4th Open Science Meeting of the Global Land Programme

April 24-26, 2019 | Bern, Switzerland

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Conference Time: 30/Jan/2020 10:13am CET

☐ Conference Agenda

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☐ **Authors**

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Session Overview

Session

310R: Landscape performance assessment as a method of knowledge co-production and framing equitable future pathways

Time: **Friday, 26/Apr/2019: 3:00pm - 4:15pm**
Session Chair: **Enrico Celio**
Session Chair: **Yu-Pin Lin**
Session Chair: **Wan-Yu Lien**
Session Chair: **Li-Pei Peng**
Session Topics: How do we support transformation?

Location: **MB-120**
Main Building, room 120, first floor, west wing, 80 (+14) seats

VIDEO

Session Abstract

Global challenges are often tackled at a landscape scale. The landscape is a unit in which interacting social, economic and ecological processes are more tangible and manageable. Landscape scale management initiatives can be designed to meet a variety of objectives including mitigating climate change, improving a regional economy, managing biodiversity as well as improving the well-being of the people in the landscape. Hence, these landscape initiatives can be the cornerstone of strategies to achieve the SDGs. However, given these complex set of objectives, assessing a landscape's performance broadly can be difficult. The development of co-produced knowledge on landscape performance can be a challenge because of the variety of different, and often contradictory, perspectives among stakeholders. In addition to the underlying challenge of defining good landscape performance, the variety of audiences for landscape scale indicators can complicate assessment efforts. Governments and donors often look for indicators that are simple to define and communicate. Scientists look for rigor. Meanwhile, leaders of integrated landscape management (ILM) initiatives are often most interested in tracking a variety of landscape elements at once, while understanding interactions. As ILM is based on principles of adaptive management, input-output indicators are only partly capable of capturing the added-value of ILM. Therefore, the ILM leaders recommend a combination of quantitative and qualitative measures to grasp landscape performance. This can potentially start by an evaluation of the quality of the ILM process itself. We propose this session to expand land system science by addressing three questions that are part of ongoing discussions in science, but also among scientists and practitioners. (1) How can outcomes of ILM initiatives and the quality of their process be monitored and evaluated? (2) How can landscapes' performance itself be monitored and evaluated? (3) How do these efforts lead to an increased co-production of knowledge and better outcomes for the landscape, its stakeholders and to more equitable future pathways? For this session, we seek contributions that put the described challenges into a clear conceptual frame and/or show and discuss sound monitoring and evaluation schemes for landscape approaches. These might be in a conceptual phase or under implementation. They should show the attempt of crossing sectors and scales and taking into account the iterative characteristics of landscape approaches. Session Organizers: Enrico Celio and Sara Scherr

External Resource: - SESSION RECORDING - https://youtu.be/T8YNC2F9O90

Presentations

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Full talk
ID: 329 / 310R: 1
310R Landscape performance assessment as a method of knowledge co-production and framing equitable future pathways
Keywords: Europe, ILM initiatives

Integrated landscape management initiatives in europe: an overview

Maria Garcia-Martin, Tobias Plieninger
University of Göttingen, Germany

A new paradigm in landscape management is needed as an alternative to the prevailing single-sector-oriented approaches that generally lead to mono-functional landscapes and environmental degradation. Integrated landscape management (ILM) initiatives could offer this alternative. In a coordinated effort with the EcoAgriculture Partners we carried out a systematic review of over 70 local and regional ILM initiatives in Europe so as to identify their characteristics, constraints, and successes. The results of this study indicate these initiatives can offer opportunities for novel partnerships seeking to collaboratively manage landscapes for multifunctionality. However, lack of representation of relevant stakeholder groups and insufficient legal and long-term financial support have been hindering their potential as agents of change for landscape sustainability in Europe. Developing monitoring strategies that demonstrate their success and contributions to landscape sustainability could help increases the legal and financial support they need.

Three years after we finished the European review of ILM initiatives this session of the GLP offers an opportunity to address this challenge by asking the important question: "how can outcomes of ILM initiatives and the quality of their process by monitored and evaluated?" We will use this space to on the one hand, share the main finings of our research regarding characteristics of European ILM initiatives, with a special focus on their self-reported challenges and opportunities; and on the other hand, to suggest ways forward to improve the evaluation of their outcomes.

Full talk

ID: 464 / 310R: 2
212R Landscape ecological and social-ecological approaches in agro-ecological system
Keywords: organic agriculture, socio-ecological systems, sustainability, land use, farmers

The varied contributions of organic agriculture to socio-ecological sustainability in Canada

Susanna E. Klassen, Navin Ramankutty, Hannah Wittman

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Organic agriculture is proposed as a solution to many food systems challenges, including improving environmental problems such as biodiversity loss, and providing better conditions for farm workers. At a global scale, organic agriculture has also been shown to improve pest control, contribute to yield stabilization, and increase profitability of farming, but these benefits are often geographically variable, and dependent on the socio-ecolgical context and the specific practices used by farmers (Seufert and Ramankutty 2017). Organic agriculture is now a recognized policy framework with established legislation to limit chemically-intensive farming practices, and global organic acreage increased by 15% between 2014 and 2015. Yet, there are important knowledge gaps about the extent to which organic farmers are using environmental best practices (e.g. inter-cropping and crop rotations) versus following jurisdictional regulations regarding synthetic inputs. There is growing evidence that organic agriculture should not be conflated with sustainable agriculture, because organic standards do not directly regulate practices that facilitate either ecologically-beneficial management practices or the social welfare of workers (Seufert et al. 2017). Canada hosts the fifth largest organic market globally, valued at $5.4 billion in 2017, and the number of organic farms has been increasing steadily amidst declines in the total number of farmers nationally. This research uses data from the agricultural census and interviews with industry stakeholders to examine trends in the adoption of sustainable management practices and structure of organic farms across Canada relative to non-organic. The study finds that while overall organic farms are using more sustainable management practices compared to non-organic farms, the uptake of these practices varies with farm size, and by context. This research increases our understanding of the varied contributions of organic agriculture to socio-ecological sustainability.

Full talk
ID: 324 / 310R: 3
310R Landscape performance assessment as a method of knowledge co-production and framing equitable future pathways
Keywords: impact assessment, remote sensing, GIS, ecosystem services, rural landscape

Measuring landscape performance over time; a space odyssey?

Louise Willemen, Trinidad Del Rio, Andy Nelson

University of Twente - ITC, Netherlands, The

Globally, rural areas are changing at a vast pace, surpassing planetary boundaries, and facing human development challenges, such as widespread land degradation and resource conflicts. Humans are the main driver of change in the new geological epoch in which we live, the Anthropocene. While the role of humans in degrading rural areas is well-documented and overwhelming, robust, quantitative evidence on the positive human impact to improve the rural landscape is almost entirely absent. This is bad news. The more evidence we have, the wiser decisions on new actions, adaptive management, and resource allocation can be made to drive the urgent improvements of our rural areas.

Spatial data availability and quality is increasing rapidly. How, when and for what can these data be used to measure the effect of integrated landscape interventions over time? Integrated interventions address multiple objectives with intended actions that aim to improve both living conditions for people and nature. These translate into actions in which human needs are addressed by management of the natural environment, with only a minor role for abiotic infrastructures. The concept of ecosystem services, defined as the contributions of nature to humans, links the social with the ecological system and is therefore used as entry point for evaluating integrated landscape interventions**.**

We will provide an example of an ex-post evaluation based on remote sensing (RS) and Geographic Information System (GIS) information to visualize and assess landscape conditions in the rural Baviaanskloof Hartland Conservancy, South Africa. Since 2005, several interventions have been implemented here to overcome decades of small livestock farming which has led to extensive land degradation and loos in income. Interventions included revegetating of degraded areas, long term livestock exclusion and essential oil production as an alternative livelihood to goat and sheep farming; or a combination of these. Together with the project leads from LivingLand we selected six ecosystem services linked to the interventions objectives. Using field observations we calibrated RS Sentinel-2 vegetation indices combined with GIS data, which we used to map the selected ecosystem services. This approach allowed us to compare intervened and non-intervened sites over time, especially those interventions with a strong relation to vegetation.

Full talk
ID: 666 / 310R: 4
212R Landscape ecological and social-ecological approaches in agro-ecological system
Keywords: Cultural landscape, Collaborative planning, Participatory monitoring, indicators of resilience, Satoyama Initiative

Participatory planning and monitoring for integrated landscape management: A case study of eastern rural Taiwan

Kuang-Chung Lee, Shao Yu Yan

National Dong-Hwa University, Taiwan

Landscapes can be regarded as 'a culture–nature link.' Many living examples of the world are rich in natural and cultural values and have proven sustainable over centuries because of the maintenance by local communities. Satoyama, a traditional socio-ecological production landscape (SEPL) provides a functional linkage between paddy fields and the associated environment with lots of ecosystem services. Conservation and revitalization of SEPLs needs a more participatory and comprehensible approach, so that local people in the area and other stakeholders can be involved in the planning and management processes However, there has been a lack of empirical research to develop such kind of approaches.

The study aims to analyze the processes and outcomes of the innovative 'Forest-River-Village-Sea Ecoagriculture Initiative' launched from October 2016 to Dec 2017 in Xinshe village, Hualien, Taiwan. Inspired by the ideas of the Satoyama Initiative and the ecoagriculture, since October 2016, the case study area has started to be planned and managed collectively with help of an area-based multi-stakeholder platform composed of about 20 representatives from local indigenous communities, governmental institutions, the local school, academics, NGOs and green enterprises. Both the Task Force and Multi-Stakeholder Platform Meetings employs an integrated landscape and community-based approach to enhancing sustainable use of biodiversity by the communities and resilience of SEPLs. A short-to-long-term action plan for the Initiative was drew up collectively by stakeholders in April 2017 in line with the framework of three-fold approach to the Satoyama Initiative. To monitor the progress and outcomes of the Initiative, the research team adopted the set of indicators of resilience in SEPLs (UNU-IAS et al. 2014) and conducted a series of workshops with local people to evaluate 20 resilience indicators as well as figure out strategies for enhancing resilience with respect to each indicator. The suggested revisions of the existing action plan for the Initiative proposed by the local indicator task group were successfully brought into the Multi-Stakeholder Platform Meeting for approval.

Flash talk
ID: 390 / 310R: 5
310R Landscape performance assessment as a method of knowledge co-production and framing equitable future pathways
Keywords: Landscape approach, Participatory method, Landscape governance

Assessing landscape governance: a participatory approach

Roderick Zagt[1], Maartje de Graaf[1], Louise Buck[2], Seth Shames[2]

[1]Tropenbos International, Netherlands, The; [2]EcoAgriculture Partners, United States

From local to global and from production to conservation, in any given landscape we find many different functions and interests. For sustainable landscapes it is key to understand how these interests are balanced in rules and decision-making processes, and how this influences the behavior of actors in the landscape.

Tropenbos International and EcoAgriculture Partners developed the Landscape Governance Assessment as an approach to facilitate the participatory analysis of the rules and decision-making processes in the landscape. It allows stakeholders to better understand the governance of their landscape, and to collaboratively identify opportunities for improvements. Tropenbos International has already conducted the Landscape Governance Assessment in 15 landscapes across 9 countries. In this session we will introduce the tool and share experiences with its application.

Full talk
ID: 278 / 310R: 6
310R Landscape performance assessment as a method of knowledge co-production and framing equitable future pathways
Keywords: transformative landscape approaches, co-production of knowledge, landscape performance, theory of change, Southeast Asia

Measuring impacts of transformative landscape approaches to agroecology: lessons from Laos

Jean-Christophe Castella[1,2,3], **Pascal Lienhard**[1,3], **Khameun Nandee**[3], **Thisadee Chounlamountry**[4], **Sonnasack Phaipasith**[5], **Sisavath Phimmasone**[3,4], **Chloé Aussaresses**[1,3], **Robin Collombet**[1,3]

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In the northern uplands of Laos, landscape mosaics and people livelihoods rely on complex interactions, preventing the straightforward adoption of sustainable land management techniques despite their demonstrated performances as compared to (i) swidden systems with shortening fallow periods or (ii) monocropping systems based on the use of chemical inputs and/or mechanical tillage. To facilitate the dissemination of agroecology innovations in remote upland villages, the Eco-Friendly Intensification and Climate resilient Agricultural Systems (EFICAS) project is engaging with village communities into landscape level transformations of agricultural production and resource management. Since 2014, the project staff works closely with local communities on a theory of change process that promotes agroecology practices such as conservation agriculture, agroforestry, system of rice intensification, or integrated farming. Local stakeholders envision their desirable village landscape through participatory land use planning and then engage into successive learning loops to co-produce their own development pathways towards the collectively agreed land use plan.

An impact monitoring systems has been setup since the beginning of the project to demonstrate the effectiveness of transformative landscape approaches on achieving sustainable development goals, including climate change mitigation and adaptation. We selected twelve pairs of similar villages covering the large diversity of agroecological and socioeconomic contexts found in the study region. Interventions were organized in one village of each pair while the other village was used as control. We co-produced the monitoring indicators with local communities to make sure they were meaningful to them and actionable to adjust the interventions all along the transformative process. The participatory monitoring system consisted in three successive rounds of data collection organized in 2014 (baseline), 2016 and 2018 in both intervention and control villages. We co-designed and then used the EFICAS role-play game to explore with farmers scenarios of changes and monitor social learning along the transformative pathway.

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