



BOOK OF ABSTRACT

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I. **SESSION DESCRIPTION**

ID: T6b

Times are changing: temporal mapping of dynamic ecosystem services

	Title	Name	Organisation	E-mail
Host:		Klara J. Winkler	Department of Natural Resource Sciences, McGill University	Klara.winkler@mcgill.ca
		Shamik Chakraborty	Department of Sustainability Studies, Hosei University	Shamik.chakraborty.76@hosei.ac.jp
Co-host(s):		Robert Blasiak	Stockholm Resilience Center, Stockholm University	Robert.blasiak@su.se
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		Mario Torralba	Social-Ecological Interactions in Agricultural Systems Research, University of Kassel	Mario.torralba@uni-kassel.de
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Abstract:

Both land- and seascapes are recognized as coupled social-ecological systems consisting of highly interlinked social and ecological elements. For example, perennial agricultural systems (including agroforestry) intensely shape the appearance of whole landscapes. Coastal seascapes on the other hand, occupy 20 percent of the earth's surface, but the livelihoods of 45 percent of the global population depend on them. Many perennial landscapes and coastal seascapes are unique as they have contributed to centuries-old local identities and cultures



while simultaneously supplying multiple ecosystem services such as crops or fish for consumption as well as numerous regulating services. All of these have manifold contributions to human wellbeing. These identities and cultures are the origin of relational values people hold for these kinds of land- and seascapes. An understanding of these values, which extend beyond ecological and economic values, is of great relevance in order to adequately design tools and policies that allow perennial and coastal systems to thrive in the future.

In this session, we want to explore the special character of land- and seascapes guided by the following questions:

- What are elements and social-ecological conditions that generate multiple values in land- and seascape?
- What tools can be useful for understanding multiple values of land- and seascapes?
- How can changes in values drive change in land- and seascapes, including change in indigenous and local ecological knowledge?
- Which overarching values connect diverse ecosystems?
- What is the role of specific cultivars and species as an expression of values and promoters of local identity?
- Which values contribute to fostering stewardship?
- What is the the role of organizations and institutions in sustaining multiple values, fostering stewardship, and connecting actors?

Goals and objectives of the session:

In the session, we aim to identify, together with the participants of the session, differences and commonalities of values in land- and seascapes. Drawing on this shared understanding, we will move from local case studies to more generalizable insights on multiple values in land- and seascapes we can identify. We will use this as a basis to draw lessons from these insights for shaping policies and further tools.

Planned output / Deliverables:

We hope for three outcomes: 1) a lively and inspiring session that can motivate participants to contribute to a synthesis article on perennial landscapes and their impact on values associated with a landscape; 2) launching a special issue in the journal *Ecosystem Services* on "Multiple Values for the Management and Sustainable Use of Coastal and Marine Ecosystem Services"; and 3) starting a conversation between research on multiple values in different ecosystems (land and marine).

Related to ESP Working Group/National Network:



Thematic working group: TWG 6 – Integrated valuation of ES

II. SESSION PROGRAM

Date of session: Thursday, 24 October 2019

Time of session: 10:30 – 12:00

Timetable speakers

Time	First name	Surname	Organization	Title of presentation
10:30-10:35	Klara	Winkler	McGill University	Welcome & introduction into session
10:35-10:43	Alexander	Rincón-Ruiz	Universidad Nacional de Colombia	Advances and Challenges of integrated valuation of ecosystem services in Latin America
10:43-10:51	Thomas	Schmitt	University of Bayreuth	The multiple values of (sub-)alpine grassland ecosystem services: a 'valuescape' to investigate land-use decisions
10:51-10:59	Kuang-Chung	Lee	National Dong Hwa University	An integrated landscape approach to reconciling multi-stakeholders' values and enhancing synergies: a case study in Taiwan
10:59-11:07	Kristina	Veidemane	Baltic Environmental Forum – Latvia	Socio-cultural valuation of land- and seascapes for embedding local stakeholder interests in maritime and coastal spatial planning
11:07-11:14	Shamik	Chakraborty	Hosei University	Community values and traditional knowledge for coastal ecosystem services management in the "satoumi" seascape of Himeshima island, Japan
11:14-12:00	Shamik Mario Klara	Chakraborty Torralba Winkler	Hosei University University of Kassel McGill University	Group discussion



III. ABSTRACTS

The abstracts appear in alphabetic order based on the last name of the first author. The first author is the presenting author unless indicated otherwise.

1. Type of submission: **Abstract**

T. Thematic Working Group sessions: T6b Multiple values in land- and seascapes

Community values and traditional knowledge for coastal ecosystem services management in the “satoumi” seascape of Himeshima island, Japan

First author: Shamik Chakraborty

Other author(s): Alexandros Gasparatos

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This paper combines primary and secondary data to highlight the history of resource use and ongoing change in a coastal social–ecological system (SES) in Japan. We focus on Himeshima island, whose local community both depends on coastal ecosystem services and has developed over generations resource management practices informed by a rich body of traditional and local knowledge (TLK). By engaging with local resource users through focus group discussions (FGDs), household surveys and expert interviews we identify 14 ecosystem services that contribute manifold to the wellbeing of the local community. While provisioning services are key for the livelihoods of most community members, some of the cultural services related to the traditional food culture and food–sharing practices are a source of pride and cohesion for the local community. However, respondents indicated that several key provisioning and cultural ecosystem services have degraded over time through the combined effects of habitat change/loss and overexploitation. Underlying drivers include demographic, economic and technological change that has eroded TLK practices associated with fisheries management. New economic activities based on shrimp mariculture and tourism seek to revitalize Himeshima, but eventually create important ecosystem services trade–offs that could affect substantially the local community.

Keywords: Traditional and local knowledge (TLK), Cultural ecosystem services, Social–ecological systems, Fisheries



2. *Type of submission: Abstract*

T. Thematic Working Group sessions: T6b Multiple values in land- and seascapes

Multiple values for management and sustainable use of coastal and marine ecosystem services

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The special issue "Multiple values for management and sustainable use of coastal and marine ecosystem services" is an outcome of research with an 'inclusive' approach to assessing coastal and marine ecosystem services; one that is informed by an appreciation of the different values and attachments to coastal/marine social-ecological systems (SES). The special issue comes in response to the existing ecosystem services literature, which has variously suggested that capturing, synthesizing, and communicating diverse values related to ecosystem services is a matter of utmost importance for the effective management of coastal and marine ecosystems and increasing their long-term sustainability and resilience. The special issue captures case study based and review based papers. The case studies cover countries in Central and South America (Jamaica, Brazil), Africa (Kenya, Mozambique), Asia (Japan), Oceania (Papua New Guinea, Australia), and Europe (UK, Portugal) while dealing with multiple ecosystem services and its contact points to the coastal SES. The case studies cover diverse ecosystems from mangroves, coral reefs, mudflats, seagrass beds, islands, to micro features such as coastal dunes, salt marshes, alluvial flats, and homegardens. The case studies apply diversity and combination of methods to reveal multiple ecosystem services from the coastal environments. These methods include use of photographs, filming, participatory mapping, use of PPGIS, AHP, choice experiments, collaborative scoping, and application of specialized ES valuation software such as InVEST, together with conventional ways of data gathering such as interviews, surveys, and focus group discussions. These methods (i.e., their diversity and combinations) open new opportunities to combine diverse methodologies to bring multiple ES valuation in coastal and marine systems into focus. The conceptualization and operationalization of multiple ecosystem services by the interaction of local societies and experts (researchers) used in this special issue makes an important contribution towards understanding diverse ecosystem service values as stressed by IPBES and other relevant literature in the field of ecosystem service science.



Keywords: Ecosystem services, multiple values, journal special issue

3. *Type of submission:* **Abstract**

T. *Thematic Working Group sessions:* T6b Multiple values in land- and seascapes

An integrated landscape approach to reconciling multi-stakeholders' values and enhancing synergies: a case study in Taiwan

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The case study analyzes collaborative planning and management processes of the 'Forest-River-Village-Sea Ecoagriculture Initiative' from 2016 to 2018 in coastal Xinshe village, Taiwan. Two indigenous ethnic groups and their farmlands are located in the same watershed surrounded by forests and seas. In the past, various governmental sectors with diverse value priorities worked separately with either one of the settlements. Resources conflicts over water usage, hunting and fishing rights happened from time to time between the tribes. An integrated multi-stakeholder landscape approach was adopted by the Initiative to reconcile inconsistent goals and enhance synergies. To analyze the processes and outcomes of the Initiative, three landscape objectives of ecoagriculture and three types of multiple values of nature addressed by IPBES's Conceptual Framework were employed and integrated to examine stakeholders' value priorities. ODA's method of 'stakeholder analysis' and Healey's theory of collaborative planning were adopted for analyzing stakeholder engagement and the institutional capacity-building among them. The findings show that focused on various value priorities (intrinsic, instrumental or relational values of nature) as well as different landscape objectives of ecoagriculture (biodiversity conservation, agricultural production or viable local livelihoods), the multi-stakeholder platform of the Initiative helped to enhance the dialogue between the "expert knowledge" and the "local knowledge" as well as contributed to the mutual trust and synergy between the stakeholders' value priorities and landscape objectives. There appeared to be an observable change in the perception of multiple values of nature and of landscape objectives pursued by each of the stakeholders. Each of the involved governmental agencies (supportive institutions) continued to have their own goal to work on, based on their job division and primary responsibilities, and both communities prioritized community development and livelihoods above other goals. What changed, however, was the appreciation and understanding of the other goals as equally important for the overall revitalization of



Xinshe's landscape and seascape. All of the stakeholders recognized that only participation and cooperation among them can ensure stability in ecological, social and economic dimensions, as well as help society live in harmony with nature.

Keywords: IPBES conceptual framework; Interest and value; collaborative planning; multi-stakeholder platform; synergy

4. *Type of submission: Abstract*

[T. Thematic Working Group sessions: T6b Multiple values in land- and seascapes](#)

Advances and Challenges of integrated valuation of ecosystem services in Latin America

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Recently, in the ecosystem services (ES) field great progress has been made towards the integrated valuation of ecosystem services (IVES). IVES promote the inclusion of diverse worldviews on human-nature relationships through context-specific, transdisciplinary and inclusive valuation processes. Latin America emerges as a region where researchers have started to applied IVES approaches in socio-ecological contexts characterized by a high biocultural diversity but also by conflictive territorialities due to high poverty levels, social exclusion and extractivism economies. However, the progress of the region in the development IVES, are unknown. This research aims to identify progress and challenges of IVES in the Latin American context. We explore 21 case studies and consulted 30 Latin American ES researchers, in order to evaluate i) the context and scope of IVES; ii) the use of transdisciplinary research approaches; iii) methodological approaches used in valuation processes; iv) how multiple values have been integrated; v) communication and influence on decision making; and vi) the main principles and challenges that IVES must address in the context of Latin America. Our study empirically shows how, in in Latin American socio-ecological context, new paths are being opened to include the complex, conflictive and heterogeneous visions on the importance of nature



Keywords: Ecosystem services, integrated valuation, plural valuation, transdisciplinarity, Latin America

5. *Type of submission: Abstract*

T. Thematic Working Group sessions: T6b Multiple values in land- and seascapes

The multiple values of (sub-)alpine grassland ecosystem services: a 'valuescape' to investigate land-use decisions

First author: Thomas Schmitt

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The agricultural management of grasslands is strongly linked to fodder production and cattle farming, but also provides other valuable ecosystem services such as carbon sequestration, nutrient regulation, and recreation. Purely economic driven decisions of farmers can lead to negative impacts on such services and underlying ecological processes. Concerning (sub-)alpine grasslands, projected above-average impacts of climate change places additional pressure on land use and ecosystem services. In order to further analyze the decision-making processes of farmers under climate change and to determine the relevance of grasslands in the area, the goal of the study is to gain a better understanding of the values that are associated with grassland ecosystem services by the various stakeholders involved. In order to identify the multiple values of different stakeholder groups, we conducted surveys and participatory mapping with farmers, citizens, and tourists. We also calculated the field-specific gross margins for two watersheds in Bavaria, Germany to compare these socio-cultural values with economic benefits for farmers. The results partly reveal consensus concerning the values of the different stakeholders, but also show strong differences between ecosystem services. The resulting valuescape unfolds spatially-explicit hotspots and coldspots of perceived grassland ecosystem services. As these outcomes provide valuable insights concerning the relevance of values for management decisions, the results will be integrated into an agent-based model of farmers' decision-making for grassland management.

Keywords: valuation, decision-making, grassland management, (sub-)alpine ecosystem services



6. *Type of submission: Abstract*

T. Thematic Working Group sessions: T6b Multiple values in land- and seascapes

Socio-cultural valuation of land- and seascapes for embedding local stakeholder interests in maritime and coastal spatial planning

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Different societal groups view landscapes and ecosystems including marine and coastal systems in terms of their own economic, cultural and society needs. The needs are based on geographic conditions and societal characteristics that are place-specific patterns. Coastal areas form the spatial domain where the terrestrial and marine environment interact and create unique land- and seascapes. Therefore, planners that organise maritime and coastal spatial planning process need to carry out strong participation process to ensure that interests of local stakeholders are recognised.

The study was implemented in a regional scale of Latvia, eastern coast of the Baltic Sea. Main aim was to map and assess multiple values of coastal land- and seascapes by applying ecosystem services approach. Appropriate assessment unit shall be defined when cultural services are valued. Spatial assessment units were created based on ecosystems types, considering also habitats and other characteristics of the Baltic coastal and marine areas. The delineated spatial units were used to link ecological parameters with social values.

Socio-cultural valuation uses multiple methods to observe, consult or to engage with stakeholders in order to assess their preferences and values. The preference assessment method is applied to assess which marine and coastal landscapes and ecosystems and ecosystem services make the greatest contribution to the wellbeing at the local and regional level in the study area. By implementing collective preference technique, local and regional stakeholders debated and assigned values of the land- and seascapes and the ecosystem services in the study area. Additionally, participatory GIS was used to collect local knowledge on spatial distribution and significance of the ecosystem services.



Results of the study shall support marine and coastal planners and decision makers in assessing the development potentials and trade-offs in coastal areas.

The study was supported by the Interreg Baltic Sea Region Programme project “Land-Sea-act” (#R098).

Keywords: socio-cultural valuation, participatory approach, maritime and coastal policies, Latvia, Baltic Sea