How do diverse governance systems deal with synergies and trade-offs among ecosystem services on one hand, and stakeholders’ desires on the other?

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Abstract

Social-ecological systems (SESs) (Berkes & Folke, 1998) as complex adaptive systems could acquire different regimes, diverse equilibrium points, and thus generating varied set of ecosystem services (ESs). The resilience of ESs, in terms of the capacity of SESs to continue delivering a desired set of ESs in the face of disturbances and change (Biggs et al., 2012), has gained a widespread importance, as ecosystems underpin human well-being. At the same time, concerns also arise regarding: Whose desires are to be prioritized? How can we ensure adequate representation of all stakeholders’ preferences? Resilience, in fact, is a normative concept, implying the election of a specific system configuration of interests (Carpenter et al., 2001). In other terms, a bundle of ESs that are being generated by the system reflects an inherent valuation of a specific set of services by specific groups of people at particular times and places (Robards et al., 2010).

In this paper, we focus on social/political dimension of resilience, particularly on how diverse governance systems deal with synergies and trade-offs among ESs on one hand, and stakeholders desires and needs on the other. We draw on an exploratory case study from the rice-producing region in southern Spain. Outcomes found that transformation in governance configuration of the SES has resulted in positive changes in the generation of its ESs and synergies in its connected network of ESs. However, expanding our system at scale and time, we have found trade-off among the interests of various stakeholders, specifically between rice and cotton farmers regarding the prioritization of water allocations in drought situations. The study emphasizes democratic innovations, identifying factors that promote the empowerment of all stakeholders in decision-making, and thus a fair and equitable delineation of the desired ESs.

Keywords: Social, ecological systems, governance, ecosystem services, synergies, trade-offs