Governance for Resilience: Flexibility and Adaptation through Constituency

Paul E. Roege, P.E.
Creative Erg, LLC
TISP, Charleston, April 2016
Our Changing World

Billion Dollar Weather/Climate Disasters
1980 - 2011
NOAA/NESDIS/NCDC

- Actual # events exceeding $1 billion in damages at the time of event
- Actual damage amounts at the time of the event
- Adjusted # events exceeding $1 billion adjusted to present using the Consumer Price Index (CPI)
- Adjusted damage amounts at the time of the event adjusted to present using CPI

Number of Events

Years (1980 - 2011)

Damage Amounts in Billions of Dollars
Risk Management Alternatives

Protection

Performance Requirements → Design → Build → Event → Survive → Fail

Resilience

Capability

Plan → Respond → Recover → Adapt

Time

4/5/2016
Resilience Perspectives

**Top-down:** the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions...[it] includes the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents.

*Presidential Policy Directive, PPD-21: Critical Infrastructure Security and Resilience*

**Bottom-up:** the ability of a system, organization, community, household or individual to change in a positive manner, when faced with adversity.

*Operationalizing “resilience” for disaster risk reduction in mountainous Nepal. Sudmeier et al. 2014*
Beyond Modular Management
Sensing and Learning

Capturing/responding to individual observation and cognition
Crowdsourcing

Channeling organizational capability to empower people
Amending Governance

- Expand multi-domain emphasis on effectiveness to improve outcome orientation
  - Enterprise management
  - Design guidance
- Open pathways for learning to climb from individual to collective levels
- Cultivate entrepreneurial participation and deliberately channel organizational capabilities through non-governmental efforts.