

***SPECIAL SESSION: FRAGILE GOVERNANCE***

***WEDNESDAY JUNE 19, 16-17.30***

***Chair: Tatiana Kluvánková-Oravská, CETIP Network and Centre of Excellence  
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Social development, especially globalisation, societal dynamics and transformation processes on the verge of centuries have rapidly increased complexity and uncertainty. Global systems are characterized by the dynamics of human-environment interactions and interconnection across natural and social systems. This makes such systems more vulnerable. The ability of these systems to adapt to changes resulting from multiple variables is thus a key parameter (Janssen and Ostrom, 2006). The risk of natural disasters such as floods, heats, biodiversity loss, infections are just part of the evidence that humanity may be crossing planetary boundaries and approaching dangerous tipping points. Reducing the risk of potential global environmental disaster requires a “constitutional moment” comparable in scale and importance to the reform of governance that followed World War II. A more effective environmental governance system needs to be instituted (Biermann et al., 2012).

The processes through which policies are designed, delivered and implemented now involve greater interaction of governance agencies operating on an increased number of levels. Institutional diversity has increased dramatically in the recent decades. The capability of existing institutional structures in environmental and economic governance is also dependent on the ecosystems to be governed. Human dependence on ecosystem services and the vast importance of ecological feedbacks for societal development, suggest socio-ecological interconnections. The quality of the relation between institutions and ecosystem thus represents novel component of institutional architecture. The legitimacy of governance actors is an emerging issue in multilevel environment. This requires revising the mechanisms for accountability beyond those provided by representative democracy, and finding ways to connect economic actors and citizens with governance structures more effectively (Bache and Flinders, 2004).

*Fragile Governance* addresses decision making under the complexity of governing processes and the uncertainty of external factors. Session argues that multiple

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methods approach is novel methodology for analysing and predicting behavioural changes under complexity and uncertainty.

Session will be organised as panel discussion with 8 minutes for introductory papers presentation, followed by the discussion to address session challenges:

- (i)** *Addressing institutional, spatial and temporal diversity in particular how to manage and navigate unexpected events and shocks to which society is exposed?*
- (ii)** *Demonstrate usefulness of methodological combination in addressing rapid changes of the complex and globalised world.*
- (iii)** *Scaling up findings from small to medium-sized commons to larger decision-making arenas is also challenging.*

*Session is organised by **CETIP Network - collaborative research network** dedicated trans-disciplinary research and training, primarily in the region of Central and Eastern Europe. Main concern is to support flexible research teams, introducing novel ideas into natural – and social science interconnection in Europe. Ambition is also to provide a platform for science and policy interface. Recently collaborative research network expanded by creating join Centre of Excellence SPECTRA of the Slovak University of Technology and Institute of Forest Ecology, Slovak Academy of Sciences.*

**Fragile Governance. Environmental Governance Under the Complexity and Uncertainty.** *Tatiana Kluvankova-Oravska, CETIP and CE SPECTRA at the Slovak University of Technology and Slovak Academy of Sciences. Lenka Sláviková CETIP and Economic University in Prague.*

Fragile Governance is understood as novel interdisciplinary approach to addresses decision making under the complexity of governing processes and the uncertainty of external factors. We argue that multiple method approach methodology (Pottete, Janssen, Ostrom, 2010) is novel and suitable methodology for analysing and predicting behavioural changes under complexity and uncertainty and will demonstrate them on selected cases from European environmental governance varying from agro-enviro EU policies and local practices, to biodiversity protection and forest management to urban planning. Paper will address (i) complexity and institutional diversity, (ii) complexity, uncertainty and socio-ecological dynamics, (iii) complexity and new governance mechanisms.

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**Management of External Shocks in Polycentric Urban Systems.** *Maros Finka, Tatiana Kluvankova-Oravska, CE SPECTRA at the Slovak University of Technology and Slovak Academy of Sciences and CETIP [maros.finka@stuba.sk](mailto:maros.finka@stuba.sk)*

The concept of polycentricism and territorial governance has been broadly discussed in spatial planning as well as governance communities. Polycentric urban development in the EU brought high concentration of economic activities and population in urban spaces, efficient division of functions among the settlements, relatively territorially homogenous accessibility of services and working places for the population, but in the same time strong interdependences in urban systems. This led to the growing vulnerability of urban systems to external shocks (natural or human-made) often appearing locally but affecting the whole system. The combination of the concept of spatial-structural polycentricism and of the concept of multi-level polycentric governance seems to have high potential to offer proper solutions for the problems connecting with the management of external shocks providing flexible, adaptive and robust framework for efficient responses to external shocks and achievement of development sustainability of urban systems.

**Agri-environmental Measures and Sustainability? GIS Based Institutional Analyses in Slovenia.** Udovc Andrej, [Vesna Milicic](mailto:Vesna.Milicic@bf.uni-lj.si), Ljubljana University, Slovenia [andrej.udovc@bf.uni-lj.si](mailto:andrej.udovc@bf.uni-lj.si)

The agri-environmental measures are in Slovenia considered to be a good tool for countryside stewardship in protected areas. For this purpose the Slovenian agri-environmental programme comprehends a separate group of measures, which are designed specifically for farmers farming within protected areas. In our research we tested how efficient are these measures and how widely have the farmers adopted them. We analysed with use of GIS tools and data from Slovenian paying agency the situation in three protected areas located in different parts of the county. We analysed the five years development in agricultural land use according to the actual land use database of Ministry of Agriculture, the detailed land use of those farms that are officially registered in the register of agricultural holdings and are receiving financial support or any other agricultural measures. The results show that the agricultural holdings are considered small, cultivating the area up to 20 ha, divided in many small plots. The analysis of agricultural plant species cultivated showed that farmers mainly produce permanent grassland, followed by production of corn for animal feed. Within the possible measures, various sub-measures are being implemented, among which Sustainable rearing of domestic animals is the most common. The main reason for this is that the majority of farms in the Park area are oriented in livestock production. The analysis revealed that the following sub-measures are: Organic farming, Preservation of special grassland habitats, Greening of arable land, Extensive grassland maintenance, Preservation of crop rotation, Bird conservation in humid extensive meadows in Natura 2000 sites and Preservation of litter meadows. More than one sub-measure can be implemented in one agricultural land.

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As the observed time span includes the programme change between the measures for the period 2004-2006 and the current period 2007-2013, we could also observe how the farmers reacted to the institutional changes. One of the most obvious was that individually they were trying to maximize their individual profits, by improving the possible use of their plots (i.e. turning meadows into arable fields), or re-cultivating the abandoned plots into wet meadows. On the other side also the process of extensification can be observed in cases where less intensive use brings the same or even additional payments as more intensive (i.e. turning fertilised meadows into wet meadows). These results suggest that designing agricultural policy and the protection of nature in the future, requires sector-oriented approach in order to encourage farmers to continue with environmentally appropriate farming practices and thus significantly contribute to the preservation of traditional cultural landscapes and biodiversity. In the paper we plan further to discuss the institutional framework of designing the agri-environmental measures to support the nature protection in protected areas.

**Local or Global Commons? Application of Framework for Analysing SES for Soil Biodiversity at EU level.** *Tatiana Kluvankova-Oravska, CETIP and CE SPECTRA at the Slovak University of Technology and Slovak Academy of Sciences*  
[tana@cetip.sk](mailto:tana@cetip.sk), *Andrej Udovc, Ljubljana University, Slovenia*

The key challenge of soil protection is to identify the most appropriate land management strategy in the face of agriculture driven land-use change. Traditionally soil socio-ecological systems (SES) such as pastures, forest land, conventional but also alternative crop systems represents local systems that have persisted for a long time adapting their rules in use to natural and social disturbances as well as to the broader economic, political and social systems in which they were embedded.

Globalisation however introduces a dimension of scale which affects the vulnerability of traditional SES systems to external disturbances. In particular traditional (long lasting) institutions are challenged by global market actors and global policies, and their institutions that are not embedded in local institutional arenas. In general, the market increases the vulnerability of SES as it demands the intense exploration of soil biodiversity ecosystem services. The probability that markets affect a new area is influenced by institutional structure, in particular the degree of compatibility between current and new rules, such as traditional local institutions of crop rotation and new national or supranational agriculture regulations and measures to support internal markets. Within the EU 7 FMP Ecofinders we applied SES framework as novel tool to address long term sustainability of SES in particularly when dealing with large scale governance systems and their interconnections within nested multilevel governance structures (Ostrom, 2009). Validity of the framework has been empirically confirmed as the tool to be able to identify potential variables of sustainability policies in numerous local studies (Ostrom, 2009).

Main findings are that national or international policy interventions into the traditional small-scale resource systems can increase adaptability to the global market, improve the economic situation of states, sectors and local actors in the short term, but often reduces the capacity of the traditional system to self organize and maintain economic and governance performance when subjected to internal and

external disturbances such as economic crises as well as climate change.

**Institutional Dynamics and Adaptive Governance towards maintaining Socio-Ecological Resilience** *Mari Shioya CETIP and CE SPECTRA at the Slovak University of Technology and Slovak Academy of Sciences*

Resilience is currently defined in the literature as the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity and feedbacks (Walker *et al.*, 2004). Various works on resilience have focused on the capacity to absorb shocks and still maintain function (Berkes and Folke 1998, Berkes *et al.*, 2003, Paavola and Adger, 2005; Hodgson, 2004, Anderies *et al.* 2006, Smit and Wandel, 2006, Galaz *et al.*, 2008). Applying this theory to tourism management practice could give a better solution to environmental problems caused by human impact. In recent years, community-based tourism concept as a tool for both conservation and development has been increasingly recognized (Jain and Triraganon 2003), in the context of development assistance. The emergence of community-based tourism can be placed in terms of two developments: first, recent worldwide activities promoting sustainable and responsible forms of tourism; and second, the emergence of alternative approaches to protected area management and conservation efforts that link biodiversity conservation with local community development.

The socio-ecological system (SES) include societal (human) and ecological (biophysical) subsystems in mutual interactions (Gallopín, 1991). SES concept places humans within nature and focuses on the way in which interconnections between people and their biophysical contexts produce complex adaptive systems. Complex adaptive systems are nonlinear, meaning that a given cause – often resulting from a complex chain of biophysical and human interactions – can produce a disproportionate effect. The nonlinearity of complex system processes makes predicting the outcomes of reorganization difficult from both scientific and decision-making points of view. (Carpenter *et al.* 2001).

This study is based on the theory of Socio-Ecological Resilience in particular to analyse effect of socio-economic shock of over-visitation in Shiretoko National Park, Japan that resulted from designation of World Heritage Site (WHS) and potential for adaptive governance strategies.

The study has been done with a case study approach based on a combination of secondary and primary data. First, the theoretical foundations of human nature relationships and socio-ecological resilience, adaptive governance on protected areas and tourism will be presented through the study of related literature. To assess the impact of disturbance to the SES, interview a semi-structured interviews where undertaken with multi-level actors who are related to park management. In summer 2010, the interview work was conducted at the central government in Tokyo, local governmental office in Sapporo and in the new World Heritage Site, Shiretoko. The total number of interview respondents was twenty five including employees at central government, municipalities, local park authorities, local fishermen/tourism association, and indigenous people in the Shiretoko Area.