Resilience, vulnerability, adaptive capacity, and social capital

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What are we measuring?

- Resilience?
- Vulnerability?
- Social Capital?
- Adaptive Capacity?

- Concepts complexly defined and interrelated
- Need for a national agreement on a methodological approach on how to use and measure these concepts
Social-ecological systems (SES)

“The subset of social systems in which some of the interdependent relationships among humans are mediated through interactions with biophysical and non-human biological units” (Anderies et al. 2004:3).

—Resource
—Resource user
—Public infrastructure
—Public infrastructure providers

Community

Defined as social system interactions encompassed within a definite geographic space.

— Neighborhood
— Census tract
— City
— County
Resilience and Vulnerability

- Concepts complexly interrelated
- Exact relationship depends on definition, discipline, and personal preference
- In the SES literature the concepts are often seen as two ends on a continuum:

  Or, as resilience as a component of vulnerability:
Policy strategies with different focuses

**Resilience** is linked to dynamics of social systems such as adaptability and transformability

- Policy strategy to **ensure sustainability** of natural resources and human communities

**Vulnerability** focuses on exposure, sensitivity, and adaptive capacity

- Policy strategies that emphasize **assets of communities** that will **enhance adaptability** in the face of disturbance

Resilience

- The ability of a social system to respond and recover from disasters
- Includes the ability of the system to absorb impacts
- Includes coping with the event as well as post-event adaptive response
- Facilitates the system’s ability to reorganize, change, and learn
- Inherently functions well during non-crisis and is adaptive/flexible in response to disaster
Adaptive capacity

- The ability of institutions and networks to learn, and store knowledge and experience
- Creative flexibility in decision making and problem solving
- The existence of power structures that are responsive and consider the needs of all stakeholders
Vulnerability

- Pre-event, inherent characteristics of the social system that create the potential for harm
- Used to describe states of susceptibility to harm, powerlessness, and marginality of both physical and social systems
- Patterns of differential access to resources or differential susceptibility to loss
Components of vulnerability

**Exposure**

— “Degree, duration and/or extent in which the system is in contact with, or subject to, the perturbation” (Gallopín 2006: 296).

**Sensitivity**

— “Degree to which system is modified or affected by a disturbance or set of disturbances” (2006: 295).

**Adaptive capacity**

— “System’s ability to adjust to disturbance, moderate damage, take advantage of opportunities, and cope with consequences of transformations that occur” (2006: 296).

Social capital

- Captures the dynamic nature of society
- Improves the effectiveness of society
- Includes networks of social relationships defined by trust that can improve the society by coordinated actions of reciprocity
- Is often an indicator of resilience and vulnerability
Social capital

Distinctions
  — Vertical vs. horizontal
  — Formal vs. informal
  — Heterogeneity vs. homogeneity
  — Bonding
  — Bridging
  — Linking

Depends on scenario/circumstance
  — Culture specific
  — Specific to certain types of fisheries
Some conceptual challenges involving resilience, vulnerability, adaptive capacity and social capital

- The idea of coping and adapting to change (whether it is called resilience or adaptive capacity) may be seen as a component of vulnerability that is associated with the capacity of social systems to respond to change

- Social capital and adaptive capacity may be components of either resilience or vulnerability or both