# 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: S9c

### Plural socio-ecological trajectories: dialogues on ecosystem services for nature and people

**Hosts:**

| | Name | Organisation | E-mail |
|---|---|---|---|
| **Host (s):** | Connie Paola Lopez Gomez | Assistant professor, National University of Colombia | cplopezg@unal.edu.co |
| **Co-host(s):** | Clara I- Villegas Palacio<br><br>Stefan Sorge | Full-time professor, National University of Colombia<br><br>University of Freiburg, Germany | civilleg@unal.edu.co<br><br>stefansorge@posteo.de |


**Abstract:**
We invite contributions that advance transdisciplinary understandings of socio-ecological trajectories and ecosystem services/NCP across different geographies. We welcome empirical studies (plural valuation, co-production, multi-criteria modeling), and reflexive analyses that confront justice, rights, and territorial autonomies. Submissions should specify what travels and what does not across contexts, and articulate implications for inclusive, multi-level governance and Global North/South relations. We especially encourage collaborations with community-based and policy/practice partners. Selected contributions will inform a synthesis brief and a joint publication agenda.

Foregrounding cross-regional perspectives and diálogos de saberes (dialogues across ways of knowing), the session is expected to integrate empirical cases from different geographies and with a theoretical bridge on socio-ecological flows. Together, we hope these contributions mobilise plural valuation (intrinsic, relational, instrumental), co-production of knowledge, and modeling to navigate trade-offs, uncertainties, and cross-scale feedbacks while resisting emergent forms of "green extractivism.

The session aims to: (1) critically assess the promises and limits of ES/NCP frameworks through relational, justice-oriented approaches; (2) articulate ethically grounded, policy-relevant transdisciplinary methods (co-production, plural valuation, multi-criteria modeling); (3) derive transferable principles for inclusive, multi-level governance attentive to rights, territorial autonomies in Europe and other geographies; and (4) co-design an EU–LATAM and other geographies collaboration agenda for comparative research, shared datasets, and joint publications.


**Goals and objectives of the session:**

a. Build a shared conceptual frame to compare governance, valuation, and modelling approaches across different geographies.
b. Articulate transdisciplinary methods (co-production, plural valuation, multi-criteria, and others) that are ethically grounded and policy-relevant and
c. Identify robust ways to integrate local/Indigenous/ethnic, practitioner, and scientific knowledges for inclusive, multi-level action and territorial autonomies.

d. Co-design an EU–LATAM collaboration agenda (comparative cases, shared datasets, joint papers, and proposal seeds).

**Planned output / Deliverables:**
Expected outcomes include a one-page synthesis of principles and open questions; a draft outline for a joint article or special issue on socio-ecological trajectories and ES governance; and a contact network to coordinate comparative work across regions.

**Session format:**
Oral presentations with solution room discussion. 3 hours for oral presentations and questions. 1 hour for the solution room.

**Related to ESP Working Group:**
SWG 9 – Indigenous people & Local communities

## II. SESSION PROGRAM

**Room:** B2
**Date of session:** Wednesday 20, May 2026
**Time of session:** 09:00 – 10:30

**Timetable speakers:**

| Time | First name | Surname | Organization | Title of presentation |
|---|---|---|---|---|
| 9:05 -9:15 | Clara I. | Villegas-Palacio | Universidad Nacional de Colombia, Sede Medellín. | Tourism Governance and Climate Resilience: A dynamic Socio-Ecological Systems Approach in the Colombian Caribbean |
| 9:15 a 9:25 | Maria | Perevochtchikova | El Colegio de México AC | When Forests and Farmlands Meet the City: Understanding Social-Ecological Effects of the Mexico City Altépetl Bienestar Program through Beneficiaries' Perceptions |
| 9:25 – 9:35 | Andrea | Belmartino | University of Sassari | The Social–Ecological Framework for Farming Adaptation: The Influence of Social Capital on Eco-Practices |
| 9:35 -9:45 | Diego Alexander | Guarín Cifuentes. | TU Dortmund, Department of Spatial Planning | Comprehensive assessment of biophysical and cultural ecosystem services in the northeastern Colombian Amazon. An exploratory approach |
| 9:45-9:55 | Sergio | Herazo | Universidad Nacional de Colombia, Sede Medellín. | Bayesian Networks for Multiscale Governance of Tropical Mangrove Socio-Ecological Systems |
| 9:55 a 10:30 | Q&A session<br>Panel discussion: geographical and cultural connections in socio-ecological approaches | | | |

## III. ABSTRACTS

*The first author is the presenting author unless indicated otherwise*

### 1. Tourism Governance and Climate Resilience: A dynamic Socio-Ecological Systems Approach in the Colombian Caribbean

***First author***: Verónica Valencia
***Other author(s)***: Santiago Arango, Andrés Osorio
***Affiliation***: Universidad Nacional de Colombia, Sede Medellín
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The ecosystems of the Caribbean islands, from their coral reefs to their mangroves, constitute an irreplaceable natural capital that sustains local life, culture, and the regional economy. These ecosystems provide vital services such as coastal protection, food security, and the scenic beauty that underpins tourism and recreation for both the native population and visitors. However, unplanned tourism growth and weak governance, combined with threats related to climate variability, jeopardize the island's environmental sustainability.
This research examines the limiting and enhancing factors of environmental sustainability in the San Andrés and Providencia archipelago, located in the Colombian Caribbean. To this end, a system dynamics model was developed to study the archipelago through a socio-ecological systems lens; the model was calibrated and validated to perform simulations exploring the behavior of key variables related to environmental sustainability. Simulations were conducted for a 'Business as Usual' scenario and four other cases of interest that combine changes in tourism governance with climate threats. Our results indicate an urgent need to strengthen tourism governance by developing social norms and fostering stakeholder coordination to ensure compliance with regulations aimed at protecting insular ecosystems and guaranteeing the provision of nature's contributions to people.

*Keywords*: systems dynamics, insular socio-ecological systems, sustainability, governance, climatic resilience.

### 2. When Forests and Farmlands Meet the City: Understanding Social-Ecological Effects of the Mexico City Altépetl Bienestar Program through Beneficiaries' Perceptions

***First author***: Maria Perevochtchikova
***Other author(s)***: Faustino Gómez-Santiz
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Peri-urban territories provide multiple ecosystem services at different scales, yet they simultaneously face environmental degradation and land-use change that threaten their integrity. To address these pressures, various public policy instruments on conservation, rural development, and territorial planning have been implemented, though they often lack integrated evaluations of their social-ecological effects. In the case of Mexico City's periphery, a series of policy mechanisms have been developed over the past two decades, formulating in 2019 Altépetl Bienestar—a flagship program promoting sustainable agricultural and livestock practices, forest conservation, and technical assistance through five operational components. This study quantitatively examines the differentiated social-ecological effects of the program using the analytical framework of Social-Ecological Systems and five groups of variables. A structured survey applied to a representative sample of beneficiaries yielded 1,612 responses. Statistical tests indicate that the perceived effects vary significantly by program component, although their magnitude is weak to moderate. The most frequently reported improvements correspond to Personal effects, followed by Community ones, while negative perceptions emerge in Environmental effects within areas under strong urban pressure. Spatial patterns also reveal statistically significant territorial differences consistent with the contexts of each municipality. These findings suggest the need to adjust

program operations considering such differentiation and to strengthen continuous evaluation. Institutional constraints and territorial dynamics remain central challenges, pointing to new research lines combining mixed methods, land-use change analysis, and community-based governance approaches.

*Keywords*: Social-ecological Systems; Public policy; Policy effects evaluation; Sustainability; Peri-urban Territories.

### 3. The Social–Ecological Framework for Farming Adaptation: The Influence of Social Capital on Eco-Practices

***First author*:** Andrea Belmartino
***Other author(s)*:** Marta Meleddu, Manuela Pulina, Marco Vannini
***Affiliation*:** University of Sassari
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Climate change has intensified the urgency of ecological transitions, particularly within small-scale farming systems, which are vital for food supply but highly vulnerable to environmental pressures. This study applies the Social-Ecological Systems framework to examine how different forms of social capital (bonding, bridging, and linking) shape ecological practices, identifying climate change as a collective action issue. Using survey data from Sardinian sheep farmers, a Partial Least Squares Structural Equation Modelling (PLS-SEM) disentangles the effects of social capital on the adoption of ecological innovations. Results show that bonding social capital reinforces traditional ecological practices, while local linking predict both traditional and innovative pathways. In contrast, non-local linking ties exert weaker, and in some cases even negative, effects, while bridging ties show no significant influence. Productivity expectations and eco-technical knowledge further mediate adoption, highlighting both economic and cognitive drivers of the adoption process. The findings provide empirical evidence of the multidimensional effects of social capital on distinct ecological pathways, offering policy-relevant insights. Sustaining traditional practices requires leveraging local networks and community knowledge, whereas innovation-oriented policies should focus on building institutional trust, technical knowledge, and closer farmer–institution linkages.

*Keywords*: Social Capital, Eco-Innovation, Knowledge, Farming, Collective Action, Social-Ecological Systems

### 4. Comprehensive assessment of biophysical and cultural ecosystem services in the northeastern Colombian Amazon. An exploratory approach

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***Other author(s)*:** Dietwald Gruehn
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Colombia, as one of the most biodiverse countries in the world, has regions whose ecosystem services (ESS) have not been comprehensively assessed. In recent years, guidelines have been formulated, and examples of ESS management strategies have been compiled through various national planning and policy instruments. Some case studies have focused on economic or ecological assessments in specific regions of the country, such as the Andes or the Caribbean, contributing to their regional socio-environmental development. However, there are significant gaps in ESS assessments that include both biophysical and cultural aspects in certain regions, such as the Amazon and Orinoco areas, which would strengthen environmental management programs and policies. The present research addresses this shortcoming by focusing on less-studied areas, such as the Ramsar Site "Inírida Fluvial Star (IFS)" in the northeastern Amazon region. This assessment is conducted using methodologies that have scarcely been applied in the country, especially within the Amazon biome, including the InVEST model suite for biophysical modeling- specifically habitat quality (HQ), the Urban Flood Risk Mitigation (UFRM) framework for flood risk analysis, and the SolVES methodology for mapping social values associated with ESS. The main

objective of this study is to present an integrated territorial diagnosis aimed at identifying areas where high social and ecological values converge, as well as areas where flood risk poses a significant threat to human well-being and ecosystems. The diagnostic assessment conducted to date reveals potential locations that provide ESS in the area, as well as the main threats affecting them. The relevance of this study lies in the generation of new, detailed data for this region, providing a solid analytical basis and an asset for territorial planning and risk management, underscoring the value of integrated socio-ecological approaches in regions with high environmental complexity and data limitations.

*Keywords*: Integrated socio-ecological assessment, Ramsar sites, Colombian Amazon region, Flood risk modeling, Ecosystem services analysis.

## 5. Bayesian Networks for Multiscale Governance of Tropical Mangrove Socio-Ecological Systems

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Tropical mangroves are socio-ecological systems (SES) in which ecosystem services emerge from complex and non-linear interactions among ecological dynamics, social practices, governance arrangements, and technological interventions. Despite their high value for both nature and people, decision-making in mangrove landscapes often relies on fragmented assessments that fail to integrate multiple knowledge systems, spatial scales, and sources of uncertainty. This contribution explores the potential of Bayesian Networks (BNs) to support multiscale governance analysis of ecosystem services in tropical mangrove systems. Rather than presenting management scenarios or policy evaluations, the focus is on the methodological capacity of BNs to integrate quantitative data (e.g., ecological indicators, land-use patterns, or climate pressures) with qualitative information (such as expert knowledge, stakeholder perceptions, and institutional arrangements) within a shared causal and probabilistic framework. Using mangroves as an illustrative socio-ecological context, our research shows how Bayesian Networks can represent relationships among ecological processes, ecosystem service provision, and governance variables across multiple scales, from local to regional. By explicitly incorporating uncertainty and conditional dependencies, BNs enable the exploration of cross-scale interactions, even in data-limited contexts and without the need for fully developed scenarios. Within ongoing debates on ecosystem service governance, plural valuation, and knowledge coproduction, this work-in-progress doctoral research positions Bayesian Networks as potential tools to facilitate dialogue among scientists, communities, practitioners, and decision-makers, contributing to more inclusive, reflexive, and adaptive governance approaches in Global South contexts.

*Keywords*: Bayesian Networks, Multiscale governance, Ecosystem services, Socio-ecological systems.