



BOOK OF ABSTRACTS

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I. SESSION DESCRIPTION

ID: T4a

National & large scale MAES projects in Europe – road towards policy uptake and implementation

Hosts:

	Title	Name	Organisation	E-mail
Host:		Agnes Vari	ELKH Centre for Ecological Research	vari.agnes@ecolres.hu
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Abstract:

The EU Biodiversity Strategy 2020 (Target 2 Action 5) called the EU member states to map and assess ecosystems and their services (ES) in their territory. Following this initiative, numerous national and subnational MAES projects and initiatives have emerged all over Europe, and similar projects are on their way in many other regions of the world too. We want to provide a forum to the researchers engaged in such national or large-scale MAES projects, and open up possibilities to exchange upon challenges and lessons from the different countries' MAES projects. While many MAES projects have already delivered a wide range of results, many indicated (e.g. in last year's European ESP Conference session on national MAES) that steps towards synthesising results and policy uptake lie still ahead. The synthesis of results is essential to formulate clear and well-balanced messages towards decision making, but it also has its own pitfalls. Also, formulating these messages is one step, but achieving actual implementation – conserving ecosystem services, biodiversity, or



'nature' in general – is even more complex. Reflecting on barriers to policy uptake as well as on good practices of implementation might add to achieve the goals. The efficiency of policy uptake and implementation depends on a number of features, starting from how easily the used models can be understood, the 'palatability' of results presented, differences in spatial scales that need to be bridged for implementation, the perceived reliability of results, the commitment of specific decision makers, or the wider policy landscape in which new policy items should be integrated. We would especially welcome contributions reflecting on the uptake of MAES results.

Nevertheless, we also want to give an opportunity to introduce any updates or progress from large-scale MAES projects and their recent findings to a wider audience – and learn from these.

This session aims to give an opportunity for MAES-related projects to interact, share good practices, and discuss challenges arising through e.g. the level of involvement or commitment from decision makers, methodological difficulties of synthesising results, or spatial scales. Also, the session hopes to discover and analyse commonalities and divergences, and to synthesise valuable lessons for future MAES assessments as well as for how to make progress towards real-world implementation.

Goals and objectives of the session:

We want to facilitate experience sharing & joint knowledge production among MAES project coordinators and participants. We also aim to catalyse collaborations for co-authoring scientific manuscripts on the shared experiences. For this reason we invite talks and posters that:

- present recent results or progress in national or large-scale MAES assessment.
- reflect on issues that enable or hinder the process to policy uptake and implementation.

Planned output / Deliverables:

We plan to create a discussion on the insights that we can derive from the different MAES processes, possibilities to overcome difficulties and the way towards successful implementation and policy uptake. Further possible outputs could be a joint paper.

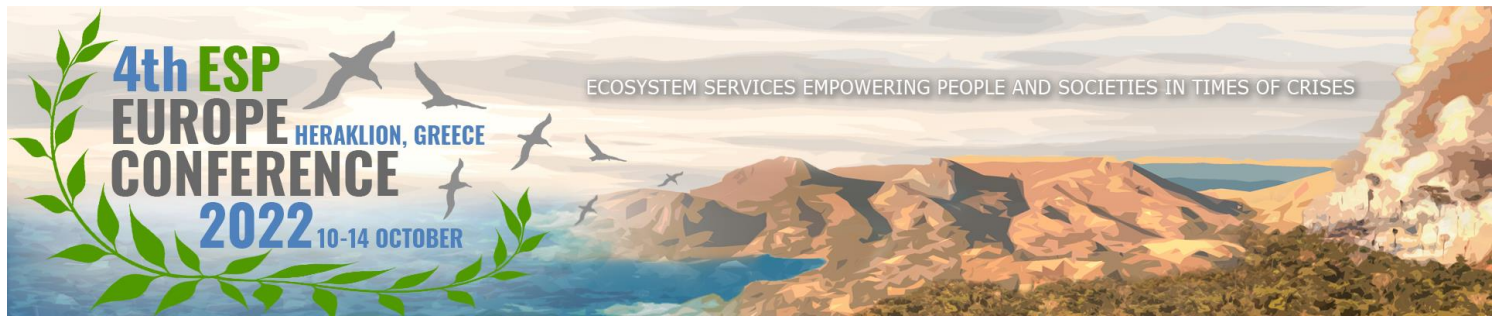
Session format:

Standard session (presentations)

Voluntary contributions accepted:

Yes, I allow any abstract to be submitted to my session for review

Related to ESP Working Group/National Network:



Thematic Working Groups: TWG 4 – Mapping ES

II. SESSION PROGRAM

Date of session: Friday, 14 October 2022

Time of session: 11:00–15:30

Timetable speakers

Time	First name	Surname	Organization	Title of presentation
11:00 – 11:15	Karsten	Grunewald	Leibniz–Institute of Ecological Urban and Regional Development	What information (indicators) on ecosystems and their services as well as on biodiversity is currently available at national level in Germany?
11:15 – 11:30	Mette	Termansen	University of Copenhagen	From MAES project to national land use model for water, climate, biodiversity and recreation policy analysis: Experiences from Denmark
11:30 – 11:45	Madli	Linder	Estonian Environment Agency	Implementation of the results of national MAES in decision making in Estonia
11:45 – 12:00	Andrzej	Mizgajski	Adam Mickiewicz University in Poznan	Transdisciplinarity as a challenge for the ecosystem services approach. Insights from Poland
12:00 – 12:15	Paulo	Pereira	Mykolas Romeris University, Lithuania	Mapping and Assessment of Ecosystem Services in Lithuania (LINESAM). Advances in the MAES initiative
12:15 – 12:30	Davina	Vačkářová	Global Change Research Institute of the Czech Academy of Sciences	National assessment and mapping of ecosystem services in the Czech Republic – progress and implementation
12:30 – 13:30	BREAK			
13:30 – 13:45	Mario V.	Balzan	Malta College of Arts, Science and Technology	Case–studies of recent MAES implementation in Malta and uptake in policy and decision–making



Time	First name	Surname	Organization	Title of presentation
13:45 – 14:00	Miguel	Inácio	Mykolas Romeris University, Lithuania	National scale assessment and mapping of lake ecosystem services: exploring gaps from MAES projects in Lithuania
14:00 – 14:15	Marko	Vainu	Estonian Environment Agency	Assessment of aquatic ecosystem services in Estonia: where we are and where we would want to be
14:15 – 14:30	Eszter	Tanács	Centre for Ecological Research, Hungary	Partial validation of a national-scale cropland condition map using the results of a landscape-scale pollinator survey
14:30 – 14:45	Giorgos	Mallinis	School of Rural and Surveying Engineering, Aristotle University of Thessaloniki	LIFE-IP 4 NATURA ppGIS/webGIS: A Public Participation Geographic Information System (ppGIS/webGIS) for visualizing, monitoring and mapping ecosystem services over Greece
14:45 – 15:00	Ina M.	Sieber	Leibniz Universität Hannover, Germany	The EU Overseas: lessons learned and implications from first ecosystem services assessments (MAES) for policy and decision-making
15:00 – 15:15	Ágnes	Vári	McGill University, Montreal	National and large-scale ecosystem services assessments in Canada – an overview of recent work
15:15 – 15:30	Kremena	Gocheva	Bulgarian Academy of Sciences	Semantic and ontological links for data fusion between the MAES ecosystem services paradigm and Whole system socio-ecological research

III. ABSTRACTS

Abstracts are ordered based on the session program. The first author is the presenting author unless indicated otherwise.

1. Type of submission: Abstract

T. Thematic Working Group sessions: T4a – National & large scale MAES projects in Europe – road towards policy uptake and implementation



What information (indicators) on ecosystems and their services as well as on biodiversity is currently available at national level in Germany?

Presenting author: Karsten Grunewald

Other author(s): Sabine Lange, Sophie Meier

Affiliation: Leibniz-Institute of Ecological Urban and Regional Development, Germany

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A demand for ecosystem-based information and indicators is increasingly developing. Initiated by international frameworks and initiatives, in particular the EU Biodiversity Strategy 2020 published in 2011, Germany began to spatially record the status and services of ecosystems in a concrete, comprehensive and systematic manner in 2013. The nationwide mapping and assessment of ecosystems followed the basic recommendations of the European MAES working group ("Mapping and Assessment of Ecosystems and their Services"). Based on many scientific studies, there is now increasingly comprehensive and integrated knowledge for a nationwide assessment of ecosystems. The System of Environmental Economic Accounting – Ecosystem Accounts (UN SEEA-EA 2021) plays a central role in the development of standardised methodological approaches in national accounting systems.

In our contribution, an overview is given of the ecosystem extent account in Germany (1.). Ecosystem mapping and accounting (monitoring of change of ecosystems' area) provides the basis for the assessment of ecosystem conditions and services. It is based on nationwide digital topographic data, mainly the Land Cover Model (LBM-DE), which is updated in 3-year intervals (2012–2015–2018–2021 etc.), and on European land use or ecosystem classifications. Data and condition indicators are regularly collected as part of sectoral environmental monitoring by institutions such as the Federal Environment Agency, the Federal Agency for Nature Conservation, the Federal Agency for Hydrology, the Federal Institute for Geosciences and Natural Resources or the J. H. v. Thünen Institutes (2.). The intention is to build on existing environmental reporting systems such as the EU Water Framework Directive, forest inventory, floodplain surveys, etc. and to synthesise, strengthen and further develop them – but not to replace them. Biodiversity is an essential component in measuring the state of ecosystems. We provide an outline of corresponding indicators (3.). Finally, we give a synopsis of already available national ecosystem service indicators (4.).

Keywords: Natural capital, policy guidance, monitoring, accounting, indicators



2. Type of submission: Abstract

T. Thematic Working Group sessions: T4a – National & large scale MAES projects in Europe – road towards policy uptake and implementation

Case-studies of recent MAES implementation in Malta and uptake in policy and decision-making

Presenting author: Mario V Balzan

Other author(s): ,

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This presentation provides an overview of case-studies of recent work mapping and assessing ecosystem services (MAES) in Malta, assesses the main drivers impacting ecosystem service capacities and flows, and reflects on the uptake of these assessments in policy and decision-making.

The mapping and assessment of ecosystem services have been carried out for recreational and nature-based tourism ecosystem services using proxy-based indicators, crowdsourced data and surveys with locals and tourists to assess ecosystem services, and evaluate the key factors determining ecosystem service capacities and flows at a national scale and further uptake of nature-based tourism by stakeholders. At a local scale, MAES has been used to identify protected area measures that would be expected to lead to enhanced ecosystem service supplies whilst also considering the preferences of experts and stakeholders.

The MAES has also been carried out, using proxy-based indicators and expert knowledge, to assess urban ecosystem services for the Valletta urban agglomeration, consisting of the densely populated Grand Harbour area. Results indicate that the highest ecosystem service capacities are in the urban fringes and the lowest in dense urban cores, public gardens had the highest cultural ecosystem service capacities but low regulating ecosystem service capacities per unit area. Contrastingly, private gardens and urban trees had the highest regulating ecosystem service capacities per unit area. Implications for the prioritisation of multifunctional nature-based solutions based on their performance, and the enablers and barriers to uptake in decision-making, are discussed based on interviews with stakeholders from the case-study area of Malta.



Finally, the ecosystem service assessments have been carried out for main waterbodies as part of the implementation of the river basin management plan for Malta. Outcomes of these MAES processes have been used to develop watershed management plans that improve ecosystem service capacities and contributions to human well-being.

Keywords: Nature-based Tourism, Nature-based Recreation, Nature-based Solutions, Landscape and urban planning, Urban ecosystem services, Water Management

3. Type of submission: Abstract

[T. Thematic Working Group sessions: T4a – National & large scale MAES projects in Europe – road towards policy uptake and implementation](#)

National and large-scale ecosystem services assessments in Canada – an overview of recent work

Presenting author: Agnes Vari

Other author(s): Jackie Hamilton, David Ferguson

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While in Europe the mapping and assessment of ecosystems and their services has been going on in recent years as a more or less concerted effort – but with diverse implementations – driven by a common political will with the EU Biodiversity Strategy to 2020 and 2030, in other parts of the world mapping and assessing ES efforts have had a different background. Here I present a short overview of Canadian ES mapping projects and relate them to European national MAES projects, starting with the federal Measuring Ecosystems Goods and Services project in 2011 that involved large-scale pilots, looking into some regional studies and those ES assessments available for the whole of Canada. Due to the geographical extent of Canada in relation to Europe, the terms 'national', 'regional' and 'large-scale' offer very different aerial coverage compared to that used in Europe. Thus some seemingly smaller scale assessments are also included in the overview.

We look at the chosen ES indicators, the cascade levels at which they were assessed, corresponding ecosystem extent accounting, assessment of other components like demand or human well-being and steps towards policy uptake – and relate our findings to European trends in national MAES.



Analyzing the interpretations of the ES conceptual frameworks, such as the cascade framework, or the ES classification systems helps to align different assessments, discover commonalities and 'convert' methods and results. Looking further, at approaches outside the common range can provide us with new insights, with a different set of solutions – or show us the same, 'analogous' developments that have the potential to work in a variety of socio-ecological settings in the world.

Keywords: national mapping and assessment, implementation, cascade framework, policy

4. Type of submission: Abstract

[T. Thematic Working Group sessions: T4a – National & large scale MAES projects in Europe – road towards policy uptake and implementation](#)

Semantic and ontological links for data fusion between the MAES ecosystem services paradigm and Whole system socio-ecological research

Presenting author: Kremena Gocheva

Other author(s): Svetla Bratanova – Doncheva, Kostadin Katrandzhiev

Affiliation: Institute of Biodiversity and Ecosystem Research at the Bulgarian Academy of Sciences,

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Policy relevant research in the context of mapping and assessment of ecosystem services and natural capital accounting are closely related to semantically linked concepts and terms defined over the last decades within the European and national MAES projects. They resulted in a number of global and EU level nomenclatures and standards related to ecosystems and ecosystem services.

In parallel, the International Long-Term Ecosystem Research network (iLTER) and its European member network (eLTER) utilize the Whole System (WAILS) paradigm to systematize their decades of data collection and related research in over 300 sites across Europe. One of the important recent developments in eLTER is the incorporation of socio-ecological research in WAILS and the development of dedicated socio-ecological research platforms (LTSER).

The research objects (ecosystems) are the same in both cases and the research directions have arguably a significant degree of overlap in their interdisciplinary approach towards



exploring anthropogenic impact. However, currently there are both semantic differences and different scientific objectives between the policy related research with wall-to-wall national and EU collected data in the MAES context and the long-term, local research data collected by eLTER and LTSER.

Basing on the Bulgarian experience, we explore the potential for creating semantical and ontological compatibility between the conceptual systems of MAES (as summarized in the ESP Guidelines for Integrated Ecosystem Services Assessment) and WAILS (as per the ongoing work on developing a new framework of eLTER standard observations and methods). We explore the opportunities that such compatibility creates for data fusion and co-analysis, and their benefits for both ecosystem services research / natural capital accounting, and the data integration necessary for holistic long-term ecosystem research.

Keywords: Ecosystem services, Natural Capital Accounting, Whole System Research, Data fusion

5. Type of submission: Abstract

[T. Thematic Working Group sessions: T4a – National & large scale MAES projects in Europe – road towards policy uptake and implementation](#)

National scale assessment and mapping of lake ecosystem services: exploring gaps from MAES projects in Lithuania

Presenting author: Miguel Inácio

Other author(s): Paulo Pereira,

Affiliation: Environmental Management Laboratory, Mykolas Romeris University, Lithuania,

Contact: rinacio.miguel@gmail.com

The work developed under the MAES Project led to advancing European ecosystem services (ES) assessment and mapping. Lithuania's most comprehensive project that contributed to MAES was the "Lithuanian National Ecosystem Services Assessment and Mapping" (LINESAM). Several ES were mapped for the terrestrial and marine realms, producing a comprehensive spatial knowledge of ES at the national scale. Hence, areas with a high supply of several ES coincided with lake regions in Lithuania. Therefore, we took the opportunity to explore this gap and developed the "Lithuanian lake ecosystem services: impacts of climate and land-use change" (LACLAN) Project. LACLAN's main aim is to quantitatively assess and map lake ES supply, flow and demand, in a multi-scale and multi-temporal perspective, including climate



and land–use changes. In total, more than 1000 lakes are comprised within the project. Together with stakeholders, 2 Provisioning, 2 Regulating & Maintenance and 2 Cultural ES were chosen. The mapping will be done by covering the Copernicus Corine Land Use and Land Cover temporal steps (1990, 2000, 2006, 2012, 2018), the current status (2022) and the future (2050) based on scenarios. We have successfully modelled and mapped the ES for the Corine periods based on observational, remote sensing, and socio–economic data. Our preliminary results allowed us to identify areas of high supply and demand for lake ES. This information is critical in the perspective of spatial planning and environmental management. It contributes to achieving Lithuania's targets set by environmental agendas like the EU Biodiversity 2030 strategy.

This study was conducted under the "Lithuanian lake ecosystem services: impacts of climate and land–use change" (LACLAN) Project. The project receives funding from the European Social Fund under the No 09.3.3–LMT–K–712 "Development of Competences of Scientists, other Researchers, and Students through Practical Research Activities" measure.

Keywords: remote sensing, mapping, GIS, modelling, freshwater

6. Type of submission: Abstract

[T. Thematic Working Group sessions: T4a – National & large scale MAES projects in Europe – road towards policy uptake and implementation](#)

Transdisciplinarity as a challenge for the ecosystem services approach. Insights from Poland

Presenting author: Małgorzata Stepniewska

Other author(s): Andrzej Mizgajski,

Affiliation: Adam Mickiewicz University in Poznan, Faculty of Human Geography and Planning, Department of Integrated Geography, B. Krygowskiego 10, 61–680 Poznan, Poland, Poland

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The ability to consider the transdisciplinary approach to ecosystem services (ES) as a part of socio–ecological systems is the key to developing the scientific coherence of the ES concept and bringing it to the operational phase. Although transdisciplinarity lies at the core of the ES field, the implementation of competent, mutual permeation of knowledge between different disciplines is still challenging.



We present a transdisciplinarity framework settled for the national-wide project "Ecosystem services provided by main types ecosystems in Poland – an applied approach", carried out in 2020–2023. Within the project, research teams representing various scientific disciplines attempt to formulate relevant indicators for capturing ecological, cultural and economic values provided by ecosystems typical for the landscape-ecological structure of the country. The analysis covers ES provided by agroecosystems, forests, urban ecosystems, freshwaters, marine ecosystems, degraded ecosystems and ES on the landscape level. Provided indicators are tested at national, regional and local scales for identifying the spatial distribution of ES as well as synergies and trade-offs between services and relevant ES bundles. The resulting recommendations can support the administration and expert-practitioners in using the ES approach for natural capital management, in particular, spatial planning and environmental impact assessments for investments as well as strategic documents. Although each research group considering a specific type of ecosystem tends to emphasize one of the aspects: ecological, social, or economic, the involvement in a transdisciplinary project creates opportunities for exciding borders between disciplines and realms of natural and social science. Partial results are promising examples of an integrative approach to considering the relations between ecosystems and different dimensions of human well-being.

The research is a part of the project "Services provided by main types of ecosystems in Poland – an applied approach" and received funding from Iceland, Liechtenstein, and Norway within the EEA Financial Mechanism 2014–2021.

Keywords: ecosystem services values, main ecosystems, Poland

7. Type of submission: Abstract

[T. Thematic Working Group sessions: T4a – National & large scale MAES projects in Europe – road towards policy uptake and implementation](#)

Assessment of aquatic ecosystem services in Estonia: where we are and where we would want to be

Presenting author: Marko Vainu

Other author(s): ,

Affiliation: chief specialist, Estonia

Contact: marko.vainu@envir.ee



The methodology for assessing aquatic ecosystem services (ES) in Estonia has been elaborated in the project LIFE IP CleanEST since 2019. Altogether 17 ESs provided by rivers and 19 provided by lakes were chosen as relevant for Estonia. The classification of these ESs mostly follows CICES v.5.1. Around 70 indicators for assessing the provision/status and the consumption/pressure of these services for both rivers and lakes were selected.

By now the methodology has been applied on 20 flowing water bodies and two standing water bodies in northeastern Estonia. Data from years 2019 and 2020 were used. The selection was limited to water bodies where the provision of ESs will hopefully be improved by 2028 as the result of actions of the LIFE IP CleanEST project. The same water bodies will be assessed again to monitor the progress of the project.

The assessment methodology was developed so that eventually all Estonian aquatic ESs could be mapped. That has proven to be the first challenge. The degree of generalisation that would be acceptable for a comparative assessment of nationwide aquatic ESs tends to be too general for pinpointing the progress made on certain water bodies as a result of certain actions. The second challenge has been the data. Compiling data for 70 indicators for 20 flowing water bodies was achievable, but doing the same for thousands of water bodies in the whole of Estonia poses great difficulties. The third challenge has been comparability. In order to be taken up by policy makers, the ES assessment results have to be easily comprehensible and comparable between water bodies. For that a general ES index was developed.

The Estonian Ministry of Environment is interested in applying ES assessment for monitoring the effectiveness of Water Basin Management Plans, but for that the challenges have to be resolved.

Keywords: aquatic ecosystem services, Estonia, rivers, lakes, CICES

8. Type of submission: Abstract

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National assessment and mapping of ecosystem services in the Czech Republic – progress and implementation



Presenting author: Davina Vackarova

Other author(s): David Stella, Kateřina Mácová

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National ecosystem assessments and national mapping and assessment processes (MAES) in European states gained momentum with international initiatives such as Millennium Assessment, TEEB and IPBES. At the European level, Biodiversity Strategy for 2030 reiterates the importance of protected areas and ecosystem restoration tied to measuring the value of nature, natural capital accounting and integration of nature's benefits into public decision-making.

Scientifically based ecosystem services assessments are usually at the outset of national assessment processes, but they are not themselves sufficient for the implementation at the complex science-policy boundary. Mainstreaming of ecosystem services into decision-making and uptake of ecosystem services knowledge in policy requires effective inter-institutional cooperation and stakeholder involvement in knowledge production.

In the Czech Republic, the Integrated project LIFE for Natura 2000 network in the Czech Republic, called shortly One Nature, implements nation-wide assessment and mapping of ecosystem services. One of its several major axes is the mapping and assessment of benefits provided by ecosystems and biodiversity to the society in general, and by Natura 2000 network in the context of conservation management specifically. The One Nature project enables to create a platform necessary for the mainstreaming of ecosystem services into nature conservation and other sectoral policies and actions.

The project supports national assessment and mapping by developing scientific evidence and databases for the quantitative mapping, economic valuation and sociocultural assessment of ecosystem services. We present results of the first round of participatory case studies, involving qualitative approaches to ecosystem services assessments. Methodology for the quantification and mapping of selected ecosystem services, including carbon sequestration, water purification and recreation, has been proposed and further refined.

The project aims to develop and implement multiple outcomes which are shaped by extensive stakeholder consultations and cooperation. We illustrate the policy uptake and implementation by the establishment of the National Platform for Ecosystem Services.



Keywords: Ecosystem services, Natura 2000, MAES process, mapping and assessment, National Platform for Ecosystem Services

9. Type of submission: Abstract

[T. Thematic Working Group sessions: T4a – National & large scale MAES projects in Europe – road towards policy uptake and implementation](#)

Mapping and Assessment of Ecosystem Services in Lithuania (LINESAM). Advances in the MAES initiative

Presenting author: Paulo Pereira

Other author(s): Eduardo Gomes, Marius Kalinauskas

Affiliation: Environmental Management Laboratory, Mykolas Romeris University, Lithuania, Lithuania

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Mapping and Assessment of Ecosystems and their Services (MAES) initiative contributed substantially to understanding the ecosystem services (ES) status. At the national level, MAES work was supported by different projects that helped in ES mapping and assessment. "Lithuanian National Ecosystem Services Assessment and Mapping" (LINESAM) was one of these projects. The project was ambitious and aimed to "improve the understanding of nature–society interaction through an ES–based approach, identify national drivers of change (environmental and socio–economic) and their effect on ES supply and demand, support the development of planning and management strategies grounded on socio–ecological principles of ecosystems and biodiversity". A large number of Regulating, Provisioning and Cultural ES was mapped at a national scale in their different components (supply, flow and demand). In total, 20 ES were mapped and assessed. Scenarios were developed using different storylines at the National scale (Marine and Terrestrial environments) and regional scale for Agriculture Areas (Šiauliai region). At the regional scale, different ES mapping and assessment models were developed. Vilnius (Microclimate Regulation, Flood Regulation and Recreation); Alytus (Timber Production), Šiauliai (Cropland) and Klaipeda (Recreation). Overall more than 100 layers were produced. The information produced in this work will be critical to understanding the ES status and future projection at differential scales, essential to support territorial planning and full–fil regional (e.g., EU Biodiversity 2030) and global (UN Sustainable Development Goals) environmental agendas.



Keywords: Lithuania, Ecosystem Services, Mapping, Assessment

10. Type of submission: Abstract

T. Thematic Working Group sessions: T4a – National & large scale MAES projects in Europe – road towards policy uptake and implementation

The EU Overseas: lessons learned and implications from first ecosystem services assessments (MAES) for policy and decision-making

Presenting author: Ina Sieber

Other author(s): Miriam Montero-Hidalgo, Jarumi Kato-Huerta

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The EU Overseas present hotspots of biodiversity and ecosystem services. Due to their remoteness, distance from the EU and insularity, many Outermost Regions (ORs) and Overseas Countries and Territories (OCTs) have faced limited attention to implementing the EU Biodiversity Strategy to 2020. The MOVE EU Project tried to enhance the Mapping and Assessment of Ecosystems and their Services (MAES) from 2017 to 2021, presenting MAES assessments for many Overseas Territories.

Based on this work, we draw first lessons learned and recommendations to improve policy and decision making to enhance MAES implementation in the EU Overseas. Eight case studies from different geographical areas were analysed, including the Azores, the Canary Islands, Saint Martin, Martinique, French Guiana, La Reunion and the Falkland Islands. A comparative assessment was conducted following the main steps in the MAES process, including policy questions' identification, stakeholder networks and involvement, application of MAES methods, dissemination and communication, and implementation.

Results show that the ES concept worked well in different geographical contexts. It addressed various policy domains in the Overseas, especially Nature and Biodiversity Conservation and Marine and Maritime Policy. Due to their insularity, and considering the EU Biodiversity Strategy to 2030, the ORs and OCTs showed a strong focus on the assessment of marine and coastal ES. Yet, a seamless land/sea coverage is needed for informed policy and decision-making. Furthermore, inclusivity and participation of local and indigenous people in MAES studies should be enhanced. Implementation of case studies focussed on



sharing findings with the public and informing citizens, yet, the direct impacts on local and regional policies proved scarce.

Addressing these aspects can contribute to an enhanced implementation of MAES in the EU Overseas in the future.

Keywords: comparative assessment, EU Overseas, EU MAES, ecosystem services, mapping

11. Type of submission: Abstract

[T. Thematic Working Group sessions: T4a – National & large scale MAES projects in Europe – road towards policy uptake and implementation](#)

LIFE-IP 4 NATURA ppGIS/webGIS: A Public Participation Geographic Information System (ppGIS/webGIS) for visualizing, monitoring and mapping ecosystem services over Greece

Presenting author: Giorgos Mallinis

Other author(s): Themistoklis Roustanis, Evi Chalkidou

Affiliation: School of Rural and Surveying Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, Greece

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The public participation geographic information system (ppGIS/webGIS) LIFE-IP 4 NATURA (<https://gis-natura.gr>) is a highly innovative action of the LIFE-IP 4 NATURA project—the first LIFE Integrated Project (LIFE Integrated Project – LIFE IP) in Greece. The LIFE-IP 4 NATURA ppGIS/webGIS aims to contribute in the planning and decision-making process for prioritizing projects, activities and actions within the country's ecosystems, taking into account the concept of Ecosystem Services, in order to improve the protection and conservation regime of the natural capital.

Through the ppGIS/webGIS of the LIFE-IP 4 Natura project, maps and information resulting from project activities, regarding the spatial explicit distribution of ecosystem services at the national level are provided to a diverse range of stakeholders and the public.

The LIFE-IP 4 NATURA ppGIS/webGIS is also designed and enabled in order to facilitate increased public awareness and citizen involvement in the protection of ecosystems and their services



Citizens and interested parties can participate in the mapping and assessment of the country's ecosystem services through mobile and desktop e-applications, developed in the context of the project, all connected in real time to the LIFE-IP 4 NATURA ppGIS/webGIS backend sub-system.

In addition, citizens can record and report the pressures on ecosystems and assess their impact on the services they provide. Finally, volunteers can attach to their spatial explicit assessments various types of multimedia files in order to enrich/validate their assessments.

To enhance citizen participation and increase their interaction with the system, a further set of applications and tools have been developed and integrated into LIFE-IP 4 NATURA ppGIS/webGIS such as story maps for all National Parks of Greece and protected areas and toolboxes for developing customized reports and maps.

Keywords: webGIS, public participation, mapping and assessment, tool

12. Type of submission: Abstract

[T. Thematic Working Group sessions: T4a – National & large scale MAES projects in Europe – road towards policy uptake and implementation](#)

From MAES project to national land use model for water, climate, biodiversity and recreation policy analysis: Experiences from Denmark.

Presenting author: Mette Termansen

Other author(s): Berit Hasler, Gregor Levin

Affiliation: University of Copenhagen, Denmark

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In Denmark, the EU Biodiversity Strategy 2020 (Target 2 Action 5) has led to a string of projects to follow-up on the call for EU member states to map and assess ecosystems and their services (ES) in their territory. Firstly, a review of existing research which could underpin ecosystem service assessments in Denmark was initiated. Secondly, a methodology was developed and tested for a single catchment as a proof on concepts and to illustrate the integration and use of existing data sources. Finally, a national scale model has been developed, specifically with the aim to evaluate multiple ecosystem service outcomes of land use policies.



The national scale model operates across agricultural and forested landscapes and integrates land use data and effects and costs of land use interventions on ecosystem service provision to meet policy targets for water, climate and biodiversity. The model is an integrated economic–environmental model system. It integrates economics, agronomics, forestry, biodiversity conservation science and hydrology within one modelling framework and provides the possibility to assess targeted policies including the differences in environmental effects and economic costs among locations (farms and forest holdings). The model takes a social planner approach and uses a shadow pricing approach to valuation. However, the model results also provide valuable insight for policy development, e.g. the design of voluntary policy schemes.

This presentation will aim to illustrate the current status of the work and how the response to policy needs from the Danish Ministry of Environment has shaped the work.

Keywords: MAES; integrated valuation; climate; water; biodiversity

13. Type of submission: Abstract

[T. Thematic Working Group sessions: T4a – National & large scale MAES projects in Europe – road towards policy uptake and implementation](#)

Partial validation of a national–scale cropland condition map using the results of a landscape–scale pollinator survey

Presenting author: Eszter Tanács

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The availability of robust and reliable large–scale spatial information on ecosystem condition is of increasing importance for conservation efforts. In Hungary, a series of national–scale condition maps were created to fulfil the requirements of the EU Biodiversity strategy to 2020, using different mapping approaches. Croplands are highly artificial ecosystems, which mainly aim to provide a single ecosystem service, food production, at a high level. However, these areas occupy a large portion of the land surface and also affect the state of the surrounding areas and thus play a significant role in maintaining biodiversity. In order to create a general cropland condition map of Hungary, a composite indicator was designed to show the suitability of these areas to support wildlife. The indicator is based on proxy



variables from already existing databases, such as parcel size and the proportion of semi-natural areas within 300 m. In the case of such maps, validation is an important step, however, suitable databases are scarce. In order to provide some measure of validation, we used the results of a landscape-scale pantrap survey from July 2020 and 2021. Pollinator data (wild bees and hoverflies) from 382 pantraps were analysed. We tested how the result of the condition mapping was related to the abundance and species number of pollinators in an agricultural area of Hungary. We found that in the study area croplands with higher condition scores had a higher average abundance and species number of pollinators. The results from the two years differ, the tendency was stronger in 2020 and less so in 2021.

Keywords: ecosystem condition mapping, cropland condition, pollinator, national-scale mapping