BOOK OF ABSTRACTS

This Book of Abstracts provides a comprehensive overview of the session content and is structured into three main sections:

I. Session Description – an introduction to each session, including its objectives and expected outputs
II. Session Program – a detailed schedule for each session, including speakers and timing
III. List of Abstracts – a complete compilation of all accepted abstracts

I. SESSION DESCRIPTION

ID: T7b

Making Nature Count – AdvanCements, Challenges and ApplicatiOns of Monetary valUatioN sTudies (COUNT)

Hosts:

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Abstract:

To improve our economic and social systems, it is essential to integrate and mainstream nature into various forms of private and public decision-making. The valuation of ecosystem services in general, and the monetary valuation of ecosystem services in particular, is playing an increasingly important role in the

integration of nature into private and public decision-making. Monetary valuation is institutionalized in official UN frameworks (e.g. SEEA-EA framework) and is being addressed in influential private sector initiatives (e.g. Taskforce on Nature-related Financial Disclosures; TNFD). Monetary valuation has the potential to contribute to many of the targets of the Global Biodiversity Framework (GBF). Hence, despite clear momentum, discussion on the science-policy interface and alignment between the public and private sectors are evident.

However, many questions regarding the transformative nature of monetary valuation and how to implement it effectively still remain. How does monetary valuation influence private and public sector decision-making? Which methodological advancements support more precise valuation estimates? To what extent are stakeholders involved in monetary valuation? How does mapping support economic valuation and vice versa?

Given these opportunities and challenges, it is important to critically explore methodological considerations, assess advances and discuss applications of monetary valuation – particularly in relation to their potential role to inform nature positive policy, to underpin natural capital accounting, and to facilitate transformative change towards sustainable natural resources management. At the same time, a significant gap remains between scientific knowledge and its practical application. Organizations increasingly require simple, transparent methods to make ecosystem services measurable and financially quantifiable, enabling certificate trading and investments in natural capital – effectively bridging ecology and economy.

Across this session we will discuss recent considerations, advances and applications of monetary valuation for the integration of nature in private and public policy. These may be examples of practical use cases for (the mapping of) monetary valuation in private or public policy, methodological advances and practical innovations in valuation methodologies and/or critical contributions and thoughts on the mainstreaming and institutionalization of monetary valuation in public and private policy. Through our collaborative dialogue, we aim to collectively outline a set of effective implementation strategies that are adaptable to various real-world scenarios.

Goals and objectives of the session:

- To give insight into the methodological advancements and future developments of monetary valuation studies using innovative approaches to valuation.
- To demonstrate the applications of monetary valuation data in public and private decision-making supporting policy development, guiding business and financial mechanisms, and investment decisions and developing societal support.
- To debate how to incorporate monetary valuation and the outcomes of valuation studies to foster fairer and more people and nature-positive decisions.
- To bridge scientific theory and practical needs in the field of ecosystem services.
- To present and discuss simple, transparent methods for data collection and processing as a foundation for valuing and accounting ES in practical contexts.
- To foster dialogue between scientists and practitioners to translate complex, theoretical ES knowledge into effective, user-friendly, and cost-efficient tools using proxies.

Planned output / Deliverables:

Discussion paper on the advancements, challenges and applications of monetary valuation in private and public decision-making.

Related to ESP Working Group:

TWG 7 - Economic & Monetary valuation

II. SESSION PROGRAM

Room: C1
Date of session: Tuesday 19, May 2026
Time of session: 14:00 – 15:30

Timetable speakers:

Time	First name	Surname	Organization	Title of presentation
14:00-14:05	Victoria	Guisado Goni	Foundation for Sustainable Development	Introduction
14:05–14:14	Ernesto	Lopez-Morales	The Land Appraisers Association of Chile	Scale Sensitivity in Monetary Valuation of Ecosystem Services: Evidence from a Large Hedonic Land Market in Northern Patagonia, Chile
14:14–14:23	Anda	Mežgaile	Vidzeme University of Applied Sciences	A multidimensional economic valuation of cultural ecosystem services in biosphere reserves
14:23–14:32	Halvard	Dahle Laegreid	Norwegian university of life sciences NMBU	Relationship learning from nature accounting: Exploring Arenas and data for social learning and local decision making.
14:32–14:42	Vito / Luke	Frontuto / Brander	University of Turin /Brander Environmental Economics	Q&A Block 1
14:42–14:51	Mattias	Gaglio	University of Ferrara	Assessing Cultural Ecosystem Services in Mountain Highlands: Linking Potential Supply, Actual Use and Pressures.
14:51–15:00	Piotr	Krajewski	Wrocław University of Environmental and Life Sciences.	Mapping Landscape Services and Societal Preferences for Development Priorities Using Discrete Choice Experiments.
15:00–15:09	Hannes	Bürckmann	Neulandplus	Translating Ecosystem Services into practice
15:09–15:18	Vince	van 't Hoff	Foundation for Sustainable Development	The Current Returns - The Social Benefit-Cost Ratio of Plastic Interception in Rivers
15:18–15:28	Carlotta / Luiz / Peter	Quagliolo / Magalhães-Filh / Roebeling	University of Aveiro	Q&A Block 2
15:28–15:30	Hosts		Foundation for Sustainable Development	Wrap-up & Closing Remarks

III. LIST OF ABSTRACTS

The first author is the presenting author unless indicated otherwise

1. Scale Sensitivity in Monetary Valuation of Ecosystem Services: Evidence from a Large Hedonic Land Market in Northern Patagonia, Chile

First author: Ernesto Lopez-Morales
Other author(s): Luis, Inostroza, Nicolás Herrera, Ana Araos, Vicente Mosso
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Most valuations of ecosystem services (ES) rely on hedonic pricing to see which ecological functions influence land prices. But they assume a single spatial scale, rarely tested, despite evidence that different ecosystem services operate and are observable at various ecological and spatial scales. This paper advances monetary ES valuation by explicitly treating scale as a core spatial design and identification parameter in hedonic analysis. A scale-sensitive hedonic framework applied to a large and weakly regulated rural land market in Northern Patagonia, Chile, allows price signals to reflect market perceptions of environmental attributes with relatively low institutional interference. Using more than 81,000 vacant rural land transactions combined with expert-based assessments of 21 regulating and 11 cultural ecosystem services, we estimate spatially explicit hedonic models under two ecologically grounded distance thresholds representing plot-scale (100 m) and landscape-scale (1,201 m) influence.
Across eight robustness specifications, we compare coefficient sign, magnitude, and stability across scales and classify ecosystem services into scale-dependent valuation trajectories. Results show that monetary valuation outcomes are highly sensitive to spatial scale and the choice of distance-based valuation design. For example, services associated with direct use or nuisance reduction display robust capitalization at both scales, while several regulating and culturally significant services shift in sign or significance when moving from local to landscape-level measurement. A substantial subset of services remains statistically unpriced at all scales.
These findings demonstrate that single-scale hedonic valuations can systematically misrepresent ecosystem services by overstating disservices or obscuring benefits that emerge only at broader ecological grains. Incorporating explicit spatial scale sensitivity into monetary valuation improves the interpretability and comparability of spatial valuation outcomes. It clarifies how spatial design choices condition the use of valuation results in land-use and environmental decision-making.

Keywords: Hedonic pricing, Monetary valuation, Ecosystem services, Spatial scale, Land markets

2. A multidimensional economic valuation of cultural ecosystem services in biosphere reserves

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Biosphere reserves are multifunctional and complex socio-ecological systems in which the objectives of nature conservation, local economic development, research, and human well-being are interconnected. In this context, cultural ecosystem services play a crucial role in enabling local communities to improve their livelihoods while protecting and nurturing resources and traditions. However, their economic value remains insufficiently understood and weakly integrated into decision-making at different levels, such as local, regional, and national. Predominantly due to their challenging intangible and non-material nature, especially the rarely studied cultural ecosystem services sub-categories, such as place identity, inspiration, and experiential and aesthetic values, which are difficult to value using conventional economic valuation approaches. This study directly examines how to assess the economic value of these less-researched sub-categories

This research proposes a multidimensional framework to address the difficulties of economic valuing cultural ecosystem services in biosphere reserves. The aim is to accurately capture the various economic contributions these services provide for locals and customers. The multidimensional framework integrates market-based valuation methods, such as hedonic pricing, with non-market approaches derived from

stated-preference surveys and evaluations of place identity, inspiration, and experiential cultural ecosystem services. The multidimensional approach is empirically tested in a biosphere reserve designated under the UNESCO MAB programme, using the North Vidzeme Biosphere Reserve in Latvia as a case study.

The results indicate that cultural ecosystem services—such as landscape aesthetics, place identity, and inspiration—play a significant role in enhancing local well-being and economic activity, including entrepreneurship. In 2024, a survey found that people choose to travel to attractive landscapes and unspoiled nature, as well as purchasing products and services from local entrepreneurs, while paying attention to whether service providers take a responsible approach to preserving natural and cultural values. However, their value cannot be fully assessed using a single valuation method. While hedonic pricing methods offer some market signals regarding aesthetic values, non-market and perception-based approaches provide further insights into social and economic benefits that might not be captured in market data. Economic valuation in a biosphere reserve is more complex from a data-collection perspective, as it covers several administrative territories in this case study.

This study highlights the importance of multidimensional economic valuation to improve the integration of cultural ecosystem services in spatial development planning and integrated management in biosphere reserves. By demonstrating how different economic valuation methods can be combined, research supports the development of a less-studied economic valuation methodological framework for cultural ecosystem services in special protected and multidimensional landscapes, thereby enabling more informed, reliable decision-making.

Keywords: cultural ecosystem services, economic valuation, biosphere reserve, multidimensional framework

Keywords: biodiversity, true cost accounting, ecosystem service monetisation, total economic value

3. Relationship learning from nature accounting: Exploring Arenas and data for social learning and local decition making

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Norwegian municipalities are in the early stages of implementing ecosystem and land-use accounting as part of local planning processes. While national expectations for nature-positive transitions are rising, the practical and institutional frameworks for operationalizing ecosystem service knowledge at the municipal level are still emerging. This creates an important opportunity to examine not only what knowledge about nature is communicated to local elected officials, but how this knowledge is mediated, interpreted, and embedded into decision-making.
Political workshops have become a key arena where ecosystem accounts and related datasets are translated into actionable insights for local land-use policy. These dialog-based formats coexist with more formal mechanisms—such as public hearings, technical briefings, and structured consultations—each shaping learning dynamics, inclusivity, and legitimacy in different ways. The project addresses a persistent challenge: local politicians often face an overwhelming volume of fragmented information, which can result in case-by-case decisions rather than strategic, systemic approaches to sustainable land management.
The central research question is whether the form through which new knowledge—such as ecosystem accounts and complementary indicators like the Norwegian Land Use Intensity Index—is presented can strengthen political learning, ownership, and procedural justice. It also explores the extent to which the character of the knowledge itself (e.g., visualizations, maps, classifications, participatory interpretations) influences political judgement and the uptake of sustainability-oriented solutions.
Methodologically, the project is designed as a comparative case study involving document analysis, observation of political workshops, qualitative interviews with planners and decision-makers, and, potentially, a survey. The contribution to the session is to demonstrate how relational and dialogical practices surrounding ecosystem accounting can enhance municipalities' capacity for human–nature

partnership, and to identify the institutional conditions that enable participatory, knowledge-informed, and equitable governance of biodiversity and ecosystem services.

Keywords: ecosystem accounting, biodiversity land use planning processes, deliberative dialogue, sustainability, legitimacy

4. Assessing Cultural Ecosystem Services in Mountain Highlands: Linking Potential Supply, Actual Use and Pressures

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Mountain highlands host a wide range of cultural ecosystem services (CES) that contribute to human well-being while being increasingly exposed to recreational use and associated pressures. Understanding the relationship between the potential supply of CES, their actual use and resulting impacts remains challenging, particularly in heterogeneous mountain landscapes. This study proposes an integrated framework to assess CES by jointly analysing natural assets, human use and pressures.
The potential supply and demand of CES were mapped using survey-based stated and revealed preferences, including visitation frequency, travel cost, and willingness-to-pay (WTP). Actual CES use and associated pressures were characterized using social media data to identify spatial and temporal activity patterns, stakeholder consultations to capture awareness-based pressure and risk scores, and tourism infrastructure data as proxies for user intensity.
Results reveal spatial patterns of CES supply and actual use, with some ecosystems experiencing disproportionately high recreational pressure relative to their perceived cultural value. Social media and infrastructure data effectively identified use hotspots, while stakeholder input provided context for interpreting vulnerability and risk.
Our integrated approach highlights priority areas for management actions aimed at mitigating pressures while maintaining cultural benefits. This framework offers a replicable method for integrating cultural ecosystem services into ecosystem accounting and planning processes in mountain regions.

Keywords: Cultural ecosystem services, Mountain landscapes, Recreational use, Social media analysis, Stated and revealed preferences

5. Mapping Landscape Services and Societal Preferences for Development Priorities Using Discrete Choice Experiments

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The research focuses on the identification, spatial differentiation and prioritisation of landscape services (LS), understood as the contributions of landscapes—resulting from the configuration of natural and anthropogenic elements—to human well-being through everyday practices, perception and use. This understanding emphasises human–landscape interactions as a key foundation for defining socially relevant development priorities in spatial planning. An integrated methodological framework was applied, combining participatory mapping with a discrete choice experiment (DCE).
In the first stage, residents mapped specific landscape units where they perform activities corresponding to six LS categories: daily activities, aesthetic experience, physical and mental health improvement, outdoor entertainment, personal growth and fulfilment, and social growth and fulfilment. Participatory mapping proved essential for capturing real
spatial patterns of landscape use and identifying landscape types that are genuinely important in residents' everyday lives. In the second stage, a discrete choice experiment was used to elicit societal preferences and willingness to pay for changes in the provision of landscape services.
The results reveal clear differences in preferences across settlement contexts and landscape types.

Forest landscapes emerged as highly multifunctional, particularly valued for health-related, recreational and aesthetic services, while rural mosaic landscapes also showed high importance due to their accessibility and proximity to residents' homes. Urban and suburban landscapes were primarily associated with daily activities and social functions. By integrating participatory mapping with DCE, the study enabled residents to prioritise alternative development scenarios and trade-offs, strengthening the societal relevance of valuation outcomes. The research was conducted in the Lower Silesia region in southwestern Poland and covered six municipalities representing urban, rural and urban–rural contexts characterised by a wide diversity of landscape types.
Overall, the results demonstrate that participatory mapping significantly enhances the interpretability and policy relevance of preference-based valuation, providing robust support for evidence-based and socially grounded landscape planning.

Keywords: landscape services; participatory mapping; discrete choice experiment; public participation; cultural ecosystem services

6. Farmer Preferences and Willingness to Pay for Agroecological Practices in Kenyan Drylands: A Discrete Choice Experiment

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Understanding farmer preferences and willingness to pay (WTP) for nature-based and climate-smart agricultural practices is critical for designing effective and equitable adaptation policies in Africa's drylands. This study applies a discrete choice experiment (DCE) with 5,652 choice observations from smallholder households in Laikipia County, a semi-arid landscape in Kenya, to quantify the economic value farmers assign to key agroecological interventions. Respondents evaluated alternative land-management packages characterized by agroforestry, water conservation, crop diversification, tillage method, nutrient input type, and programme cost.

A multinomial logit model revealed strong and statistically significant preferences for agroforestry ($\beta = 0.48$, $p < 0.001$), water conservation ($\beta = 0.26$, $p < 0.001$), and organic nutrient inputs ($\beta = 0.27$, $p < 0.001$). The cost attribute carried a negative and significant sign ($\beta = -0.00013$, $p = 0.013$), confirming price sensitivity. Using the cost parameter to derive marginal WTP, farmers valued agroforestry at roughly four times the monetary equivalent of other practices, amounting to approximately KSh 3,700 (≈USD 30) in relative terms.

The results demonstrate clear farmer demand for ecosystem-enhancing practices that improve soil, water and vegetation services in dryland farming systems. When integrated into benefit–cost analysis, these preferences produce benefit–cost ratios above 3:1 when interventions are delivered through county agricultural extension systems. Complementary qualitative insights highlight gender-differentiated priorities, with women favouring lower-cost, labour-saving practices such as water harvesting and mixed cropping due to household care responsibilities and time constraints.

Overall, the analysis provides robust empirical evidence that investing in community-driven agroecological practices is not only environmentally sustainable but also economically efficient and socially inclusive. The findings offer direct implications for scaling nature-based solutions, designing farmer-centred incentive schemes, and advancing nature-positive and climate-adaptive land-use policies in Eastern Africa's drylands.

Keywords: Agroecology, Discrete choice experiment, Ecosystem services valuation, Climate-smart agriculture, Dryland farming systems