework in the EU for compiling harmonised European environmental economic accounts. The amendment includes the addition of new modules – amongst which ecosystem accounts - to extend the scope of the European environmental economic accounts.

More generally, MS recorded that process was and/or hopefully will be achieved through disseminating the results of the MAIA project and by integrating them into the responsibilities of the National Statistical Institutes. As key element, improving the understanding about ecosystem accounting among stakeholders was mentioned, explaining the context, and objectives to ensure e.g. that NCA is not a "black box" or in competition with other data or indicator exercises. For **Greece** it was mentioned, that it was helpful to raise awareness about the potential of NCA to support sustainable development, spatial planning and job creation in the country. MS highlighted that national stakeholder workshops were/ and are organized in order to identify most relevant policy needs. Unfortunately, some MS reported that there is still a gap remaining with regard of clear mandate and defined responsibilities across national authorities.

The role of MAIA

Seven out of the ten MAIA MS indicated that the MAIA project was able to facilitate their progress overcoming the issue through different activities. To be precise; Bulgaria, the Czech Republic, Finland, France, Greece, Norway and Spain indicated helpful MAIA support. It was highlighted that in particular the sharing of information on the NCA process in other MAIA MS, presenting good examples and sharing experiences, including its importance for integration into national accounts and reporting, was very helpful. Also, briefings on updates related to, for instance, SEEA-EA were positively received. In addition to that, MS recorded that the MAIA project supported them in overcoming the issue by

means of developed guidelines, numerous workshops, webinars and seminars, and in particular through raising this issue with the responsible institutions - at national stakeholder meetings. In this context, some MS highlight the success of MAIA Project Coordinator Lars Hein's participation in national meetings. Besides, it was highlighted that the compilation of some experimental pilot accounts served as an impulse for enhanced policy support. One MS indicated that through MAIA funds they were able to lobby for increased support for EA at the national level. The MS also reported, even though not certain yet, signs of potential governmental support for some level of implementation in the near future.

The MAIA MS also had ideas on **potential additional support activities** that they would benefit from in order to overcome the issue "lack of policy support", namely:

- Compilation of a report (or a table) of EU-related strategies and financial tools that are related to NCA and its integration in decision-making for reaching Sustainable Development Goals;
- Continuation (creating preconditions for development) in sub-projects on specific country-relevant accounts;
- Expansion of opportunities for learning from other countries;
- Compilation of a structured argumentation on the need for NCA, including examples of potential use;
- Development of a structured network at EU level of statistical offices and ministries to share experiences;
- Development of more robust statistical methodologies and practical guides on producing the accounts;
- Dissemination of successful policy applications of ecosystem accounts from front-runner countries to national sector agencies.

	Success Story Czech Republic – "Lack of policy support"
General setting	Czech Republic has been actively developing environmental statistics and accounts. Ecosystem accounting initiatives were rather research driven, with the aim to provide research support to decision-makers. To this end, several partners were involved such as

	the Czech Statistical Office, the Ministry of Environment and the Czech Nature Conservation Agency.	
The issue	Institutions in the Czech Republic have not been interested in promoting development of SEEA Ecosystem Accounts. This reflected limited knowledge in the area of ecosystem services as well as acceptance of the whole concept of ecosystem services and its use for policy purposes. Therefore, the activities on ecosystem accounting were being promoted, lead and developed by CzechGlobe (Global Change Research Institute of the Czech Academy of Sciences). Ecosystem accounting initiatives were rather research-driven, without special policy support and interest from government institutions.	
	Individual obstacles	1. Lack of interest in the development and use of ecosystem accounting. 2. Lack of knowledge on ecosystem accounting. 3. Lack of acceptability of ecosystem services concept and its policy use.
Overcoming the issue	• CzechGlobe has initiated regular discussions with the Czech Statistical Office (CZSO). At regular meetings, progress with ecosystem accounting as well as the overall framework and recent developments has been presented and discussed. • The landmark was the adoption of SEEA EA by the UN Statistical Committee and especially the proposal of the Amendment of Regulation (EU) 691/2011. Czech Statistical Office have been informed about the recent developments and prepared to react to the Amendment on Ecosystem Accounting. This process connected to long-term communication contributed to overcoming the lack of interest in ecosystem accounting. • During 2021, CZSO with the strong input and support from CzechGlobe started the preparation of a Working Group on Ecosystem Accounting in the Czech Republic. The communication intensified and there were several preparatory meetings.	

- On 21 April 2022, the first official meeting of the Working Group took place at the Czech Statistical Office in Prague. The meeting was opened by the President of the Czech Statistical Office and by the Head of the Production and Business Statistics. The Working Group assembles representatives of the various institutions relevant to the production of ecosystem accounts, including Ministry of Environment, Ministry of Agriculture, government agencies related to nature conservation, spatial data, forestry and soil, Czech Hydrometeorological Institute, Czech Society for Ornithology, and others.
- In connection to recent developments in SEEA EA, including formal establishment of the Working Group, CZSO allocated personnel capacities to ecosystem accounting. CzechGlobe is technically supporting the training of CZSO staff and continually overcoming lack of knowledge barrier.
- While CzechGlobe has been promoting ecosystem accounting scientifically, Czech Statistical Office, in the light of international and EU developments, continually recognized this as an opportunity to broaden set of environmental accounts produced in the Czech Republic.
- The Working Group on Ecosystem Accounting will become a major science-policy body on ecosystem accounting in the Czech Republic, connected also to the National Platform on Ecosystem Services, which is now under preparation. The group will enable development of acceptable and robust ecosystem accounts and is also planning publications and joint report on ecosystem accounts.

Involved stakeholders	The major stakeholder involved has been the Czech Statistical Office. Other stakeholders include Ministry of Environment, Ministry of Agriculture, Nature Conservation Agency and Czech Environmental Information Agency, as well as members of the Working group on ecosystem accounting.

	MAIA support	All major activities were carried out within and with the support of MAIA and it has been the major source of funding for promoting ecosystem accounting in the Czech Republic.
Lessons learned		1. It´s important to build a partnership and communication channels with the statistical offices and agencies. Because they sometimes also need help with statistical questionnaires and documents on ecosystem accounting from the UN and EU. This builds mutual connections and cooperation in the area of ecosystem accounting. 2. It´s important to maintain momentum and raise interest in ecosystem accounting, illustrating its use and importance. Awareness raising is an important component of the whole process. In our case, bottom up and scientific efforts (such as within MAIA) met with the official policy progress (SEEA EA adoption, Amendment EU regulation) and they have been completely aligned. 3. Personal communication and relations are important too, they can help overcome several barriers. 4. Official institutionalization and personnel capacities are needed in later stages (such as the formal working group etc.).

Success Story Box 1: Czech Republic - "Lack of policy support".

Lack of financial resources/ personnel

The progress on the issue "lack of financial resources/ personnel" differs quite strongly between the MAIA MS (Figure 9). For Germany and Greece, an average value of around 7 indicates relatively large progress, followed by Spain (6) and Bulgaria and Czech Republic (with an average of 5). Little progress has been recorded for Norway, Finland and Belgium. Whereas, France on the other hand indicated, that there has been no progress on the issue, yet. For the Netherlands, no answer was recorded.
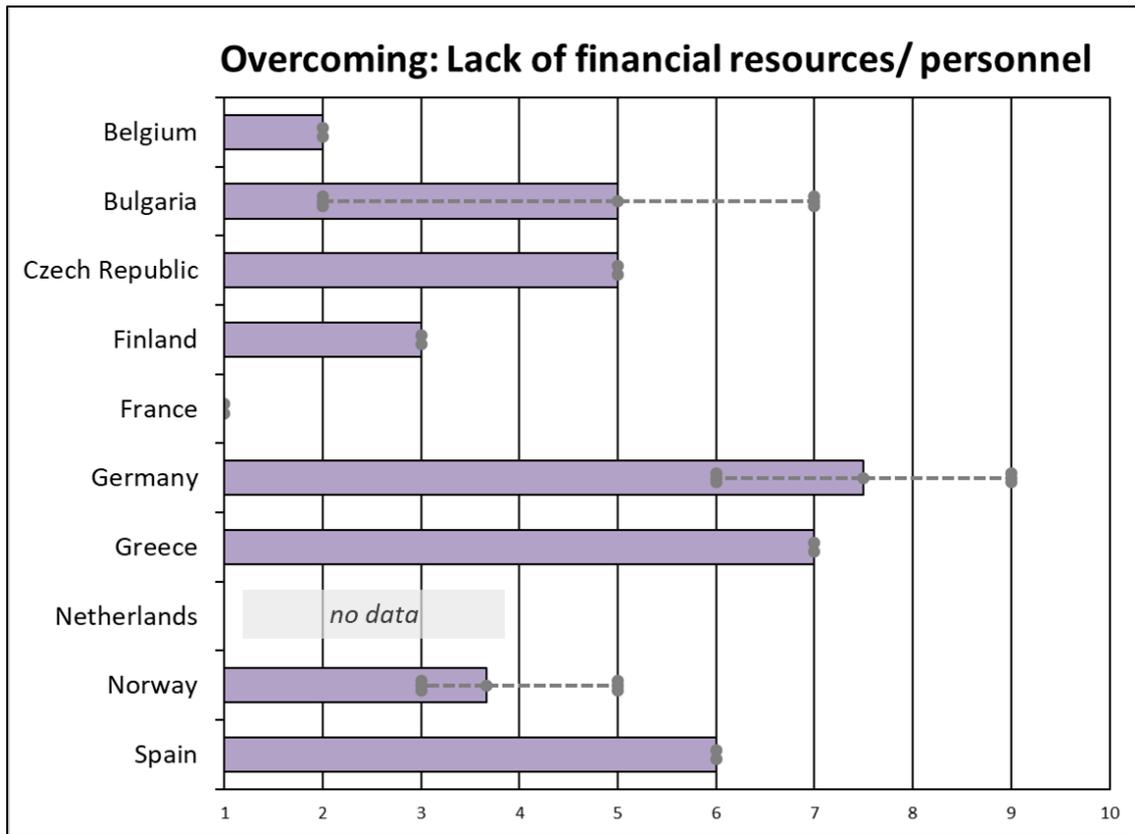
Figure 9: Mean MS-specific survey[13] responses regarding the questions to which extent the survey respondents overcame the issue of "*lack of financial resources/ personnel*" in their country. Answers are provided on a scale from 1 to 10, where 1 indicates "not at all" and 10 indicates "completely". In case multiple survey entries were affiliated with the same country, a mean was calculated and the grey bars in the figure indicate the lowest and highest responses (n = *diverse*).

Activities leading to overcoming lack of financial resources

Solutions and lessons learned

Generally, MS agreed that in order to overcome the issue "lack of financial resources/ personnel", it is highly relevant to foster synergies and cooperation between different authorities and institutions on the subject, e.g. Statistical Offices and other research projects. In addition to that, it was reported multiple times that research project funding has been and will continue to be highly relevant with regard to that matter. For **Spain**, it was reported that progress has been achieved by generating new teams and positions within the administration, which have the capacity and knowledge to be able to deal with these new methodologies. One MS reported that even though no concrete solution has been found, yet, they were able to improve their general understanding of the challenge and identify their future needs.

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[13] Joined MAIA WP2/WP3 SurveyMonkey survey that has been send around in May 2022.

The role of MAIA

The MS indicated that the MAIA project was able to facilitate their progress overcoming the issue through different activities. MAIA MS reported variable degrees of support through MAIA with regard to overcoming the issue "lack of financial resources/ personnel" (comments on that matter vary between "to some extent" and "very much"). One MS stated that for a couple of years the MAIA project was the only support on NCA in their country. Generally, it was highlighted for multiple MS that in particular through the direct MAIA support through funding and personnel it was possible to make progress in NCA, generating knowledge on the topic and compiling accounts. **Belgium**, for example, stated that the MAIA project enabled them to pilot accounts and put the Flemish work in European context. Further, Belgium stated that without this European perspective it would be harder to get support. For **Greece**, it was stated that the MAIA project provided knowledge on how to communicate, disseminate and highlight the relevance of biodiversity and ecosystem services accounting as well as on how to integrate NCA into different aspects of research, projects and development actions. Through this knowledge, financial tools were triggered to support relevant projects and personnel. **Finland** highlighted that progress overcoming the issue was achieved in particular through the exchange of the experiences of MAIA MS along with the increasing pressure from the EU to MS to find solutions for this challenge. In **Germany**, MAIA was perceived to be helpful with regard to overcoming the issue "lack of financial resources/ personnel" through the organisation of events at which different institutions and research facilities were able to present, discuss and exchange on the topic of NCA. Next to the generation of pilot accounts, the **Czech Republic** also highlighted that MAIA-supported mainstreaming Ecosystem Accounting in their country. Some MS stated the MAIA network has been useful in supporting grant applications (i.e. referencing progress in MAIA countries; advisory board members).

In addition, the MAIA MS also had ideas on **potential additional supporting activities** that they would benefit from in order to overcome the issue "lack of financial resources/ personnel", namely:

- Compilation of "justifications" for the need to provide resources to NCA - through the experiences of leading countries and their practical results;
- Organisation of more targeted discussions with national and international experts on specific items;
- Opening new public jobs related to current trends. For example, in the Ministry of the environment or in the National Institute of Statistics;

- Allocation of a larger budget to NCA;
- Progressing in standardized accounts using European-scale datasets; and
- Compilation of detailed examples from front-runner countries such as the Netherlands and UK of how NSO achieved core funding for EA implementation.

	Success Story Greece - "Lack of financial resources/ personnel"
General setting	Greece produced environmental accounts in terms of flows for e.g., raw material, water and energy. However, Greece did not produce NCA and the first involvement of Greece for NCA, based on the SEEA Ecosystem Accounting approach, starts with the participation of the University of Patras in the MAIA project. Now, the University of Patras MAIA team is cooperating with the Hellenic Statistical Authority on NCA issues and NCA reporting development.

<table>
<tr><td rowspan="2">The issue</td><td colspan="2">Greece did not produce Natural Capital Accounts. The main problem was the lack of personnel in the relevant Authorities and Public Services with the capacity to support NCA. This issue was directly related with the need for financial resources for capacity building, extra personnel with relevant experience or for outsourcing.</td></tr>
<tr><td>Individual obstacles</td><td>1. Scientists of State Authorities, related to the natural environment management, are interested to participate in NCA procedures and exploit the data that they produce, collect and handle, but they are not aware of NCA procedure. Specific training is needed targeting to each Authority needs and based on the profile/scientific background of their personnel.
2. Authorities that produce and collect data are in general understaffed, and by this all effort is given to priority issues of the daily practice and law enforcement.</td></tr>
</table>

		3. Many State Authorities produce, collect and handle data relevant to NCA. For instance, the Forest Service produces and collects data on forest and forested area extent, timber, non-wood products, forest fires, grazing, harvesting of aromatic and medicinal plants from wild populations, game etc. However, no databases are available, and most of the data (except from the recent forest and forested areas extent) is not standardised.
Overcoming the issue		(a) Acknowledging the importance of NCA and the lack of relevant capacity at most State Authorities, MAIA is supported from the beginning of the project by the central Government via its Decentralised Administration of Peloponnese, Western Greece & Ionian, in order to involve all relevant State Authorities. Personnel from relevant authorities has participated to MAIA workshops and relevant capacity has been developed, especially on data development, collection and standardisation. (b) Accounting of Ecosystem Extent, Ecosystem condition, Ecosystem Services was missing, and the MAIA project conducted a first attempt to provide case studies / pilot studies, for Greece (in the Peloponnese). This procedure highlighted how Greece can exploit available data towards producing NCA under the SEEA approach. (c) The MAIA Project and the participation of the University of Patras also triggered the national LIFE-IP 4 NATURA (Life Integrated Project) to include natural capital accounting as one of its Actions, collecting feedback and transfer knowledge from the MAIA outcomes. This was also important for the MAIA project, for which LIFE-IP 4 NATURA partners and their outcomes provided complementary input (e.g., datasets, local scale information etc.).. (d) Moreover, the participation of the University of Patras MAIA

		Team in NCA efforts has been acknowledged since the Hellenic Statistical Authority requested support on exchanging information and outcomes towards NCA reporting (even if this is at a premature stage).

The cooperation between the University of Patras MAIA team, the Hellenic Statistical Authority and the Ministry of Environment and Energy provides a robust framework to continue on NCA. Extent, condition, and selected ecosystem services accounts (e.g., freshwater-related, biodiversity, recreation in nature) are the first to be produced since relevant data is available for the whole Greek territory, while feedback from relevant monitoring obligations is granted (e.g., Habitats Directive and Water Framework Directives monitoring datasets).

	Involved stakeholders	- Most stakeholders that supported the actions to overcome this issue where the State-Agencies of the Decentralised Administration of Peloponnese, Western Greece & Ionian and relevant authorities of the Region of Western Greece (related to environmental licensing and water management). - Support on NCA progress has also been provided by the Ministry of Environment and Energy and the Natural Environment & Climate Change Agency (NECCA), in terms of data provision and policy support. NECCA also provides the framework to financially support NCA efforts inside the protected areas of Greece. - The success of the stakeholders' involvement and the capacity produced by MAIA was also highlighted during the second MAIA workshop, where the discussion was on specific NCA fields, based on each participant expertise, background and placement.

		• The Hellenic Statistical Authority has also been involved and already has a cooperation with the University of Patras MAIA team, and it has expressed its intention to enter into a cooperation agreement with the University of Patras MAIA team, for NCA-related issues and reporting.
	MAIA support	The MAIA project and its outcomes provided a crucial framework to communicate the importance of NCA and the need for a systematic and permanent support by State Authorities in order to develop a robust system of data collection, standardisation and information flow to support: (a) NCA reporting, (b) management decisions and (c) policy making, especially in terms of environmental conservation and spatial planning, under the Sustainable Development Goals, EU Biodiversity Strategy and the EU Green Deal.
Lessons learned		1. The most important lesson learned is that in most cases, capacity building and dissemination of NCA projects outcomes can provide the initial support needed to build NCA procedures under the already available structure of the State mechanism. 2. The second important lesson is that projects like MAIA can trigger complementary support towards NCA in financial, human resources and policy terms. 3. Finally, NCA should be communicated as the horizontal holistic tool for integrated management and decision-making, for all aspects of the human activity, especially now when we are facing a global financial, climate, energy, and food crisis.

Success Story Box 2: Greece - "Lack of financial resources/ personnel".

Lack of technical skills/ knowledge

Considerable progress has been recorded with regard to the issue "lack of technical skills/

knowledge" (Figure 10). All countries reported that they overcame the issue on average at least on the scale of 4. The only exception are the Netherlands, which did not report on that matter. For five countries an average value higher than 6 has been identified, namely Bulgaria, the Czech Republic, Germany, Greece and Norway. Nevertheless, no country stated that they had completely or almost completely overcome the problem, yet.
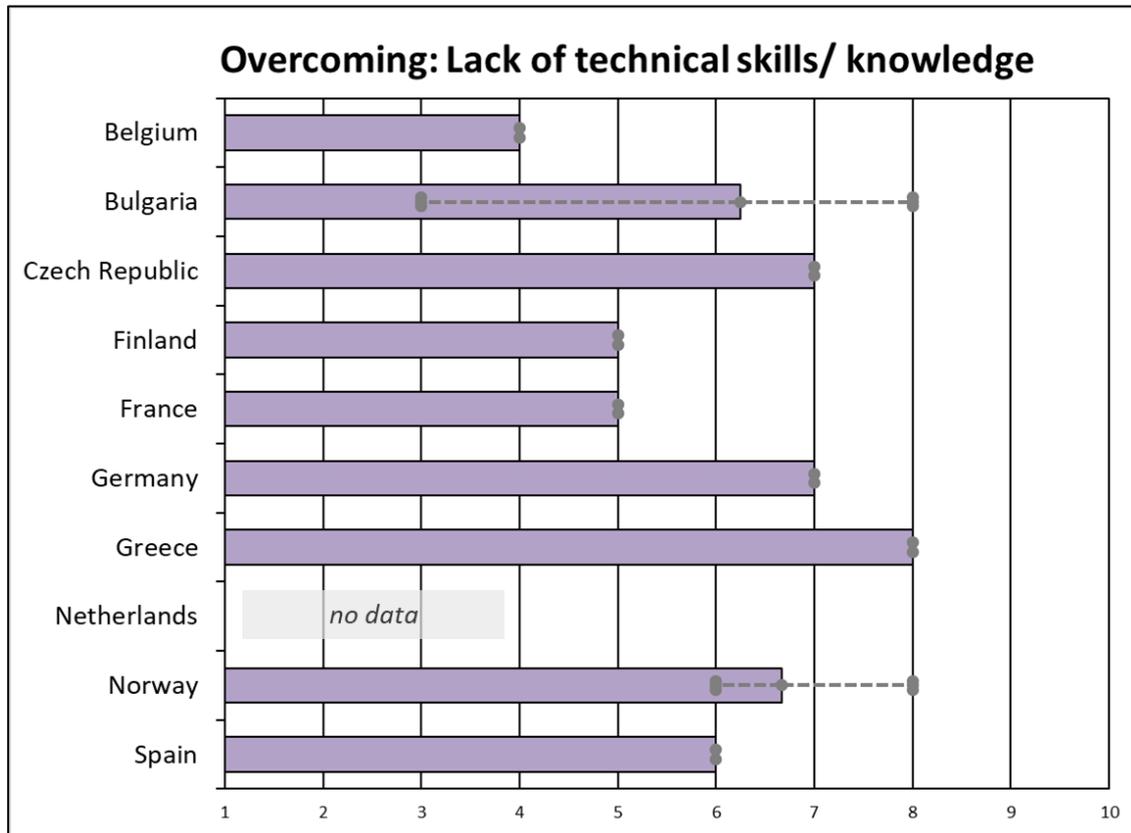
Figure 10: Mean MS-specific survey[14] responses regarding the questions to which extent the survey respondents overcame the issue of "*lack of technical skills/ knowledge*" in their country. Answers are provided on a scale from 1 to 10, where 1 indicates "not at all" and 10 indicates "completely". In case multiple survey entries were affiliated with the same country, a mean was calculated and the grey bars in the figure indicate the lowest and highest responses (n = *diverse*).

Activities leading to overcoming lack of technical skills/ knowledge

Solutions and lessons learned

Generally, MS recorded that through the involvement in (pilot) projects, knowledge and skills were brought together. In addition to that, literature reviews and (international) exchange (e.g. through workshops or personal discussions), striving for knowledge sharing and/ or

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[14] Joined MAIA WP2/WP3 SurveyMonkey survey that has been send around in May 2022.

synergies, are reported as key elements in overcoming the issue "lack of technical skills/ knowledge". In that regard it was specifically mentioned, that building stronger cooperation with research institutes with ecological expertise was important. In addition to that, MS highlighted the relevance of continuously following the international SEEA-EA work and active participation in international expert meetings. Besides, for **Norway** it was reported, that is was helpful to organize sessions in country workshops to discuss technical challenges, notably because ecosystem accounts are spatialized accounts and statistical offices are not used to this type of information system. In that context, it was also reported that the Norwegian MAIA project partner NINA has continued to build its technical staff in remote sensing, GIS modelling of ES and monetary valuation, through national research grant funding for pilot testing.

The role of MAIA

The MS indicated that the MAIA project was able to facilitate their progress overcoming the issue through different activities. It was highlighted that the MAIA webinars, national workshops and the relevant online material of the project were very helpful. Through different MAIA activities and Deliverables, relevant information on NCA and how it can and should be incorporated into daily practice, especially for State Authorities and Agencies, was provided. Multiple MS stated that through multiple MAIA activities, they were able to learn more about state-of-the-art techniques and exchange ideas with other countries.

Besides, the MAIA project was perceived to be beneficial with regard to interpretation of the SEEA requirements, dissemination of information on specific methods and in particular in the domain of valuation, namely through simulated exchange values. The MAIA project inspired some partners to work with new data collection methods, such as satellite data and crowdsourcing. Also, MS stated that MAIA has reinforced their teams with new personnel who brought new techniques and knowledge to the working groups.

More specifically, **Bulgaria** pointed out that the MAIA project was helpful in involving PhD students, young scientists and stakeholders in the project activities related to NCA. The **Czech Republic** was supported by the MAIA project in this regard through a visit of MAIA coordinator Lars Hein and fruitful technical discussions about pilot accounts. In addition to that, also the cooperation on innovative accounting approaches was very beneficial. **Norway** stated that learning from more advanced MAIA partners helped them to identify technical needs that had to be filled as they "geared up" for potential national level implementation. Multiple MAIA MS referred to the relevance of the MAIA viewer. In that context, it highlighted that a strategy should be developed to sustainably keep the "MAIA Viewer" up and running, so that mainstreaming can be continued after the runtime of the MAIA project.

The MAIA MS also had ideas on **potential additional support activities** that they would benefit from in order to overcome the issue "lack of technical skills/ knowledge", namely:

- Organising of additional series of expert workshops, e.g. in cooperation with Eurostat;
- Compilation of detailed and practical guidelines for the use of Geographic Information Systems (GIS).

Unfortunately, regarding this topic, multiple survey respondents stated that within their budget and platform there is no room for any additional support opportunities.

	Success Story Belgium - "Lack of technical skills/ knowledge"
General setting	Flanders has the ambition to develop a broad set of ecosystem accounts and related indicators to support policy and decision making. Ecosystem accounting work is, however, still limited to developing a first, albeit limited, set of pilot accounts. Despite the ambition, it is not clear yet who will take up the task, nor are there already a programme or resources. Until now, most work has been done in the framework of ad hoc research projects.
The issue	After almost a decade of investing in the modelling of a wide variety of ecosystem services and developing a thorough ecosystem assessment for Flanders, developing ecosystem accounts is a logical next step. Although we could capitalise on previous work and experiences the systematic integration of economic and environmental information by means of ecosystem accounts clearly poses a number of challenges. Data availability and resources are probably the biggest challenges, but access to the relevant skills and knowledge is certainly also an issue of concern. Ecosystem accounting requires economists, data and GIS specialists, statisticians, ecosystem experts, ecosystem service modellers, potential users of the accounts, data providers etc. to work closely together. The available expertise, knowledge and skills are, however,

		scattered across different teams and entities.
Overcoming the issue		The first experiences with the piloting of ecosystem accounting learned us to appreciate both the extend as well as the specifics of the challenge. Although we established experienced, diverse and complementary research teams, it took some time to get grip on the specifics of ecosystem accounting. Having worked closely together with potential users to better understand user requirements we learned that for most accounts we needed specific expertise in the team. The experience with the development of four pilot ecosystem service accounts in physical and monetary units (for the ecosystem services 'wood production', 'carbon storage in biomass', 'health effects of nearby green space' and 'water availability') and a pilot ecosystem extent account learned us that a Flemish ecosystem accounting programme needs a well-established governance structure with on the operational side a core team and specific working groups for each account. An interdisciplinary core team manages the programme, establishes, and supports the account specific working groups. The working groups, composed of thematic experts, relevant data holders and potential users, develop, test and adapt the methodology for every account. This collaborative process, of course, requires both resources and a strong mandate. The work by the core team and the working groups is overlooked by a steering group.
	Involved stakeholders	The current piloting work was led by VITO and INBO. Researchers from VITO and INBO consulted thematic experts, data holders and potential users in the course of the development process and invited them to review the pilot accounts. Apart from the consultation of these key stakeholders the skills and knowledge have quasi entirely been sourced from inside VITO and INBO. A more collaborative approach would, however, be preferable. Although we don't have that collaborative structure in place yet, we believe it is a way forward to manage

		account specific skill and knowledge issues which will increase account quality. Another benefit is that by systematically involving potential users accounts will better fit user needs. Also, stakeholders that have been involved will somehow become owners of the accounts which will increase support as well as (future) involvement in updating the account when better data, models and/or new knowledge becomes available.
	MAIA support	The MAIA research project allowed us to produce the first pilot ecosystem accounts for Flanders. From this experience we have learned that we can develop ecosystem accounts, but that the development of a broad set of useful ecosystem accounts requires extra skills and knowledge, but certainly also better and more data, more resources and an appropriate governance structure. With respect to the skills and knowledge issue we have benefited from the exchange of experiences between MAIA partners with respect to, amongst others, approaches and methods.
Lessons learned		Although ecosystem accounting requires skills, knowledge and scientific rigour it also, certainly at this early phase in the development of ecosystem accounting, requires pragmatism. Data, skills, knowledge, structures and resources are mostly not sufficient at this point, but this will evolve when the practice of ecosystem accounting matures and applications grow. Countries need to start experimenting with accounting and learn from it. It is expected that skills, knowledge, as well as the data sources and techniques used to compile the accounts, will improve over time as a result of the ongoing implementation of these accounts. First steps towards the development of a set of ecosystem accounts with practical use in Flanders have been made, but the way is long and hurdles will have to be taken. The challenges are complicated

with many technical dimensions and will require a wide range of expertise and substantial resources to overcome. These two components are crucial in the ongoing development of ecosystem accounting in Flanders; a strong carrying capacity, wide institutional and interpersonal cooperation and the necessary resources. All this preferentially coordinated by an established governance structure with firm connections to all involved stakeholders, to, amongst others; facilitate the exchange of skills, knowledge, data and resources.

Success Story Box 3: Belgium - "Lack of technical skills/ knowledge".

	Success Story Norway - "Lack of technical skills/ knowledge"
General setting	In September 2021 the newly elected labour-centre party government published their government platform, which included the goal of establishing "nature accounts" for Norway (the Norwegian translation of ecosystem accounts). Since early 2022 Statistics Norway has participated in the EUROSTAT Task Force for revision of Regulation (EU) 691/2011), and coordinated technical input from Norwegian institutions, including NINA. The Norwegian Environment Agency is currently conducting a national 'concept choice assessment' to determine the level of implementation for ecosystem accounts in Norway. Implementation levels being assessed vary from 'minimal' designed to only comply with EUROSTAT reporting requirements, to maximum implementation of ecosystem accounts to meet local government needs for land use planning and policy.
The issue	Since the 2017 SEEA EEA Technical Guidelines, and national funding for piloting urban ecosystem accounts, NINA identified an in-house need for R&D capacity in remote sensing, and GIS ecosystem extent-condition and ecosystem service mapping.

	NINA also identified a knowledge gap in urban accounts in using satellite-based ecosystem mapping as a basis for nation-wide, annually updated and consistent land use change analysis. Until 2018 land use accounting practices in urban areas had largely been based on field and administrative registration data.	
	Individual obstacles	Particular implementation gaps identified by NINA in current urban ecosystem mapping include (i) high resolution identification of ecosystem assets in the urban environment (e.g. individual street trees), (ii) annual change accounting, (iii) uncertainty analysis and (iv) science-policy communication.
Overcoming the issue (incl. involved stakeholders)	General: During the last 5 years or so NINA has recruited researchers and sponsored a Ph.D. with RS, GIS and ecological modelling capacity to fill these knowledge gaps. Other institutions and institutes such as Statistics Norway, OsloMet and NIBIO have recently undertaken applied research projects to strengthen support for urban nature accounts. Environmental NGOs are exploring approaches to communicating ecosystem accounting findings to the wider public. Oslo Municipality, Planning and Building Agency, has for a number of years had a policy of strengthening inhouse RS-GIS capabilities for analysing urban green infrastructure. Several municipalities have recently initiated projects to assess ecosystem services contributions to climate change readiness. Overcoming specific challenges: i. High resolution identification of ecosystem assets in the urban environment (e.g. individual street trees). Oslo municipality is the first municipality in Norway to undertake green infrastructure accounting (vegetation cover) based on orthophoto interpretation. The city contracted Lidar based vegetation structure mapping for the second time (4 year repetition); with NINA support we are carrying out urban tree canopy mapping and accounting.	

	ii.	Uncertainty analysis. As part of MAIA NINA has carried out ground truthing of Sentinel-2 based urban ecosystem extent mapping, demonstrating the capability to detect urban land use change, and how this depends on the resolution of basis spatial units, the speed of and land cover change and the periodicity of accounts. A Statistics Norway lead project for EUROSTAT is currently assessing the accuracy of radar-based satellite detection of vegetation structure, compared to optical sensors.
	iii.	Science-policy communication. Finally, communication of change analysis from ecosystem accounts needs to move beyond accounting tables communicated to specialized technical staff, to interactive apps open to the public with a dashboard of indicators, allowing comparative analysis across jurisdictions and time periods. NINA is assessing how to implement the MAIA Analytical Tool and its map and table functions for informing municipal land use planning in Norway. In the Ecogaps project (2021-2025), NINA and Oslomet are supporting the environmental NGO SABIMA in developing indicators from ecosystem accounting that will contribute to comparison of municipal performance in land use planning in a publicly available app (https://naturkampen.sabima.no/). NINA and Oslomet are working with the Viken County level government to develop guidance for municipal ecosystem accounting. With the support of another research institute – NIBIO - Oslo Municipality's climate agency has recently explored how mapping of urban ecosystems can contribute to policies for municipal climate change preparedness. The networking developed between the different teams involved in MAIA has served to discover the data gaps and the alternatives to these gaps for the development of accounts.
	MAIA support	• Development of official urban land use change accounting methodology integrating data from remote sensing (Statistics

		Norway);
		• Testing uncertainty analysis of urban ecosystem accounts in Oslo (NINA);
		• MAIA Analytical Tool – exploring adaptation to needs of Norwegian municipalities (NINA)
Lessons learned		1. Urban ecosystem accounting requires permanent staffing for continuity of statistics. Where possible, municipal authorities need to build in-house analytical capabilities for urban ecosystem accounting, rather than relying on ad hoc consultants.
		2. Demonstrate policy analysis uses of (urban) ecosystem accounting data in order to justify the needed investments in human resources and data systems to politicians.
		3. Where municipal staff is too small for in-house analytical capability, county level systems can provide autogenerated maps, accounting tables and indicators, based on automated statics production lines using high resolution and multi-annual satellite data.
		4. Design information platforms that allow for comparison of ecosystem management performance across jurisdictions (municipalities, counties, landowner sectors). Make this data easily available as indicator dashboards to the public to enhance the use of ecosystem accounting data by civil society to hold municipal politicians and land managers to account.

Success Story Box 4: Norway - "Lack of technical skills/ knowledge".

Lack of data/ data access

The average responses of the countries with regard to overcoming the issue "lack of data/ data access" are very diverse, again (Figure 11). Except for the Netherlands, who did not report on that matter, Belgium identified the lowest level of overcoming the issue. They reported a value of 2. Greece and Spain seem to be front-runners in that regard, as for both MS an average of 8 has been recorded. For all the other MAIA MS, values between 3 and 7 have been recorded. It should be highlighted, that for this issue, the responses from

Bulgaria show quite a variation, ranging between 2 and 7. On average this leaves Bulgaria with a value of 4,25.
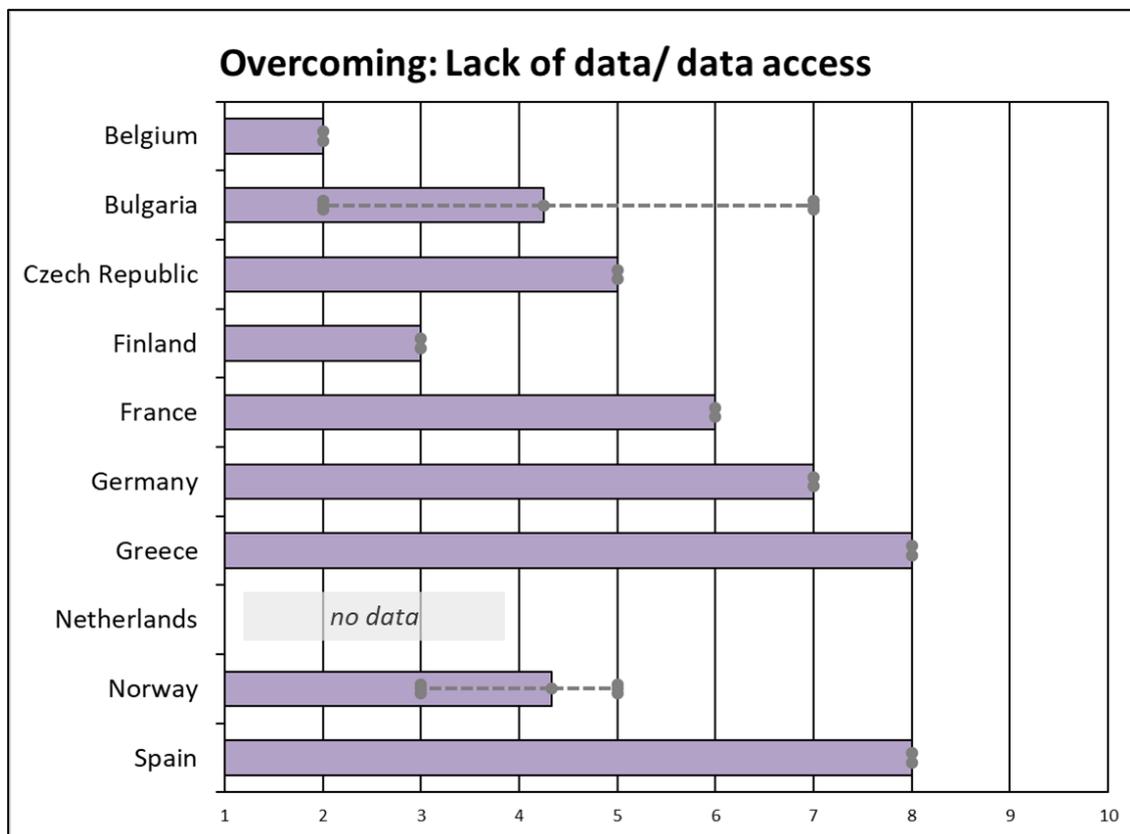
Figure 11: Mean MS-specific survey[15] responses regarding the questions to which extent the survey respondents overcame the issue of "*lack of data/ data access*" in their country. Answers are provided on a scale from 1 to 10, where 1 indicates "not at all" and 10 indicates "completely". In case multiple survey entries were affiliated with the same country, a mean was calculated and the grey bars in the figure indicate the lowest and highest responses (n = *diverse*).

Activities leading to overcoming lack of data/ data access

Solutions and lessons learned

In general, the MS stated that at a very general level, some data are already available. In that context, the EU-wide CORINE LULC data were mentioned as key data source for the development of ecosystem extent accounts. Nevertheless, there remains a strong need for high resolution, detailed and specific data. Several MS reported that they managed to progress in overcoming the "lack of data/ data access" through (i) several projects funded by Eurostat, (ii) the cooperation with MAIA partners as well as (iii) the involvement and

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[15] Joined MAIA WP2/WP3 SurveyMonkey survey that has been send around in May 2022.

interactions with other key institutions. For example, **France** reported that in order to make progress on the issue, interactions with public bodies responsible to produce and collect data on the marine environment, notably for the reporting of the Marine Strategy Framework Directive, was key. In addition to that, **Norway** managed to achieve progress in that matter through (i) the participation in ecosystem classification standardisation work at national level and (ii) the implementation of a "patchwork" of local and regional EA research/pilot projects to test methodologies and data needs for EA in land use planning. **Bulgaria** managed to progress by developing model-based methods which can compensate for the lack of measured data. Other countries mentioned the potential of Lidar images.

In the context of the issue, it was highlighted that there is also the need to achieve a better frequency in the production of datasets as well as an enhanced data quality, data control and metadata information.

The role of MAIA

Multiple MS highlighted the large and active MAIA network as beneficial for overcoming the "lack of data/ data access". In that context, the general expert exchange as well as the cross-linking of people with the same thematic interests (e.g. marine ecosystem accounts) and workshops with stakeholders were emphasized. Generally, sharing of experiences and presenting accounts including information on available and used data across countries through scientific publications, MAIA Deliverables and workshops was considered helpful.

One MS also emphasised that projects (such as MAIA) that use data produced at a European level, such as the Copernicus initiative, come to promote the further development of these initiatives by generating profits (in terms of knowledge creation and (scientific-) progress) from them. Some MS reported that the MAIA project gave them a frame of reference for exploring different data in the context of ecosystem accounting. Besides, it was reported that MAIA to some extent provided support in identifying some European data sources. Nevertheless, this overview on available data sources was perceived to be not detailed enough.

Very specifically, in **Norway**, the MAIA project provided access to experiences with national level data platforms; in particular the MAIA Analytical Tool. NINA is currently negotiating on how to transfer/implement it in Norway (learning from experiences from CBS in the Netherlands).

The MAIA MS also had ideas on **potential additional support activities** that they would benefit from in order to overcome the issue "lack of data/ data access", namely:

- Providing a standardised approach on NCA data reporting (e.g. at national level, based

on the European Environment Agency reference grids[16]);

- Putting aside prejudices that many spheres of the natural sciences have regarding data from technological advances, such as satellite images, drones, lidar, data engineering, artificial intelligence or big data;
- Improving national data management systems in order to enhance easy access to measurements and observations;
- Development of guidance on the use of earth observation data; and
- Identification of potential data providers based upon NCA activities in different countries.

	Success Story Germany - "Lack of data/ data access"
General setting	Everyone knows that green spaces in the residential environment have a positive effect on well-being and life-satisfaction. A monetary valuation of this service could be crucial in improving the resilience of cities to climate change, given the known competition between the use areas as green space and it´s economic exploitation. The valuation of green spaces by the Norwegian MAIA partners showed that valuations based on time spent in green spaces yielded only low monetary values per hectare. Our own research using the hedonic pricing (property price) method also yielded low values compared to land values. A method that offers the potential to assess the effects of urban green space on well-being more comprehensively is the Life Satisfaction Analysis. Here, the statistical correlation between subjectively assessed life satisfaction and the provision of green spaces in the residential environment is determined and the correlation between life satisfaction and income is used for monetary evaluation.
The issue	A monetary evaluation of the average correlation between green space provision and life satisfaction was available for 2016. However, it only referred to people who lived within the Functional

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[16] https://www.eea.europa.eu/data-and-maps/data/eea-reference-grids-2

	Urban Areas of the European Urban Atlas. In addition, it became apparent that the Urban Areas of the Urban Atlas, which had served as the basis for the statistical estimation, only represent a part of the green spaces that actually have to be considered for capturing the amenity services of green spaces close to housing.
Overcoming the issue	Despite these data problems, it was possible to plausibly transfer the results of the 2016 study to the current more accurate and complete spatial data base for residential green spaces. With the help of population census data, it was then possible to estimate the monetary value of residential green spaces for the quality of life for each 2 km x 2 km grid square throughout Germany. It was shown that the per hectare values can be many times higher than the corresponding land values, especially in densely populated inner city areas: an important argument for liveable and climate-resilient cities through more urban green space.

Success Story Box 5: Germany - "Lack of data/ data access".

	Success Story Spain - "Lack of data/ data access"
General setting	In Spain, the development of natural capital accounts is complementary to a wide range of national and international policy needs. They would contribute in particular to the SEEA-EA, the European Environmental Economic Accounts (EEA) and the Biodiversity strategy of the EU and Spain. Currently, the policy focuses on the Environmental Economic Accounts and the new accounts planned to be included within communication COM/2022/329. They are also working in various working groups at different levels to implement ecosystem accounts on the national scale.
The issue	The development of natural capital accounting requires the implementation of data of different kinds, but all spatially explicit.

	However, in many cases, information of this kind is difficult to find and use due to multiple factors, such as different collection criteria, difficulties in finding gateways between information sources, and reluctance towards some data sources based on remote sensing or models.	
	Individual obstacles	1. The national databases have a different evaluation, analysis and development criteria depending on the administration that carries them out. 2. The coexistence of different cartographic data production initiatives makes it difficult to select the one that can best be adapted to natural capital accounting. On the other hand, the time lag between different versions of data sources complicates their inclusion in an accounting system. 3. Conceptual barriers exist to using new data sources from technologies such as remote sensing or machine learning models. As a result, more weight continues to be given to sources of information based on empirical and fieldwork.
Overcoming the issue	1. The available national, European and international information sources have been studied in depth. Including both the strengths of the different sources of information and their gaps. 2. The generation of accounts has been developed based on computer models that make them repeatable in time and space. It can generate different natural capital accounts by supplying input data 3. The networking developed between the different teams involved in MAIA has served to discover the data gaps and the alternatives to these gaps for the development of accounts.	

		4. From the first stages of the development of natural capital accounting, the team has maintained a wide catalogue of information sources, promoting innovation and frontier knowledge.
	Involved stakeholders	• Since the beginning of the project, a fluid relationship has been maintained with the Ministry of Ecological Transition and Demographic Challenge and specifically with the Nature Data Bank, its main data department. Including in this relationship data transfer, cooperation and compilation of recommendations. • Concerning the development of the accounting of the condition of the forests, we also opened a channel of communication with the Ministry of Ecological Transition and Demographic Challenge, but this time with the General Subdirectorate of Forest Policy and Fight against Desertification. • On an international scale and especially concerning conditions, we have collaborated with the JRC and the United Nations to implement the SEEA-EA condition methodology in forest ecosystems on a European and international scale.
	MAIA support	The MAIA project has played a key role in overcoming the early stages of implementing a natural capital accounting system. It has allowed the generation of the first pilot ecosystem accounts of based on the SEEA-EA framework and the approach of public administrations towards this methodological framework.
Lessons learned		1. It is necessary to involve and inform the administration and other stakeholders in the production of the ecosystem

	accounting system. On the one hand, to overcome possible conceptual barriers and explain the processes developed. On the other hand, listen to and implement improvements and recommendations that can facilitate the implementation of a natural capital accounting system beyond pilot and academic tests.
	2. Projects like MAIA are of great importance since they facilitate the creation of results that can be used to explain and facilitate the implementation of natural capital accounting and the reinforcement of collaboration and learning platforms between different teams and countries.
	3. Finally, if we want to create an accounting system that is durable over time and reliable in its results, we must promote the use of information sources based on objective data, repeatable over time and regularly.

Success Story Box 6: Spain - "Lack of data/ data access".

4. CONCLUSIONS and RECOMMENDATIONS

Based on the above results, we can conclude that the MAIA community highly appreciates the different project-related activities, which mainly aim at sharing information and progress on NCA mainstreaming.

Generally, the vivid (international) cooperation and expert network of the MAIA community enabled many MS to move forward in mainstreaming NCA and to achieve progress in a variety of encountered issues and challenges. This underlines the importance of Coordination and Support Actions such as MAIA. Such Actions bring together key experts in relevant fields of European research and development to promote current initiatives such as NCA and related applications in policy and decision-making. Exchange of knowledge, awareness-raising and capacity building are major project outcomes that directly lead to better implementation of EU wide initiatives. However, even though extensive progress has

been achieved by many MAIA MS, for some issues and challenges the progress is still rather limited, in particular when it comes to the issue "lack of data/ data access".

On the one side, by means of MAIA Deliverable D3.4 and the embedded Success Stories as well as our previous Deliverables (D3.1-D3.3), we aimed at highlighting the progress and great efforts of the MAIA MS. Nevertheless, on the other side, this Deliverable aims at facilitating countries overcoming the considered issues and challenges in the future themselves, benefiting from MAIA MS experiences, in particular when it comes to the presented solutions and lessons learned.

Challenges with regard to "lack of data/ data access" seem to be of significance and omnipresent character. Of course, to some extent, these challenges are far-reaching and out of the scope of the MAIA or other comparable projects. Nevertheless, there are some practical potentials for additional support on that matter. Therefore, on the to-do list for future projects and activities with regard to (mainstreaming) NCA and EA, the development of guidance material on available input data should be included. A thorough overview on all (open access) available platforms, including specifics on the available dataset, their thematic scope and further requirements should be compiled. As this domain is evolving constantly, the list should be set up as a living dynamic collection of information. Besides, in order to increase the usability of the collection, a well-developed structure and metadata documentation should be elaborated. The collection of information should be accessible form different *entry points*. In that context, also, appropriate filtering options should be available.

More generally, throughout the MAIA MS and for all the different issues discussed in this Deliverable, the MAIA networking and knowledge exchange activities have been considered extremely helpful. Therefore, it seems to be highly relevant that measures are taken to ensure maintaining the network and cooperation alive post-MAIA. In addition to that, the technical issues and challenges, namely (i) data availability and quality, (ii) validation of the accuracy, (iii) spatial resolution and spatial aggregation, and (iv) identification of reference values, as well as the additional issues and challenges identified by the MAIA partners, such as (v) lack of cooperation among stakeholders, and (vi) lack of agreement on methodologies, should be considered in future support and coordination actions.

4.1. RECOMMENDATIONS

Based upon what we have learned from the MAIA MS' progress and experiences and our insights from this Deliverable, we propose a stepwise approach for a successful implementation and mainstreaming of NCA (see Box 2, on page 51).

As very first step in the EA process, one needs to identify the purpose of action, thus, the thematic scope and/ or questions that one plans to answer. This should ideally be done in alignment with policy priorities. Based upon the selected purpose/ scope, the corresponding ecosystem types will be identified.

As a second step, one should identify and involve the relevant stakeholders. In that course, corresponding networks and communities of practices should be created. Engagement and collaborations with colleagues from other related disciplines, statistical agencies and further relevant offices should be pursued. In the process it could be very useful to participate to or even organise workshops in order to enhance networking, knowledge creation and sharing. Also, stakeholders should be informed about (upcoming) European regulations, strategies and the EU Green Deal.

As a third step, one can start with searching and collecting relevant available datasets. Therefore, the national as well as international (geo-)data platforms, data services and monitoring systems should be considered. In addition to that, collaborating partners and stakeholders should be involved and solicited to share their data.

As the fourth step, the methods for the actual EA progress will be selected. They should comply with SEEA-EA guidelines and be based upon inter- and transdisciplinary research. Also, they need to be adapted to ones resources, i.e. technical skills, knowledge, available datasets and personnel. Here, it makes sense to harness the vast amount of international experiences which has been made available by MAIA partners and other (inter-)national projects. Again, also for this step it would be highly beneficial to collaborate with statistical agencies and other relevant governmental or research institutes.

In the fifth step, the actual EA development takes place. Based upon the identified scope, the collected information and data and selected method(s), the EA is compiled and respective maps and accounting tables are generated. Different approaches can be tested and evaluated in various pilot Ecosystem Accounts.

As the sixth step, it is the turn of dissemination and communication of the results of the pilot accounts. The outcomes should be published and discussed, including information on respective uncertainties. In order to increase the significance of the outreach activities, the

communication should be adapted to the different target/ user groups. Again, the organisation of a national workshop would be a meaningful and efficient tool to communicate specific results and raise general awareness about EA. In that course, it might also be advisable to use the results of the pilot account(s) as "hook" to compile a structured argumentation on the need for/ and relevance of Ecosystem Accounting.

The seventh step would be the "integration into official national statistics"[17]. In the best-case scenario, the work and discussions on the pilot Ecosystem Account(s) have facilitated or triggered the national government to take up the responsibilities for the compilation of Ecosystem Accounts.

As the eighth step, one should keep on supporting the course, e.g. by generally sharing data, information and experiences. More specifically, also the development of guidance material to report on technicalities of EA could be helpful. Long-term consultation of the statistical offices should be offered.

The final step and at the same time overarching aim of the process is the implementation and policy use[17]. In order to facilitate this step, successful policy applications of EA from front-runner countries can be shared. Also, it would be helpful to provide a standardized approach on EA data reporting.[18]

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[17] For step 7 and 8, the MS are dependent on the official mandate and defined responsibilities across national authorities. Thus, we can only recommend *facilitating* activities here.
[18] In order to learn more on the matter of policy use and implications, MAIA WP2 Deliverables and reports should be consulted.

1. **Identification of the purpose, thematic scope/ relevant questions for the accounting**
- Alignment with policy priorities in EU member states and institutions
- Identification of specific ecosystem type (e.g. forest, marine)

2. **Identification and involvement of Stakeholders**
- Creating networks and communities of practice, as well as engaging colleagues from other related disciplines
- Collaboration with statistical agencies and other relevant government offices
- Participation and/ or organization of workshops for knowledge creation and sharing
- Promotion of (upcoming) European regulation, strategies and the EU Green Deal

3. **Collection of relevant (open access) dataset**
- Collection of data from national/ international platforms, data services and monitoring systems
- Inquiring and compilation of datasets from collaboration partners and stakeholders

4. **Method selection (biophysical and monetary) for accounting**
- Compliance with SEEA-EA guidelines
- Based on interdisciplinary/transdisciplinary research
- Harnessing international experiences from MAIA partners and projects such as ESMERALDA, OpenNESS, OPERAs, MAES, KIP-INCA and WAVES
- Collaboration with statistical agencies, other relevant government offices and research institutions

5. **Pilot account compilation**
- Testing and evaluation of various approaches in suitable pilot accounts
- Compilation of Ecosystem Account(s) (generation of maps and accounting tables)

6. **Dissemination and Communication**
- Publication of outcomes, (critical) discussion of results and (un)certainties
- Appropriate communication of results for different user groups
- Organization of (a) national workshop(s) to communicate results and raise awareness about Ecosystem Accounting
- Compilation of a structured argumentation on the need for/ relevance of Ecosystem Accounting

7. **Integration into official national statistics**
- Development of guidance materials to report on technicalities and to facilitate experience sharing incl. employment of consistent data sharing and documentation protocols
- Consultation of National Statistical Offices

8. **Implementation and policy use**
- Dissemination of successful policy applications of Ecosystem Accounts from front-runner countries to national sector agencies
- Providing a standardized approach on NCA data reporting (e.g. at national level, based on the European Environment Agency reference grids)

Box 2: Proposed recommended steps for a successful implementation and mainstreaming of NCA.

5. REFERENCES

Campagne S, Prodanova H, Burkhard B, Santos-Martín F, Barton D, García Bruzón A, Brown C (2019) MAIA Deliverable 3.1 - Report on NCA - SEEA state-of-the-art: Online survey results.

García Bruzón A, Santos-Martín F, Campagne S, Burkhard B, et al. (2020) MAIA Deliverable 3.2 - Co-design pilots ecosystem core accounts in participating countries.

Lange S, Burkhard B, García Bruzón A, Santos-Martín F, et al. (2022) MAIA Deliverable 3.3 - Pilot ecosystem core accounts report.

Desair J, Jacobs S, Campagne S, Burkhard B, et al. (2021) MAIA Country Fact Sheets. Link: https://maiaportal.eu/factsheets

6. ANNEX

Question	Possible response
Please, identify the country, which you represent:	Open-Ended Response
In case, you identified missing aspects on mainstreaming NCA, please, record them here:[19]	Open-Ended Response
In case, you identified missing potential support activities by the MAIA project with regard to mainstreaming NCA, please, record them here:[20]	Open-Ended Response
Please, identify if you encountered the following issue: Lack of policy support	Yes/ No
Please, identify if you overcame the following issue: Lack of policy support	Yes/ No
Please, identify if Lack of financial resources/ personnel	Yes/ No
Please, identify if you overcame the following issue: Lack of financial resources/ personnel	Yes/ No

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[19] Before the survey participants were asked to answer this question, the (process of) "mainstreaming NCA" definitions from Chapter 3.1 were presented to them.
[20] Before the survey participants were asked to answer this question, the potential support activities lied down in Chapter 3.1 were presented to them.

Please, identify if you encountered the following issue: Lack of technical skills/ knowledge	Yes/ No
Please, identify if you overcame the following issue: Lack of technical skills/ knowledge	Yes/ No
Please, identify if you encountered the following issue: Lack of data/ data access	Yes/ No
Please, identify if you overcame the following issue: Lack of data/ data access	Yes/ No
Please, identify your solutions with regard to overcoming the issue: Lack of policy support	Open-Ended Response
Did/ Can MAIA support a/ your country in implementing your identified solution tackling "Lack of policy support"? If yes, how?	Open-Ended Response
Please, identify your solutions with regard to overcoming the issue: Lack of financial resources/ personnel	Open-Ended Response
Did/ Can MAIA support a/ your country in implementing your identified solution tackling "Lack of financial resources/ personnel "? If yes, how?	Open-Ended Response
Please, identify your solutions with regard to overcoming the issue: Lack of technical skills/ knowledge	Open-Ended Response
Did/ Can MAIA support a/ your country in implementing your identified solution tackling "Lack of technical skills/ knowledge "? If yes, how?	Open-Ended Response
Please, identify your solutions with regard to overcoming the issue: Lack of data/ data access	Open-Ended Response
Did/ Can MAIA support a/ your country in implementing your identified solution tackling "Lack of data/ data access "? If yes, how?	Open-Ended Response
Please rank the below listed potential "challenges" based upon their relevance. From 1 to 4, where 1 indicates the highest and 4 the lowest relevance.	*see below*
Data availability/ quality: ___	1 to 4
Implementation of validation: ___	1 to 4

Spatial resolution and spatial aggregation: ___	1 to 4
Identification of reference values: ___	1 to 4
Are there any other issues and/or challenge you encountered?	Open-Ended Response

Appendix 1: Overview of the MAIA WP3 mentimeter survey.

Question	Possible response
Name of the MAIA partner:	Open-Ended Response
Kindly identify the country which you represent	Open-Ended Response
Did you identify missing aspects on mainstreaming NCA?[21]	Yes/ No
Please record the missing aspects on mainstreaming NCA here:	Open-Ended Response
Did you identify missing potential support activities by the MAIA project with regard to mainstreaming NCA[22]?	Yes/ No
Please record the missing potential support activities by the MAIA project with regard to mainstreaming NCA here:	Open-Ended Response
Please identify the extent to which you encountered the issue of "lack of policy support" in your country:	1 (Not at all) to 10 (Very much)
Please identify the extent to which you overcame the issue "lack of policy support":	1 (Not at all) to 10 (Completely)
How did you/ your country overcome the issue of "lack of policy support"?:	Open-Ended Response
How did the MAIA project support your country in overcoming the issue of "lack of policy support"?:	Open-Ended Response
Do you have (additional) ideas on how the MAIA project could better support a country in overcoming the issue of "lack of policy support"? Please add those here:	Open-Ended Response
Please identify the extent to which you encountered the issue of "lack of financial resources/ personnel" in your country:	1 (Not at all) to 10 (Very much)

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[21] Before the survey participants were asked to answer this question, the (process of) "mainstreaming NCA" definitions from Chapter 3.1 were presented to them.
[22] Before the survey participants were asked to answer this question, the potential support activities lied down in Chapter 3.1 were presented to them.

Please identify the extent to which you overcame the issue of "lack of financial resources/ personnel":	1 (Not at all) to 10 (Completely)
How did you/ your country overcome the issue of "lack of financial resources/ personnel"?:	Open-Ended Response
How did the MAIA project support your country in overcoming the issue of "lack of financial resources/ personnel"?:	Open-Ended Response
Do you have (additional) ideas on how the MAIA project could better support a country in overcoming the issue of "lack of financial resources/ personnel"? Please add those here:	Open-Ended Response
Please identify the extent to which you encountered the issue of "lack of technical skills/ knowledge" in your country:	1 (Not at all) to 10 (Very much)
Please, identify the extent to which you overcame the issue of "lack of technical skills/ knowledge":	1 (Not at all) to 10 (Completely)
How did you/ your country overcome the issue of "lack of technical skills/ knowledge"?:	Open-Ended Response
How did the MAIA project support your country in overcoming the issue of "lack of technical skills/ knowledge"?:	Open-Ended Response
Do you have (additional) ideas on how the MAIA project could better support a country in overcoming the issue "lack of technical skills/ knowledge"? Please add those here:	Open-Ended Response
Please identify the extent to which you encountered the issue of "lack of data/ data access":	1 (Not at all) to 10 (Very much)
Please identify the extent to which you overcame the issue of "lack of data/ data access" in your country:	1 (Not at all) to 10 (Completely)
How did you/ your country overcome the issue of "lack of data/ data access"?:	Open-Ended Response
How did the MAIA project support your country in overcoming the issue of "lack of data/ data access"?:	Open-Ended Response
Do you have (additional) ideas on how the MAIA project could better support a country in overcoming the issue "lack of data/ data access"? Please add those here:	Open-Ended Response

Please rank the below listed potential "challenges" based upon their relevance. From 1 to 4, where 1 indicates the highest and 4 the lowest relevance.	*see below*
Data availability/ quality: ___	1 to 4
Implementation of validation: ___	1 to 4
Spatial resolution and spatial aggregation: ___	1 to 4
Identification of reference values: ___	1 to 4
Are there any other issues and/or challenge you encountered?	Yes/ No
If you encountered any other issues and challenges, what were these?	Open-Ended Response
If you had any other issues and challenges, please briefly elaborate how you overcame them?	Open-Ended Response
Did the MAIA project support, or could it support, your country in overcoming these issue(s)? If so, please explain how	Open-Ended Response

Appendix 2: Overview of the WP3 part of the joined MAIA WP2/ WP3 survey.