Transformational knowledge practices in social-ecological systems

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Licentiate Thesis in Sustainability Science
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Sweden, 2016
Climate change and poverty alleviation are examples of interconnected challenges ranging across environmental, social, cultural and political spheres. Interconnected challenges are characterized by multiple causality, feedback loops, non-linear dynamics. Transformations, as fundamental reconfigurations of social-ecological relations, are increasingly proposed as a strategy for tackling interconnected challenges. Further, transformations seem to require a move towards diverse, integrated, imaginative, anticipatory, dynamic forms of knowledge making. Although new forms of knowledge creation are indeed emerging in sustainability science and practice, transformations studies haven’t yet yielded a coherent research framework for analyzing the contribution of these practices to transformations in social-ecological systems.

The central aim of this thesis is to a) provide the theoretical framework and b) to explore and assess feasibility and effectiveness of concrete knowledge practices that could help governance actors to move towards forms of deliberate transformations in the face of interconnected challenges. Two empirical research papers based on a case-study in Coastal Kenya are presented. In these papers we approached the interconnected challenges of social-ecological trade-offs by engaging multiple knowledge practices (ranging from dialogue, to narrative scenarios, participatory modelling and ecological modelling) that created a space for imagination and deliberation amongst governance actors and scientists. Assessment of this process was conducted through a mixed methods research design, including interviews, surveys, participant observation. Results suggest that overall, the knowledge practices supported: a) development of systemic and collaborative mindsets; b) revision of core assumptions (Paper 1); c) the identification of key cross-scale tradeoffs that were previously not considered by governance actors (Paper 2). These results highlight the potential of these knowledge practices in fostering knowledge relevant for re-imagination and reconfiguration of social-ecological systems. I conclude by proposing that transformational knowledge practices present at least four key elements in that they are: plural and coproduced, affect change across scales, involve multiple ways of knowing and foster imagination.
List of Papers and contributions

**Paper I**  

I supported the design of participatory process including the development of scenarios and interactive toy model. I facilitated some of the activities during the workshops. I also co-designed the monitoring strategy including interview and survey questions. As first author I was responsible for theoretical framing and for manuscript writing.

**Paper II**  

I co-designed participatory workshops and contributed with manuscript writing, toy-model data preparation and results analysis.
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