

BOOK OF ABSTRACTS

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I. SESSION DESCRIPTION

ID: T4d

Developing and advancing national MAES processes: a path from mapping to implementation

Hosts:

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Abstract:

Many of the EU member states are currently finalizing mapping and assessment of ecosystems and their services in national level. However, there is still a long way to go for successful implementation of the results. As the data from the mapping process is gathering, the next step involves successful implementation of gained results to policy-making and land-use planning. Not all of the mapping exercises carried out in different countries have led to policy-relevant or usable results, but many have. In this session, we would like to develop an open and forward-looking discussion regarding the successes and failures in the mapping and assessment processes so far and explore (potential) successes and failures in implementation of mapping results to nation-wide policy. We aim to answer following questions:

- How have different European countries carried out their nation-wide MAES process and which approaches have led to successes, which ones to failures?
- How to move from nation-wide mapping to nation-wide implementation of mapping results?
- How to facilitate uptake of ecosystem services concept to national or local policy decisions and spatial planning, and which role does the assessment and mapping process (including the selected methods and specific outcomes) play in this?
- Which assessment and mapping outputs have resulted (or have likelihood to result) in "usable" information for implementation in different domains (in policy, spatial planning, natural capital accounting, etc.) and which ones will be probably "left on shelf"?

Goals and objectives of the session:

We would like to facilitate a discussion regarding best practices of national MAES processes and regarding implementation of the outputs of national MAES processes in policies, legislation and



everyday planning. We would encourage submissions that would highlight the strengths and shortcomings of the nation-wide mapping processes in different member states as well as contributions regarding which parts of the current processes have led (or has potential to lead) to most impactful (policy) results. All successful and non-successful examples of implementation of MAES outputs are highly welcomed.

Thus, this session focuses on:

- 1) bringing together knowledge all over EU regarding best practices in nation-wide mapping of ecosystems and their services,
- 2) introducing different means and processes of how MAES results can reach to policy-making and planning.

Planned output / Deliverables:

We encourage submissions from all over Europe and as an example of the path from mapping to implementation we also introduce the methods and policy and planning implications of national MAES process in Estonia. At the end of the session, we will hold structured discussion where different paths from mapping to implementation are mapped and linked with examples all over Europe. As a result, we will work towards joint publication that outlines potential implementation routes for MAES process outputs in different European countries.

Related to ESP Working Group/National Network:

Thematic working group: TWG 4 – Mapping ES

II. SESSION PROGRAM

Date of session: Monday, 7 June 2021

Time of session: 15:30 – 17:30

Timetable speakers

Time	First name	Surname	Organization	Title of presentation
15:30 15:45	Madli	Linder	Estonian Environment Agency	Introduction Utilization of the results of national MAES in decision making in Estonia
15:45 16:00	Eve	Veromann	Estonian University of Life Sciences	Nation-wide mapping and assessment of the condition and services of Estonian agri-ecosystems and potential utilization of the approach in agri-environment schemes
16:00 16:15	Marija	Trencheva	Ss. Cyril and Methodius University	Two-scale approach of ecosystem services assessment and perspectives on implementation in North Macedonia
16:15 16:30	Peter	Mederly	Constantine the Philosopher University in Nitra	Ecosystem services approach facilitating sustainable development of rural areas in Slovakia
16:30	Angela	Pilogallo	University of Basilicata	Mapping Ecosystem Services Multifunctionality: the Italian case

Time	First name	Surname	Organization	Title of presentation
16:45				
16:45 17:00	Jonne	Kotta	University of Tartu	PlanWise4Blue: Online tool to assess cumulative impacts of human pressures on ecosystem services
17:00 17:15	Jan	Daněk	Global Change Research Institute of the Czech Academy of Sciences & Charles University	Tailoring ecosystem services assessment to stakeholder needs in the framework of consultations with key actors in Natura 2000 sites in the Czech Republic
17:15 17:30				Discussion

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: T4d – Developing and advancing national MAES processes: a path from mapping to implementation

Utilization of the results of national MAES in decision making in Estonia

First author: Madli Linder

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In 2020, country-wide biophysical assessment and mapping of four major ecosystem types (wetlands, grasslands, agro-ecosystems, forests) was completed in Estonia (ELME project, co-financed by the European Union Cohesion Fund). Wide range of stakeholders were engaged in the process. The main outcomes of the project were data layers: base map (spatial distribution and extent of ecosystem types) and the maps of ecosystem condition and services. The maps are published in different web applications and the data layers are made available through national



geoinformation system of nature data. The results have already intrigued a lot of stakeholders of various fields, but especially those dealing with spatial planning and biodiversity issues. Some of the examples include the following. According to the suggestion of the union of Estonian environmental associations, ELME's layers have been used in the spatial planning exercise of choosing areas for wind farms in a way not harming biodiversity values. The derivatives of ELME's layers are also used in other projects, e.g., in accounting projects of Statistics Estonia (national statistical office in Estonia). The maps have been used to analyze the multifunctionality of the green infrastructure as it has been designated in Estonian county- and local government-level spatial plans helping to reveal the interruptions and conflicts in the network and, vice versa, identify areas rich in important ecosystem services outside the network that should possibly be part of it. The maps have also been used by nature conservationists and local communities to provide evidence of the ecosystem values other than commercially valued goods that have not been mapped before. The results have also provided information for scientists, are usable as an input in conservation management plans of habitats or protected areas, in zonation of protected areas, in agri-environment schemes, etc.

Keywords: spatial planning, green infrastructure, nature conservation and management, local communities

2. Type of submission: Abstract

[T. Thematic Working Group sessions: T4d – Developing and advancing national MAES processes: a path from mapping to implementation](#)

Nation-wide mapping and assessment of the condition and services of Estonian agri-ecosystems and potential utilization of the approach in agri-environment schemes

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Farmland biodiversity is the main pillar for essential ecosystem services such as natural pest regulation, pollination, nutrient cycling etc. that all are vital elements for agricultural crop production. During national MAES process (ELME project, co-financed by the European Union Cohesion Fund) current condition of agro-ecosystems and ecosystem services was assessed and mapped in 2019–2020 in Estonia. The developed approach is based on the supply of ecosystem services supporting biodiversity and provided by landscape elements and their vicinity in agricultural landscapes. The condition of each field was assessed and mapped (classes: A – outstanding, B – very good, C – poor, D – bad) according to the existence of the landscape elements and their impact zones, and several other site-specific indicators that positively or negatively impacted the final result were considered. The width of impact zones depended on the certain landscape elements and varied from 35 to 75 m. Majority of Estonian agricultural lands belong to the class C and D and only 1.3% correspond to the value class A. The methodology and maps created provide the basis to the new agri-environment schemes of the period starting from 2023. One of the new schemes is called “ecosystem services” and the idea is rewarding the farmers whose arable fields are covered with the ecosystem services (impact zones) to the extent of at least 60% and over 90% (11.4 % and 3.1 % of the arable agricultural land in Estonia as of 2020, respectively). Another proposed new scheme is “valuable permanent grasslands” distinguished during the composition of the ELME map of the agri-ecosystems in Estonia. Public involvement of the stakeholders to the implementation process of the new schemes started in autumn 2019.

Keywords: ecosystem services, agricultural landscape, pest control service

3. Type of submission: Abstract

[T. Thematic Working Group sessions: T4d – Developing and advancing national MAES processes: a path from mapping to implementation](#)

Two-scale approach of ecosystem services assessment and perspectives on implementation in North Macedonia

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Ecosystem services are increasingly exploited concept internationally as well as in a variety of strategic documents of the North Macedonian national legislation. This process was stipulated by the National Biodiversity Strategy and Action Plan (2018–2023) and further elaborated in the National Strategy for Nature Protection (2017–2027). Hence, in 2020, the country prepared the first assessments of ecosystem services on national and local scale. For the national assessment, our approach included selection, assessment and mapping of 15 ecosystem services following the MAES guidelines. A national stakeholder working group selected five ecosystem services from each of the provisioning, regulating and cultural groups of the CICES classification. At National scale, the capacity matrix approach was used to assess the 15 ecosystem services for 15 different ecosystems types (natural and seminatural ecosystems). At Local scale, using Tier II approach, ES indicators were used for four ecosystem services (carbon sequestration, wild plants for nutrition, erosion control and ecotourism) on the Monument of Nature “Vevchani Springs” protected area. The ES selection was guided by the local (municipality of Vevchani) and national stakeholders (Ministry of Environment and Physical Planning). The approach was adapted to reflect the scarcity of data, time limitations, knowledge and human capacities. This biophysical assessment was followed by an identification possibilities for application of the assessment methods as a significant tool for improvement of the protected area management. This two-scaled approach opened perspectives for inclusion of the concept in the national spatial planning documents. Additionally, these results will serve as a model for implementation of ecosystem services concept in other local initiatives in the country, especially in cases of protected areas.

Keywords: ecosystem services assessment, national and local scale, implementation, North Macedonia

4. Type of submission: Abstract

[T. Thematic Working Group sessions: T4d – Developing and advancing national MAES processes: a path from mapping to implementation](#)



Ecosystem services approach facilitating sustainable development of rural areas in Slovakia

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Ecosystem services (ES) approach has gradually become one of the main concepts linking science, policy and landscape management. The ES research could contribute to the wise decision-making processes in rural areas, which is presented by our research. Our research is based on 1) the assessment of the landscape capacity to provide ES at the national level, 2) the spatial delineation of the rural landscape in Slovakia and 3) the evaluation of selected social and economic indicators towards ES delivery. The principal motivation is the belief that sustainable landscape management should not only follow the natural conditions (landscape productivity, ecological value, resilience, quality of environment) but should also contribute to improving the quality of life of local people. The first aspect is expressed in our case by the landscape's potential to provide ES, i.e. key provisioning, regulating, supporting and cultural ES for the main landscape types. The quality-of-life aspect is mirrored mainly by social and economic indicators, e.g. demography, employment, social infrastructure, economic performance. Our study compares the rural landscape's preconditions for the ES provision with the current socio-economic status at the spatial scale of NUTS4 (LAU1). As a result, we determined the areas of "hotspots" and "coldspots". The first show the balance between the environmental and socio-economic aspects, the latter identify unused natural capital potential for rural development or the inconsistency between nature and society. Furthermore, we matched the above-mentioned findings to implementation of rural policy instruments and decision-making across spatial scales. Finally, we were able to find out the opportunities for sustainable rural development in Slovakia, primarily focused on ES-based agricultural management and soft tourism.

Keywords: ES mapping, ES implementation, sustainable landscape management, agriculture, rural landscape

5. Type of submission: Abstract



T. Thematic Working Group sessions: T4d – Developing and advancing national MAES processes: a path from mapping to implementation

Mapping Ecosystem Services Multifunctionality: the Italian case

First author: Angela Pilogallo

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Mapping ecosystem services multifunctionality can be intended as a relevant information layer to tackle future challenges in territorial planning and to support policy design and decision-making. Urban and territorial transformations implies impacts on natural capital and, consequently, on human wellbeing so the effort in providing a synthetic indicator to analyze effects and trade-off (ex-ante, on-going or ex-post) may be adopted as an affective driver to improve the governance model. This research contributes to investigate suitable integrated indexes able to mainstream ecosystem services approach in urban and territorial planning. In facts, from the planning perspective, it is indeed requested an effective set of integrated indexes responsive to local land use changes and spatial transformations, capable of representing their effects at the more appropriate scale. This work aims to contribute to the spatial knowledge building by mapping at the Italian national scale the ecosystem services multifunctionality by the Multiple Ecosystem Services Landscape Index (MESLI). This indicator, based on the proximity-to-target methodology, has been chosen as it is jointly relevant for both the number of services and the intensity with which they are supplied. The results obtained show potential effective contribution in reinforcing the evaluation of planning processes, from the monitoring of impacts resulting from different development and transformation scenarios to the support in a cross-cutting governance processes dealing multiple levels of planning and different sector policies. It goes in the direction of improving the capacity of planners and decision makers to measure territorial transformations and consequent impacts on natural capital according to planning objectives.

Keywords: ES multifunctionality, ES integrative index, mapping ES, ES in decision-making, MESLI



6. Type of submission: Abstract

T. Thematic Working Group sessions: T4d – Developing and advancing national MAES processes: a path from mapping to implementation

PlanWise4Blue: Online tool to assess cumulative impacts of human pressures on ecosystem services

First author: Jonne Kotta

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Intensification and diversification of human-induced pressures in marine ecosystems have raised concerns over several sustainability-diminishing consequences. Successful management, restoration and conservation of intensively used coastal ecosystems demands knowledge of the response of ecosystem services to the increasing pressure of the combined effects of multiple stressors. The existing tools for spatially-explicit environmental impact analyses are still limited to a simplified pressure-response system. This limitation renders the guidance of ecosystem-based allocation of human activities at sea highly biased, thereby undermining any assurance that societal environmental and socio-economic sustainability objectives will be achieved. Here, we present the PlanWise4Blue tool (PW4B), which assesses the cumulative effects of multiple pressures on ecosystem services. The developed methodology combines existing scientific evidence with expert judgement which is then communicated through a dynamic online tool to environmental managers. The PW4B tool presented here is a free-to-use resource, available online for use by marine managers and/or policymakers without scientific backgrounds and based on the best available scientific data. Most importantly, the PW4B tool is capable of quantifying both single and synergistic effects of most important human activities on a broad range of ecosystem services. PW4B was used in the process of Estonian Maritime Spatial Planning to inform managers of the environmental sustainability of planning solutions.

Keywords: ecosystems, CEA, spatial modelling, sustainable development, integrated assessment



7. Type of submission: Abstract

T. Thematic Working Group sessions: T4d – Developing and advancing national MAES processes: a path from mapping to implementation

Tailoring ecosystem services assessment to stakeholder needs in the framework of consultations with key actors in Natura 2000 sites in the Czech Republic

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Stakeholder participation has been considered an increasingly important element of ecosystem services assessment on various levels (national, regional, local). In this contribution, we present a comprehensive approach of consultations with stakeholders on the national level which we apply in the Integrated project LIFE for the Natura 2000 network in the Czech Republic “One Nature”. Designed to support the national MAES process, consultations aim at prospective development of a well-functioning science-policy interface for ecosystem services research and its implementation. The main goals of our research are to: a) advance the implementation of the ecosystem services concept and related research results into Czech decision-making; b) systematically integrate Czech stakeholders in ecosystem services research; c) facilitate the establishment of the National Ecosystem Services Platform in the Czech Republic, which will provide a unique environment to continuously work on building the science-policy interface concerning ecosystem services in the future. We employ a stakeholder engagement framework based on systematic stakeholder analysis and participative methods. Systematic stakeholder analysis enabled analytical stakeholder identification and their prioritization for integration into research – we focus on stakeholders who have the potential to implement the research results and/or who significantly affect the ecosystem services provision or flow in Natura 2000 sites. The set of participative methods (semi-structured interviews and participatory workshops) applied in the next step helps us to iteratively translate the state-of-the-art knowledge to stakeholders, to facilitate knowledge co-production and also to support social learning among participating



stakeholders (including researchers). Preliminary findings from this ongoing research suggest that comprehensive and iterative stakeholder consultations on national level are a vital precondition for co-production of knowledge, but also for co-creation of better-informed expectations and prospective needs concerning ecosystem services research and its implementation.

Keywords: ecosystem services, Natura 2000, science-policy interface, stakeholder participation