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Survival of commons? Institutions for robust forest social – ecological systems

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ABSTRACT

In recent decades, human activities have moved beyond the range of natural variability and are approaching critical tipping points that may lead to irreversible changes to the Earth's systems. In particular, the diversity of actors and scales, and their power and interest in Earth system resources, increases natural – social interconnectivity and the vulnerability of these traditionally local resource systems to disturbances. Using a combination of design conditions and robustness analyses, we argue that institutional maturity and local knowledge of self-organised regimes are pre-conditions for the continuity of local forest socio-ecological systems as long-lasting institutions that survive global market disturbances. Vulnerability and robustness against external natural and social disturbances thus largely depend on institutional robustness, as well as socio-ecological dynamics.

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Introduction

Commons today are understood as any natural or socially constructed resources that are shared by individual or group users, and that are characterised by subtractability and costly exclusion. Commons are thus a unique form of human construction of nature, providing evidence that collective action

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matters and can be improved when commons are in place. The strong relationship between the human and environmental components of commons represents an important challenge for interdisciplinary research on socio-ecological dynamics and resource management.

There is abundant evidence of traditional nature-society systems (social – ecological systems) persisting for a long time, which remain in particular configurations by adapting their institutions to natural and social disturbances (Ostrom, 1990), as well as to the broader economic, political and social systems in which they are located (Janssen and Anderies, 2007; Janssen et al., 2007; Young, 2002; Howlett, 2009; Gatzweiler and Hagedorn, 2002). For example, the concept of social – ecological systems (SES) demonstrates ecological values and functions with institutions as the key forces in managing relations (Berkes and Folke, 1998, Gatzweiler and Hagedorn, 2002). Characterised by self-organisation, transfer of knowledge, resources and institutions across the scale, SES may form a set of independent self-governed systems (Ostrom, 1998; Berkes and Folke, 1998; Poteete et al., 2010).

However, in the current era of globalisation the vulnerability of SES to external disturbances is increasing due to the scales dimension. In particular, traditional durable institutions are challenged by global market actors that are not embedded in local institutional arenas. Globalisation is understood as a complexity of the contemporary world, in particular in terms of diversity of interests, multiple decision actors and the dynamics of economics and trade, making natural and social systems more vulnerable to external disturbances. All of these factors can act to multiply the impact of such disturbances across the decision-making scale, and consequently a system's capacity to maintain its performance when subjected to internal and external disturbances is brought into question. Understanding and managing such complex systems is a tremendous challenge for human society, and is essential for enhancing the robustness of vulnerable SES. Disturbances in our study are understood as any short-term (shocks) and long-term (stresses) events that affect the functions and structure of SES (Leach et al., 2010). An SES is robust if it prevents the ecological systems – upon which it relies – from moving into a new domain of attraction that cannot support a human population, or that will induce a transition of SES structure that causes long-term human suffering (Anderies et al., 2004). Thus SES can become adjusted to some types of disturbances, and in so doing may become vulnerable to the regime changes caused by many contemporary socio-economic processes (Janssen and Anderies, 2007; Janssen et al., 2007), such as market dynamics and property rights changes. This situation can lead to the unavoidable collapse of traditional SES.

Ostrom (1990, 1998, 2008) provided evidence that individuals and groups are capable of crafting rules that allow for the sustainable and equitable management of resources, and are thus adaptable to the new challenges posed by a complex world. In particular, for common pool resources no external authority is needed to solve resource management problems (Fleischman et al., 2010). Self-management and self-governance increases willingness to follow the rules and monitor others, in contrast to when an authority simply imposes rules (Ostrom and Nagendra, 2006).

The political transformation and changes in the property rights structure have created an opportunity for forestry owners to re-establish their traditional management practices. However, the emergence of a market (new resource users) in the absence of well-established market institutions has increased the vulnerability of those traditional practices.

To study these processes, it is essential to understand how SES become vulnerable, as the context in which they operate changes and transforms in an increasingly globalised world. Our paper analyses the effects of new resource users and institutions on the robustness of European forest commons, focusing in particular on the historical forest common pool resource regime in Slovakia. To address this, we reviewed academic literature on several traditional SES that are threatened by new disturbances in their environment, and focused on the main driving forces that influence the emergence of new resource users and institutions to areas traditionally used by local communities. By analysing the structure of traditional forest regimes, our interest is to determine whether and how such regimes are adapting to the emergence of the global market (new resource users and institutions). We argue that the flexibility and local experience of self-organised regimes are pre-conditions for the successful institutional re-design of traditional forest SES to survive the global market and politics, as these factors create the conditions for renewal and increase adaptability to disturbances. These types of forest regimes can also be seen as sustainable forest management under the global market.

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