

Japan 2011

Haiti 2010

NATURAL

CENTER

Hazards, Disasters, and Social Vulnerability

Kathleen Tierney Dept. of Sociology & Institute of Behavioral Science Natural Hazards Center Univ. of Colorado at Boulder

National Science Foundation Workshop June 1-2, 2011

What is Social Vulnerability to Disaster?

- <u>Differential and dynamic</u> potential for experiencing loss: death, injury, illness, economic and livelihood losses, psychological and psychosocial dysfunction,community-level losses, reductions in quality of life, sense of community, etc.
- Properties of various social entities: individuals, households, groups, businesses, communities, society

What is Social Vulnerability to Disaster?

Properties, conditions that can be measured prior to and independent of actual events

Properties, conditions that are created by events: post-disaster risk of illness, victimization, etc.

Properties, conditions that can be created, exacerbated by how events are managed: aid distribution, reconstruction and recovery strategies, etc.

Social Science Research on Vulnerability: Key Foci

 Attributes, characteristics of social units that increase the potential for loss



 Social processes that produce vulnerability both before and after disaster events



Vulnerability Science: Societal Dimensions

Research on loss potentials arising from:

Population characteristics that contribute to loss

Places and their inherent and acquired vulnerabilities





Vulnerability Science: Societal Dimensions

Research on loss potentials arising from:

Organizational and institutional vulnerabilities

Global and societal processes that produce/ increase vulnerability





From This: Mid-20th Century Approach to Conceptualizing Disasters



To This: Vulnerability Science Perspective on Disaster



Vulnerability Analysis Methods (Not Mutually Exclusive—Multi-Method Research Most Valuable)

- "Social indicators" approaches: SOVI (U. S.), DDI, etc.
- Geospatial science analyses focused on combined effects of hazard, infrastructure, and population vulnerability
- Survey research: populations, institutions, organizations, agencies
- Field research and other qualitative methods

Vulnerability Analysis Methods (Not Mutually Exclusive—Multi-Method Research Most Valuable)

- Risk-analytic procedures and modeling, social and economic loss estimation
- Dynamic demographic analyses, e.g. population trends, mobility and migration
- Socio-historical research on the development of social vulnerabilities
- Analyses of policies and programmatic outcomes

Variables, Topics of Interest: Some Examples

- Indicators of social inequality and poverty
- Race, class, gender and their intersection; other social and demographic characteristics
- "Capacity" and "capitals" indicators
- Environmental justice/ injustice indicators





Variables, Topics of Interest: Some Examples

- Economic indicators at macro, meso, and micro levels
- Historical patterns of development, land use
- "Entitlements": aid sources, property rights, etc.
- Linkages, interactions between built environment and social vulnerabilities







Natural Hazards Center

University of Colorado 482 UCB Boulder, CO 80309-0482

Phone: (303) 492-6818

Web: www.colorado.edu/hazards

