

Sediment management from a resilience perspective

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Introduction

The resilience lens is a framework on a systems level that deals with complexity and dynamical processes of change and renewal. It emerged from ecology in the 1960s and early 1970s and has linkages to other theories that describe (in)stable and far and near-equilibrium processes in systems, like thermodynamics and complexity theory [1]. The resilience perspective is increasingly used as an approach for understanding the dynamics of social-ecological systems [1,2]. It sees social and ecological systems as one and not as separated. In this paper the resilience lens will be applied to sediment management and key concepts of the resilience lens like regime shifts, the adaptive cycle, panarchy, adaptive capacity and adaptive management will be explained with illustrations from sediment management. The application of the resilience lens makes it possible to connect social and ecological processes that until now have been dealt with as separated.

Methods

The concepts of the resilience lens will be illustrated with cases from the "Living with Sediments"-project. Moreover in the special session on the 4th day of the SedNet Conference, different stories from practice will be presented, that will be highlighted in this paper and put into the resilience lens framework. Social processes and biophysical processes are linked in these cases and will be elaborated. Social learning, stakeholder involvement and adaptive management are important concepts for the resilience lens and are explained by and illustrated with these cases.

Results: From the explanation of the resilience lens and its application on sediment management recommendations for research and policy (an agenda) will be derived.

References: [1] Gallopin, G.C. Linkages between vulnerability, resilience and adaptive capacity (2006). *Global Environmental Change* **16** 253-267
[2] Folke et al., [2002], Resilience and sustainable development: Building adaptive capacity in a world of transformation. Scientific background paper on resilience for the process fo the world summit on sustainable development on behalf of the

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