

Natural Disaster Risk Reduction in Coupled Social-Ecological Systems: Old Questions and The New Challenge

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Old Questions:

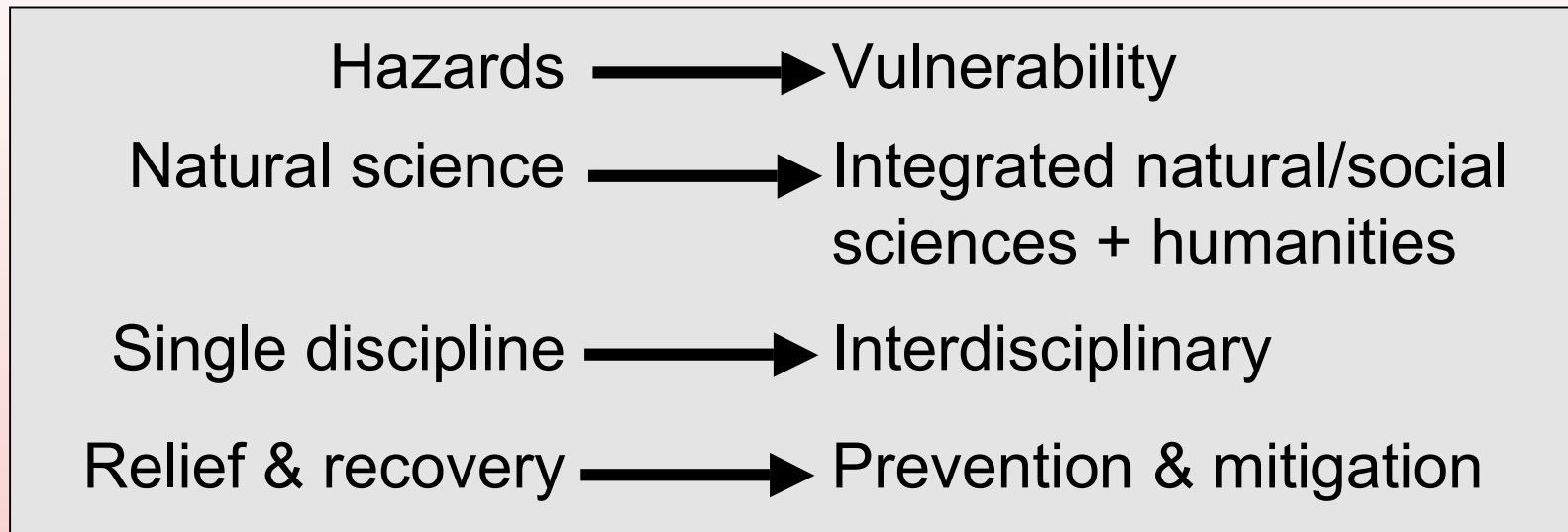
- Why do disasters occur?
- Why, despite general progress of human societies, do disasters continue to get worse?
- Over time, the answer to these questions reflect society's evolving understanding of our relationship with natural hazards/disasters
 - 'Act of god'
 - Human and Nature interaction
 - Coupled Social-Ecological Systems (SES)

The New Challenge

The concepts of vulnerability and resilience have led to a powerful new way of conceptualizing disaster risk reduction in coupled SES

HOWEVER, they have also engendered tremendous practical challenges for those seeking to mainstream DRR.

Key Elements of the Paradigm Shift in DRR



Call for integrated disaster management, living with natural disasters, mainstreaming DRR

Factors Driving the Shift

- Worsening global impact of natural disasters' impact globally - particularly uneven pattern
- Linkage between development and disaster has become increasingly clear
- Promise of the vulnerability and resilience concepts, which underlie the shift and allow it to be 'framed'

Promises of the Vulnerability and Resilience Concepts

- ***Coupled social and ecological system focus*** - focus on receiver unit rather than trigger event
- ***Multiple stresses/stressors*** - linkage between livelihood and disaster
- ***Spatial and temporal dynamics and cross-scale linkages***
- ***“To adapt” rather than “to Control”*** – from resilience thinking.
- ***Link to sustainable development***

'Beauty' Is Also The 'Beast': The Challenges Stem Precisely from the Promises

- The conceptual advances represented by the vulnerability/resilience-based approach to DRR has not been matched by an empirical/operational one.
- Therefore, we are at a stage where we know the practices are inadequate, but we do not yet have the conceptual tools, political will, and methodologies to meaningfully implement new approaches

Conceptual/Operational Divide 1: Analytical Tools

- The analytical approach is still far from functionally operational - poor understanding/lack of tested methodology on key components:
 - Multiple stresses
 - Cross scale dynamics
 - Sequential and cumulative impacts

Conceptual/Operational Divide 2: Core Concepts and Linkages

- We still don't know much about the 'coupled-ness' of the SES, or therefore about key linkages that are central for devising integrative policies
 - Environmental degradation and disaster
 - Poverty and disaster
 - Resource management and disaster

Conceptual/Operational Divide 3: Policy Penetration

- The advances of vulnerability and resilience concepts are still largely conceptual, and their direct policy influence is still weak and anecdotal
 - Robust empirical testing still to come
 - Complexity is too high for operational guidance

Conceptual/Operational Divide 4: Institutional Structure

- The enabling institutional structure is not there:
 - No ‘vulnerability manager’ or ‘resilience builder’
 - ‘Policy as experiment’ is still too politically sensitive for decision/policy makers

Concluding Remarks

- The paradigm shift is still in its early stage – so we need ‘accumulation’ of tools, methodology, cases...
- Stakeholder-engaged participatory process is essential for this ‘accumulation’ plus ‘translation’
- Political will is critical to make the shift in governance happen