BOOK OF ABSTRACT

I. SESSION DESCRIPTION

ID: T10a

How to deal with ecosystem services trade-offs and conflicts? (Interactive session)

Hosts:

	Title	Name	Organisation
Host:	Dr.	Francis Turkelboom	INBO (Belgium)
Co-host(s):	Dr.	Irene Iniesta Arandia	Universidad de Cordoba & FRACTAL collective (Spain)
	Dr.	Marion Mehring	ISOE & SBiK-F (Germany)
	Dr.	Antonio Castro	Idaho State University (USA) & Universidad de Almería (Spain)
	Dr.	Marina García-Llorente	IMIDRA & FRACTAL Collective (Spain)

Abstract:

Stakeholders are using and benefiting from different ecosystem services (ES) provided by rural and (peri)urban landscapes. In some cases, these uses can co-exist or even result in synergies; while in other cases, ES-use can result in frictions or even cause conflicts among stakeholders. As such, ES trade-offs are the result of land-use or management choices that purposely increase the delivery of one (or more) ES, at the expense of the delivery of other ES which are desired by other stakeholders. If the trade-off results in expressing disagreements among the involved stakeholders, then they can be considered ES conflicts. In most cases, trade-offs are gradually aggravated as a result of increasing ES use intensity.
In this session, contrasting real-world examples will be presented that explore the causes of ES trade-offs and conflicts. During small group discussions, participants will interview the presenters and jointly identify stakeholder positions/interests/needs, trade-offs, and promising problem-solving strategies.
Reference: Turkelboom et al. (2018). When we cannot have it all: Ecosystem services trade-offs in the context of spatial planning. Ecosystem Services. 29, PartC, p.566-578. https://doi.org/10.1016/j.ecoser.2017.10.011

Goals and objectives of the session:

The objectives of this interactive session is twofold: (1) to learn from real-world place-based cases about the causes of ES trade-offs and conflicts, and better understand how stakeholders respond to them, and (2) to apply problem solving strategies on the presented case studies.

Planned output / Deliverables:

Likely outputs of the session include a joint discussion paper in an appropriate journal, depending on the motivations and interests of the participants.

Related to ESP Working Group/National Network:

Thematic Working Group: T10 – ES in Trade-off analysis & Project evaluation

II. SESSION PROGRAM

Date of session: Wednesday, 17 October 2018
Time of session: 10:45 – 13:00

Timetable speakers

Time	First name	Surname	Organization	Title of presentation
10:45-10:50	Francis	Turkelboom	INBO (Belgium)	Intro Session
10:50-11:00	Diana	Hummel	ISOE (Germany)	Social-ecological conflicts – A framework for analysis
11:00-11:10	Francis	Turkelboom	INBO (Belgium)	Stakeholder responses to spatial planning trade-offs and conflicts
11:10-11:20	Irene	Perez-Ramirez	IMIDRA (Spain)	The conversion of agrarian landscapes at rural areas in Spain: Case study of Las Vegas Rural district
11:20-11:30	Mateja	Šmid Hribar	SAS &AMGI (Slovenia)	Diverse trade-offs and conflicts among ecosystem services in Slovenian landscapes

Time	First name	Surname	Organization	Title of presentation
11:30-11:40	Yaella	Depietri	Technion (Israel)	Trade-offs between regulating and cultural services as sources of hazard risk in a peri-urban natural park
11:40-11:50	Ioanna	Grammatikopoulou	Luke (Finland)	Preference heterogeneity challenges policy evaluation: A case study of peatland conservation in Finland
11:50-12:00	Amelie	Robert	University of Tours (France)	Poplar plantations in France, at the heart of a conflict between provisioning services and cultural (dis)services
12:00-12:45	Interactive session in 5 discussion groups: Dialogue with the presenters of the above case studies, and jointly analysis of stakeholder positions/interests/needs, trade-offs, and promising problem solving strategies.			
12:45-13:00	Plenary session: Reflection on group findings and possible next steps			

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: T10a How to deal with ecosystem services trade-offs and conflicts (participatory workshop)

Tradeoffs between regulating and cultural services as sources of hazard risk in a peri-urban natural park

First author: Yaella Depietri

Other author(s): Daniel Orenstein

Affiliation, Country: Technion, Israel Institute of Technology, Israel

Green areas in and around the city have often been used by city inhabitants to supply food and timber, for cultural and aesthetic purposes, or to provide sources of fresh air and reduce air pollution. More recently, their hazard regulating functions are increasingly valued and accounted as a desirable strategy to reduce risk to climatic and hydro-meteorological hazards. In parallel, most of the literature on ecosystem services' tradeoffs has concentrated on provisioning versus cultural and regulating services. On the other hand, the potential tradeoffs arising between managing nature for recreational, spiritual, mental benefits and for hazard regulating functions in urban and peri-urban areas have rarely been explored. In this paper we assess cultural and regulating services in the Carmel peri-urban forest of Haifa (Israel) using participatory mapping GIS-based methods. We interview local stakeholders and users of the Carmel forest area. We explore tradeoffs between cultural and regulating services (in particular for fire mitigation) and we link these tradeoffs to different understanding and uses of nature. We find that a pristine idea of nature and its conservation better serves cultural values, while the management of the forest and its diversification improves regulating services, especially for fire mitigation. We conclude that the tradeoffs between cultural and regulating services are a source of risk.

Keywords: Peri-urban areas, regulating services, cultural services, tradeoffs, risk to natural hazards

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2. *Type of submission:* ***Abstract***

T. Thematic Working Group sessions: T10a How to deal with ecosystem services trade-offs and conflicts (participatory workshop)

Preference heterogeneity challenges policy evaluation: A case study of peatland conservation in Finland

First author: Ioanna Grammatikopoulou

Other author(s): Eija Pouta, Janne Artell

Affiliation, Country: Natural Resources Institute Finland (Luke), Greece

Peatlands occupy over a quarter of land surface in Finland and provide vital ecosystem services (ES). Peat extraction for bioenergy purposes occurs at the expense of other ES and hence decisions of peatland conservation become complex. To facilitate policy making our study aims to explore citizen's preferences for peatland ES and investigate the presence of heterogeneity. We used the choice experiment method and apply a mixed logit model to identify heterogeneity. The mixed model indicated the presence of heterogeneity in respondents' preferences for peatland conservation but also the relative importance of peatland ES. To further explore heterogeneity at a cluster level as well as attribute processing strategies we employed an attribute non-attendance latent class model (ANA LCM). Respondents were grouped into 6 classes with distinct preferences. 53% (class 1 and class 2) accounted for all environmental attributes while 19% have ignored the attribute of peat use for energy. Also, 64% (class 1, class 5 and class 6) of respondents either almost or totally ignored cost attribute, indicating a reluctance to trade-off between ES or a disfavor of payment mechanism. Marginal Willingness to Pay (WTP) was estimated for classes where payment coefficient was found to be statistically significant. In class 2, the highest WTP was estimated for ensuring a better state of water quality (139-189 €) and area of berry picking (200-206€). In class 3, the highest WTP was estimated for ensuring a peatlands' diversity (80-163€). Welfare analysis was specified for two scenarios, i.e. an average case scenario where all attributes are set at their intermediate level and a best case scenario where attributes are set at their highest level. The average case scenario produced overall welfare benefits of 356€/respondents/year and the best case scenario yielded slightly higher effects (391 €/respondents/year). Our findings may assist policy makers to understand citizens' preferences for peatland ES and their stand towards ES trade-offs. The presence of processing strategies lead to vague welfare estimates that need to be taken into account in cost-benefit consideration of conservation programs.

Keywords: peatlands, ecosystem services, heterogeneity, latent class model, attribute non-attendance

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

T. Thematic Working Group sessions: T10a How to deal with ecosystem services trade-offs and conflicts (participatory workshop)

Social-ecological conflicts – A framework for analysis

First author: Diana Hummel
Other author(s): Marion Mehring
Affiliation, Country: ISOE – Institute for Social-Ecological Research, Germany

Within ecosystem services (ES) research, social-ecological dynamics of ES are gain-ing more and more attention. This focus on interactions between nature and society is also imperative for research on ES trade-offs and conflicts, in order to gain a deeper understanding of the complex conflict dynamics. ES supply and demand is not only influenced by different spatial, temporal and social scales, but multiple ES frequently appear together as bundles and may be subject to trade-offs and conflicts. We therefore call for a systemic perspective that links ecosystem service trade-offs and conflicts to the social-ecological system (SES) framework. This framework leads to a better understanding of the complexity of the social-ecological dynamics, interactions and processes. On the other hand, it allows for a transdisciplinary research approach that aims to produce new insights by integrating scientific and practical knowledge in the problem analysis and problem solving strategies. Against the background of our conceptual framework of social-ecological systems, we provide an approach for a social-ecological conflict field analysis. It comprises the following dimensions: a) the temporal, spatial and societal context of conflict, b) the actors involved, c) the object of conflict and d) the mode of conflict (i.e. in-teractions of conflict parties). The approach includes a conflict typology that distin-guishes conflict forms such as conflicts of interest, conflicts of distribution, value conflicts, knowledge conflicts etc. Presenting a study of a river restoration in Ger-many we illustrate how the social-ecological approach can be applied by focusing on the following questions: What are the most relevant conflicts? Which different forms of conflicts can be identified? How are the different actors positioned in these conflicts and negotiations? What are starting points for conflict transformation?

Keywords: social-ecological conflicts, social-ecological systems, ecosystem service trade-offs and conflicts, transdisciplinarity

4. *Type of submission:* ***Abstract***

T. Thematic Working Group sessions: T10a How to deal with ecosystem services trade-offs and conflicts (participatory workshop)

The conversion of agrarian landscapes at rural areas in Spain: case study of Las Vegas Rural district

First author: Irene Pérez-Ramírez, Marina García-LLorente

Other author(s): Antonio J, Castro

Affiliation, Country: Department of Applied Research and Agricultural Extension, Madrid Institute for Rural, Agricultural and Food Research and Development (IMIDRA), Alcalá de Henares, Spain

Presenting author: Marina García LLorente

The spatial visualization of ecosystem services constitutes a powerful tool for supporting environmental and landscape decision making. Furthermore, the supply and demand of services may differ geographically and temporally within the same region requiring from approaches able to integrate biophysical and social values of ecosystem services. Las Vegas rural district, located at the southeast of Madrid Region and crossed by three main rivers, is characterized by its historic plains rivers with agricultural tradition of horticulture, extensive crops in its valleys, olive, and vineyard in its upper areas. During the last decades, land-use has changed and the population has got disconnected from landscape experience because of the abandonment of rural areas, aging of the population with a lack of replacement and the influence of urban areas. These decisions create compromises or trade-offs when a given land management strategy enhances the delivery of particular ecosystem services while limiting others. In this research, we analyze the spatial distribution of farming ecosystem services and its social relevance. To do so, firstly we have characterized the service of food production for the period 2000-2015 calculating yields (Kg/Ha/Year) and analyzing the changes in the main crops. Secondly, we explore the social relevance of agrarian ecosystem services and the land-use change that affect them through 220 face-to-face questionnaires (conducted between 2016-2018), analyzing ecosystem service importance and the arguments for and against agrarian ecosystem services. We formulate recommendation for spatial planning. ES-related conflicts are understood as "existing and expressed disagreements between stakeholders having different interests or having different values that affect ecosystem management. Management decisions should promote sustainable landscape strategies in which human needs are satisfied while maintaining the capacity of the ecosystem to preserve key ecosystem services.

Keywords: Real-world case studies, trade-off analytical framework, urbanization, rural abandonment, conservation

5. *Type of submission:* ***Abstract***

T. Thematic Working Group sessions: T10a How to deal with ecosystem services trade-offs and conflicts (participatory workshop)

Poplar plantations in France, at the heart of a conflict between provisioning services and cultural (dis)services

First author: Amelie Robert

Affiliation, Country: CITERES Research center (University of Tours, CNRS), France

France owns the second national area of poplar plantations worldwide, after China. But this area currently decreases. How explain this evolution? Is it because of the demand decline? The present study is conducted in the framework of a research-action project, funded by the French ministry of agriculture. It is mainly based on interviews with different stakeholders. Poplar plantations offer provisioning services. Their wood is mainly used for the production of lightweight packaging and plywood and the actors of the poplar sector are unanimous: the decrease of the poplars area is not due to a demand decline. It is even the opposite; so that the industrials are faced shortage and have to buy poplar wood abroad. Different reasons can explain this area decrease. The poplars are often planted on small plots, which belong to private owners. These ones don't find anymore their interest in planting, because they are city-dwellers, inherited these plots but have no knowledge in forestry; because they knew bad events (like storms), which devastated their plantations, and they lost their production. But another reason can be noted, especially in the part of the Loire valley, which was registered on the world heritage Unesco list. Here the historical value and the esthetic aspect of the landscapes are highlighted, all the more since the area is thus becoming touristic. According to this point of view, poplar plantations provided cultural disservices: they spoil landscapes. We can also add that they offer supporting disservices, as far as some critics highlight that these plantations damage biodiversity. They are thus at the heart of conflicts between different services and it can be understood only by taking into account the points of view of the different stakeholders. Some communes are against poplar plantations and try to use laws. It is not sure that this way can solve conflicts. Recently the tensions began to come down and the dialogue is nowadays engaged, especially in the framework of the project, in which this study is conducted.

Keywords: Poplar, forest plantations, provisioning services, cultural services, conflicts

6. *Type of submission:* ***Abstract***

T. Thematic Working Group sessions: T10a How to deal with ecosystem services trade-offs and conflicts (participatory workshop)

Diverse trade offs and conflicts among ecosystem services in Slovenian landscapes

First author: Mateja Šmid Hribar
Affiliation, Country: Research Centre of the Slovenian Academy of Sciences and Arts, Slovenia

The cultural landscape, either rural or urban, as a living space offers natural resources and goods at various levels and for various groups of people. Additionally, it is well known that farmers who are landowners or renters are the main designers of rural and peri-urban landscape through their economic activities. However, these landscapes also provide residence for numerous non-farming residents, and many landscape elements are natural resources that provide important ecosystem services (ES) vital for the well-being of humankind and other species. At the same time many natural resources and ES are recognized as common-pool resources, i.e. they are subtractable and hard to exclude and as such prone to degradation. This is especially the case when diverse stakeholders with different interest and life styles are living in or visiting the area. Thus efficient governance is needed to avoid depletion and conflicts among stakeholders, and trade offs need to be considered. The aim of this paper is to contribute to identifying and understanding backgrounds of different trade-offs among several ES in cultural landscapes in order to move toward their sustainable governance. The research questions I will explore include: How to govern such trade-offs or even better how to seek for beneficial synergies among them? How can non-farming residents empower themselves to get more power and gain rights to some ES? Several trade-off examples and conflicts from protected and unprotected areas in Slovenia will be presented trying to show the complex relationships among provisioning, regulating/supporting and cultural ES.

Keywords: ecosystem services, trade-off, common-pool resources, governance, landscapes, Slovenia

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7. *Type of submission:* ***Abstract***

T. Thematic Working Group sessions: T10a How to deal with ecosystem services trade-offs and conflicts (participatory workshop)

Stakeholder responses to spatial planning trade-offs and conflicts

First author: FrancisTurkelboom

Other author(s): Michael Leone, Sander Jacobs, Eszter Kelemen, Marina García-Llorente, Francesc Baró

Affiliation, Country: INBO, Belgium

Spatial planning usually entail dealing with trade-offs between various stakeholders' wishes and needs in regard to management of landscapes, natural resources and/or biodiversity. To make ecosystem services (ES) trade-off research more relevant for spatial planning, we propose an analytical framework, which puts stakeholders, their land-use/management choices, their impact on ES and responses at the centre. Based on 24 cases from around the world, we used this framing to analyse the appearance and diversity of real-world ES trade-offs. They cover a wide range of trade-offs related to ecosystem use, including: land-use change, management regimes, technical versus nature-based solutions, natural resource use, and management of species. Influential users and 'context influencers' are at the core of the trade-off decision-making, but most of the impact is felt by non-influential users. The level of concern among stakeholders seems to be a good indicator for stakeholder response to the trade-offs, especially among influential users and context setters (93% responded to it). Their responses can be divided into three response categories: communication and negotiation-oriented actions, problem solving strategies that aim to modify the ecosystem use, and investment in new knowledge. There seems to be a balance between more informative and deliberative approaches (such as awareness raising, meetings, negotiation) and more interventionist approaches (such as interventions, new regulation, enforcement). Based on the research findings, we formulate recommendations for spatial planning.

Keywords: Spatial planning, trade-offs, conflicts, stakeholder responses, deliberative and interventionist approaches