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Resilience, Social Learning and Networks

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Resilience

Ecological resilience (Holling)
Resilience determines the persistence of relationships within a system and is a measure of the ability of these systems to absorb changes of state variables, driving variables, and parameters, and still persist.
Holling 1973, 17.

Socio-ecological resilience (Nelson, Brown & Adger.)
The amount of change a system can undergo and still retain the same function and structure while maintaining options to develop.
Nelson, Brown & Adger 2007, 396.

Learning I – Understanding of Learning

- not only change in cognition but also in behaviour

Learning II – Concepts Connecting Learning and Climate Change Issues

- increasing role of learning within resilience debate
- increasing role of learning within adaptation debate

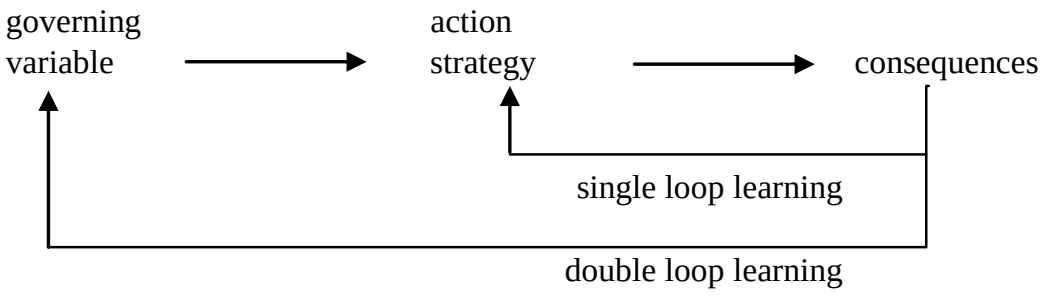
Pelling and High

– shadow networks

Berkhout, Hertin and Gann

– Adaptation of organisations: organisational learning based on dynamic capabilities

Learning III – From Organisation to Social Learning



Learning VI - Resilience Learning

Adaptation Learning
The process in which actions are modified due to actual or perceived climate change related threats through inclusion of new knowledge without modification of norms and values.

Resilience Learning
The processes of change on the level of individual or collective actors or even in a society that is based on newly acquired knowledge, a change in predominant value structures, or of social norms, with the objective of improvements in the field of resilience and adaptation, which results in practically sizeable outcomes.

Learning V – Questions of Resilience Learning

- How can (increased) resilience be addressed?
  - system properties vs. scenario lead analysis
- Who are the actors?
- Who is resilient?/ Who learns to be resilient?
- How is knowledge transferred to action?

Learning VI – Challenges to Resilience Learning

- complexity
- diversity/ parallelism
- uncertainty
- discourse
- power and legitimacy
- long term orientation
- conflicts of scale
- unlearning

Networks – Findings of Chosen Network Concepts

- weak and strong ties
  - trust vs. diversity of thinking
- learning region
  - creation and mobilisation of regional strengths
- Gremi concept
  - differentiation of territorial/ local and intentional networks

Resilience Learning and Networks I – Role of Networks

- Resilience networks can be described as “strategic partnership(s) or alliance(s) among the stakeholders who come together to improve *resilience* of a complex socio-ecological system”.
  (derived from Manring 2007; 328)

Resilience Learning and Networks II – Requirements for Networks

- common purpose: resilience
- common understanding of resilience
- common rules of problem solving
- commitment
- modular network architecture

Resilience Learning and Networks III – Opportunities

- networks can advance exchange of explicit local and scientific knowledge.
- networks can advance exchange of implicit local knowledge.
- networks can help share risks for trial-and-error based knowledge creation.
- networks can decrease costs for search based knowledge creation.

Thank you!

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Resilience of what?

- What are the big issues? Can they be considered collectively (preferable), or do they need to be dealt with separately?
- What are the “variables of concern”? What is it that the stakeholders (from all scales) are concerned about and wish to maintain?
- Identify, and approximately demarcate the boundaries of, the scales you need to consider.
- Considering the ecosystem goods and services that support the main resource uses and also the non-marketed ecosystem goods and services, relatively, how important are these biophysical variables? Which of them are most significant and need to be included in the assessment?
- From the perspective of the key groups of people in the region (i.e., with respect to policy, management, and use of natural resources), what conflicts, issues, and challenges do they face? And what conflicts, issues, opportunities, and challenges might future generations face? And what conflicts, issues, opportunities, and challenges might future generations face? Which of these challenges, conflicts, opportunities, and issues most need to be included in the analysis?

(Resilience Alliance 2007c, 7)

Resilience to what?

- Resilience to what?
- What are the system drivers and disturbances?
- What are the trends in the major resources (soils, water, biota), and the major resource uses?
- What important ecological and social changes are currently taking place? How have they changed over time - gradual ramp up, slow decline, rapid jump, collapse, oscillation?
- What are the characteristic disturbances, in both the social and ecological domains, at each relevant scale? Are there changes in the patterns of these disturbances – in frequencies or intensities? Are there novel kinds of disturbances emerging? Are there attempts by managers to control or modify these disturbance events?
- Develop a historical profile of the system. Identify the times/periods of major events that changed the system. It is useful to do this at each scale of analysis (the focal scale, below and above), and identify cross-scale connections – how events at one scale either caused or resulted from events at another scale.
- How has the system been modified to alter the flows of a) goods, and b) ecosystem services?
- Considering these modifications, re-visit the “big issues”. Do they need to be changed?
- Using the insights gained from this historical profile, try to identify underlying controlling variables (often ones that have been changing slowly) that caused changes in the natural system, the people, and in the interventions that people made.

(Resilience Alliance 2007c, 7)

Concept – Networks Creation

- governmental organisations (KLIMZUG)
  - networking one of the main goals
- change agents