Disaster Resilience: A Local to National Imperative

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Five Years Out:
Ongoing Impacts of the 2008 Iowa Floods Conference
May 31, 2013
Cedar Rapids, Iowa
- Number of federal disaster declarations is rising
- In 2012 losses exceed $107 billion ($58.5 billion insured)
- More citizens are living in or moving to areas with prevalent natural hazards
- No person or place is immune from disasters or disaster-related losses.
- Communities and the nation face difficult fiscal, social, cultural, and environmental choices about the best ways to ensure security and quality of life against disasters.
The Landscape of Roles and Responsibilities

Federal
(14 cabinet-level agencies)

State
(50—different hazards, histories, capacities)

Local
(1000s—cultural, historical, educational, structural differences)

Infrastructure

Laws, regulations, infrastructure, data, $$$$

Laws, regulations, $$

Laws, local codes & regulations, plans, preparedness, education, health

Individuals/ Households

NGOs/FBOs
Industry groups
Science & research

The Problem
Study Sponsors

Department of Agriculture Forest Service
U.S. Army Corps of Engineers
Department of Energy
U.S. Geological Survey
Department of Homeland Security and Federal Emergency Management Agency
National Aeronautics and Space Administration
National Oceanic and Atmospheric Administration
Oak Ridge National Laboratory and the Community and Regional Resilience Institute

Timeline

Study began, September 2010
Five meetings (3 regional site visits)
Report release, August 2012
Disaster Resilience in America: Launching a National Conversation, November 2012
Extra year and funds for dissemination
Define “national resilience” and frame the primary issues related to increasing national resilience to hazards and disasters in the United States;

Provide measures, baseline conditions, for resilience at the U.S. national level;

Describe the state of knowledge about resilience

Identify data and gaps and obstacles to action in order to increase resilience to hazards and disasters

Conclusions and recommendations about what approaches to elevate national disaster resilience in the United States.
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What is Resilience?

The ability to prepare and plan for, absorb, recover from, or more successfully adapt to actual or potential adverse events

What we learned from the Iowa site visit

1. The value of an all-hazards approach in preparedness, response, and mitigation.
2. The significance and importance of local capacity.
3. Promoting resilience by keeping the memory alive (African American Museum; Czech and Slovak Museum, high water marks)
4. Active engagement of all stakeholders (business, community organizations, citizens, universities, elected officials).
5. The role and significance of adaptive behavior and solutions.

Historic flood levels inundate Mercy Medical Center 1st floor and basement levels; photo by Dr. Blaine Houmes/Mercy Medical Center, available at http://www.earthzine.org/2011/06/28/code-grey-protecting-hospitals-from-severe-weather/
So, What Do We Do to Enhance the Nation’s Resilience to Disasters?
Establish a National “Culture Of Resilience”

- Communities, and their governance structures and systems, need to be robust and collaborative.

- Long-term shifts in physical and cultural approaches are needed.

- Linked bottom-up and top-down networks are important for managing risk and increasing resilience.

- Community resilience requires identification and acceptance of specific roles and responsibilities for government, the private sector, and local stakeholders.

A necessary first step to strengthen the nation’s resilience and provide the leadership to establish a national “culture of resilience” is a full and clear commitment to disaster resilience by the federal government.

Photo: Port of Los Angeles upgrade to address risk and sustainability
Source: Gerry Galloway
Specific Steps toward a “Culture Of Resilience”

Build local capacity—resilience from the bottom-up.

Identify, assess, and reduce disaster risk.

Build the case for making long-term investments in resilience.

Measure progress.

Develop national resilience vision and policy.

Photo: Cedar Rapids, IA during the 2008 flooding
Source: AP photo/Jeff Robertson
Build Local Capacity—Resilience from the Bottom-Up

Community resilience begins with strong local capacity.

Universal Bottom-Up Steps

- Engage the community in disaster policy planning
- Link public & private infrastructure performance to resilience goals
- Communicate risks, promote a culture of resilience
- Organize communities and families to prepare for disasters
- Adopt sound land-use practices and adopt and enforce building codes

The nation’s communities are unique and the risks faced by every community vary according to local hazards.
Identify, Assess, and Reduce Disaster Risks

Reducing risk requires a process of identifying risk, developing and implementing a strategy to deal with that risk, and keeping that strategy up to date.

A variety of tools and approaches are available to manage disaster risk:

**Structural:** e.g., levees, dams, disaster-resistant construction, “smart” building, and well-enforced building codes

**Nonstructural:** e.g., natural defenses, risk mapping, zoning ordinances, economic incentives, hazard forecasting/warning, insurance, and catastrophe bonds

**Complementary risk reduction and risk-spreading tools and measures are required.**
Demonstrate the Case for Resilience Investments: Assessing the Challenge

- Valuation of a community’s assets—including infrastructure and assets with social, cultural, and environmental value—is important to make resilience investment decisions.

- Demonstrating that community investments in resilience will yield measurable short- and long-term benefits is critical for sustained commitment to increasing resilience.

- Knowing the patterns of disaster losses allows communities to understand where the impacts are the greatest and what factors drive their exposure and vulnerability.

Existing loss and inventory databases in the United States are useful for certain kinds of analyses, but improvement in measurements, accuracy, and consistency are needed.
Critical dimensions of a consistent resilience measurement system are:

- the ability of critical infrastructure to continue to perform;
- social factors (e.g., health, socioeconomic status) that enhance or limit a community’s ability to recover;
- indicators of the ability of buildings or structures to withstand different disasters (e.g., building codes, adopted and enforced);
- factors that capture the special needs of individuals and groups.

The nation needs a consistent basis for measuring resilience.
Develop Resilience Policy and Vision

- Strong governance at all levels is key.

- National policies need to take a long-term view of community resilience.

- Gaps exist in policies and programs among federal agencies in all parts of the resilience process.

- Gaps result from:
  - the legislative authority within which agencies operate
  - lack of effective coordination of the roles and responsibilities
  - lack of a unified resilience vision.

The nation does not have a overall vision or coordinating strategy for resilience.
Recommendations

- Government should support the creation and maintenance of broad-based community resilience coalitions at local and regional levels.
- Community commitment to and investment in risk management strategies.
- Establish a national disaster database.
- Develop a National Resilience Scorecard.
- Federal agencies should incorporate national resilience as a guiding principle.
- All federal agencies should ensure they are promoting and coordinating national resilience in their programs and policies.
Next Steps
Short-term: dissemination & outreach through September 2013


- Four printed products (study report, standalone summary, 2 workshop reports)

- >12,000 downloads of PDFs (report and derivatives; national and international interest)

- Website: [http://nas-sites.org/resilience](http://nas-sites.org/resilience) (including interviews with November 30 panelists, keynotes; webcast of event)

- 9 DC briefings (sponsors, White House Nat’l Security staff, House Committee on Homeland Security, Sen. Landrieu’s office, Sen. Kerry’s office, Senate Legislative Assistants, White House Subcommittee on Disaster Reduction, Assistant Sec’y Lurie at DHHS, Chief Tidwell at USFS)

- 18 invited briefings by committee members/staff to various organizations (NAIC, NACo, NVOAD, NCSE, Oxfam, Nat’l Health Preparedness Summit, NATO, etc…more scheduled)
Next Steps: Longer-term

Numerous requests—national, state, local, and international—to continue the conversation and NRC engagement beyond September 2013

Wrap-up/launch event with sponsors, other potential sponsors—Autumn 2013

☐ Four pillars:
  - Measure resilience in communities
  - Build community coalitions
  - Manage and communicate risk
  - Share information and data to build resilient communities

☐ Future follow-on activity may include:
  - convening regional meetings, workshops, strategy sessions
  - serving as a neutral convening and meeting venue
  - coordinating regular webinars
  - helping to facilitate community exchanges
  - fostering development of additional ad hoc activities
Disaster Recovery: Opportunities to Enhance Resilience

- Establish a local and state culture of resilience with a shared vision and policy
- Build local capacity—resilience from the bottom-up (and link to top-down efforts)
- Identify, assess, communicate, and reduce disaster risk
- Build the case for long-term resilience investments (use data and information)
- Measure progress
- Adopt sound land-use practices, enforce building codes, build safer and smarter
- Use an all-hazards approach
Characteristics of a Resilient Nation in 2030

- Individuals and communities are their own first line of defense against disasters.
- National leadership in resilience exists throughout federal agencies and Congress.
- Community-led resilience efforts receive federal, state, and regional investment and support.
- Site-specific risk information is readily available, transparent, and effectively communicated.
- Zoning ordinances are enacted and enforced. Building codes and retrofit standards are widely adopted and enforced.
- A significant proportion of post-disaster recovery is funded through private capital and insurance payouts.
- Insurance premiums are risk based.
- Community coalitions have contingency plans to provide service particularly to the most vulnerable populations during recovery.
- Post-disaster recovery is accelerated by infrastructure redundancy and upgrades.

A resilient nation in 2030 also has a vibrant and diverse economy and a safer, healthier, and better educated citizenry than in previous generations.
Communities and the nation continue to face difficult choices about the best ways to ensure basic security and quality of life against the rising human, fiscal, and environmental tolls from natural and human-induced disasters. One way to reduce the impacts of disasters on the nation and its communities is to invest in enhancing resilience, a topic confronted by the 2012 National Research Council report, Disaster Resilience: A National Imperative.