Simplifying the ‘complex’: Misunderstood resilience and pseudo transformations in forest and coastal social-ecological systems

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Abstract

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Complex social-ecological systems are distinct because of a set of attributes that are not observed in simple systems, including nonlinearity, uncertainty, self-organization, scale, and emergence. However, resource management policies and governance approaches often fail to recognize these key attributes that make social-ecological systems complex and attempt to convert them into simple systems through uniform governance structures, policy provisions and their rigid implementation. This is a growing phenomenon world over and scholars have observed this trend across policies of nation states for resource governance. In this context, I analyze how efforts at simplifying complex resource governance systems lead to the loss of resilience and results in undesirable system transformations. The focus here is on resilience – understood as the capacity of a system to tolerate impacts of drivers without irreversible change in its outputs and structures, or to tolerate disturbance without collapsing into a qualitatively different state, and transformation – understood as significant, often permanent, changes in the structure and functions of a system, or crossing the threshold and its ‘flip’ into a different state.

I use evidences from two distinct resource management cases in the east coast of India: (1) implementation of forest co-management policies in the state of Odisha, and (2) policy changes towards a top-down governance of Chilika lagoon. In both cases, the objective of the government policy and its implementation was to increase resilience of the forest and fishery social-ecological systems in order to bring positive transformations (seen as ‘development’) in the ecosystems as well as peoples’ livelihoods. However, the meaning of resilience as used by the government policies was completely different from the ones emphasised by relevant literature, and from how the resource users perceived it. Consequently, policy interventions resulted in negative resilience and undesirable transformations in the forest and fishery social-ecological systems. I analyze these changes and evaluate options for governance arrangements that emphasise creativity and imagination with regard to building resilience. The findings confirm that if the goal of policy and governance is to increase resilience and, as a result, sustainability, then it must be flexible, open to learning, conserve diversity and variability, attend to slowly changing variables within the social-ecological systems, and not try to optimize components of the system but instead maintain redundancy.

Keywords: Social ecological system, resilience, transformation, governance, policy, co, management, sustainability, forests, lagoons.

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