

# Preparedness

## Co-leaders

Deborah Thomas, Marc Eberhard

## Participants

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Judith Mitrani-Reiser, Justin Yates, Jun Zhuang



# Summary Discussion

- Strategies for being effective within an atmosphere of corruption
- Development of effective models of community-based participatory activities for mitigation and preparedness.
- Development of economically and culturally appropriate mitigation and preparedness measures.
- Development and assessment of grass-root strategies for timely education and technology transfer, including guidance on appropriate construction practices.
- Development and assessment of methods for providing mechanisms/incentives for risk-reduction activities.
- Strategies for focusing on systems approach to critical facilities, equipment, networks and human resources, in a fragile society.



# Summary Discussion

- Strategies to address fragmentary nature of institutions and lack of vision; capacity building around coordination, organization, communication and network planning.
- Strategies to optimize performance of interacting human/physical networks.
- Develop data and methodologies for reliable cost-benefit assessments to help prioritize resource allocation in the developing world
- Development and assessment of effective communication strategies in the developing world setting.
- Evaluation and articulation of differential impact of preparation and mitigation activities, and social justice considerations.
- Development of technical basis for reconstruction of engineered and non-engineered buildings and community



# Breakout session #2

## Response 1

### Leaders

Cecilia McHugh, Tricia Wachtendorf

### Participants

Ozlem Ergun, Chen Li, David McEntire,  
Khalid Mosalam,

# Response to Research

- Goals: How to acquire and disseminate information in time of crisis? Create low cost low maintenance technology that can be rapidly implemented.
- Technology has to be good to be able to work with communities in Haiti and other locations and to develop research tools (i.e., cell phones).
- Low cost technology solutions: for example, scanners implemented in camps that can alter camp management for an effective solution. Research in these low cost technology can be used in response efforts.

# Response

- How does data acquisition for example in earth sciences helps in the reconstruction process. For example assessing seismic risk based on surveys and rapidly disseminated through the web.
- Cameras can be used in assessing in the transportation network roads, ports, airports.
- Working in deploying networks of sensors that can be prepared and applied rapidly. This would include satellites and airborne photos to quantify damage, collapse (degree of collapse), road blocks.
- How do you apply this technology to be more effective in our rapid response?

# Response as related to society

- Impact of interventions to the extent in which reduces and magnifies social vulnerability.
- Interaction between local sensors and global needs of the country.
- Improve or device avenues of communication between the ground needs and these new sources of information.

# **Breakout Session #2 – Response 2**

**Leaders:**

**Catherine Peters and Harvey Rhody**

**Participants:**

**Norma Alcantar, Sean Gulick, Jose Holguin-Veras,  
Scott Olson, John Yen**





# Discussion Context

-- How do we define what is meant by  
“RESPONSE”

-- What are the types of RESPONSE NEEDS

- Disaster Response – humanitarian -- what is the time frame? How do we define when this ends and when transition and recovery begin?
  - Immediate – first week: medical needs, search and rescue, immediate housing, building inspections, and immediate food and water, immediate electric power .... Stabilize
- Disaster response – research – immediate data collection
  - Geological
  - Structural and Infrastructure damage
  - Information and communication needs



# I. Research needs related to the humanitarian disaster response

- What is the “optimal” way for a network of aid efforts and organizations to work in concert. For example, how to influence donation patterns, such as unsolicited donation patterns?
  - Research needed:
    - data collection – supply chain, relief effectiveness.
    - Modeling: systems modeling: disaster response modeling. Build new knowledge about how post-disaster relief functions.
  - Identification of immediate resource requirements. FEMA has this for the U.S. How does this translate to an international context?
  - Need to study bureaucratic barriers to RAPID research response. Examples include:
    - Need for IRB certification for human interviews
    - Difficulties getting research equipment into Haiti
    - Getting samples out of Haiti

## **II. Research needs related to civil engineering in the context of earthquake hazards**

- Data collection for verification of modeling codes that predict infrastructure response to earthquake loads. In particular, the role of uncommon soil types – now much known about this. Also, there is much that can be learned from examining the structures that remained standing but were damaged. Also, once there is a hazard microzonation map, structural damage data serves to validate those predictions.
- Note – this activity serves two purposes ... can be used for the humanitarian need of structural safety assessment, for the immediate need of advising people which buildings are safe and not.

### **III. Research needs related to geosciences/ earthquake physics**

- The impact of this knowledge – better understanding of the physics of earthquakes and exacerbating and mitigating factors, and better prediction of future hazards
  - Research questions: Were there any surface ruptures, and what is the pattern of the rupture?.
  - Research question: Secondary effects? E.g. Landslides and tsunamis, liquefaction, lateral spreading.
  - Research needs: Documenting uplift and subsidence.
  - Research need: looking for an event signature – the record of this event in the sedimentary layer
- Data collection needs: onshore and offshore imaging and field observations and field sampling

## **IV. Research needs related to information and communication systems**

- What is the optimal information systems to get the information of needs/supplies to the right people in the right time frame?
- To what extent do these decisions have to be made on a centralized basis?
- How to information dissemination to decision-making, responders and the public?

# **TRANSITION AND RECOVERY I**

**Co-Leaders: N. Emel Ganapati, Stephanie Lansing**

**Participants: John Bevington, Roger Bilham, Louise Comfort, Ann Margaret Esnard, Robert Fleischman, James Kendra, Kevin Meehan, Mimi Sheller, Amenold Pierre, Anna Lang**



# Summary Discussion

- Sustainability (definition from Haitian perspective, sustainable/locally appropriate designs/processes for buildings, sanitation, health, educational systems, environment and infrastructure)
  - Impact of rebuilding on environmental resources
- Understanding, monitoring and evaluating existing organizational structures, coordination, and processes and how links can be created among existing and emergent networks
- Decentralization/deconcentration (assessment, facilitation, needs, infrastructure, cultural perception)
- Markers of speed and quality of recovery (e.g., education, mental health, defining the matrix for defining the end of displacement)
- Comparative studies of other countries/regions to develop sustainable recovery models that could be applicable to Haiti



# Summary Discussion

- Understanding community (rural and urban) participation/organizations
- Interdisciplinary approaches to monitoring migration, access to resources, and determining how links can be made between existing organizations
- Understanding cultural perceptions in building designs and sanitation
- Historical research (how international communities contributed to vulnerability and recovery efforts from past disasters)
- Recovery of vulnerable groups and inequalities
- New approaches to complexity, mobilities and emergent networks
- Legal context of land tenure – forced evictions
- Time-scale (again, better understanding of Haitian cultural contexts)





# Transition and Recovery

**Co-leaders:** Franco Montalto (Drexel), Guitele J Rahill  
(Arkansas State University)

**Participants:** Ayhan Irfanuoglu (Purdue), Rachel Davidson (Univ of Delaware), Liesel Ritchie (UC Boulder), Alka Sapat (FAU), Alexandros Taflanidis (Notre Dame)



## Summary Discussion: Transition and Recovery

▪ Engaging in research to inform / understand relationship between transition /recovery and the Haitian context

### ➤ **Barriers to and Facilitators of Transition and Recovery**

➤ Technical : Appropriate and efficient technology

➤ Logistical

➤ Historical factors

➤ Lack of Planning

➤ Social/ Cultural/ Political

### ➤ **Additional considerations**

➤ Acknowledging the continuum of basic and applied research and how what we are doing in Haiti fits on that.

➤ Researchers as Articulators/ Translators/ Disseminators of Research Findings to inform Recovery/ Transformation process

➤ Fostering Haitian Institutional (govt) support for research

➤ Development: Reduction of vulnerabilities

➤ Structural Concerns

➤ Links with Diaspora to Optimize Recovery/ transformation process in Haiti and ultimately in other contexts impacted by disaster



## Summary Discussion: Transition and Recovery

- Development of tools to conduct quick post disaster assessment/ evaluation that optimize sustainable long term recovery with reduced risk
- Identification of strategies for reinforcing/ strengthening/ salvaging structures by retrofitting- including development of building standards that mitigate damage and loss of property and life in future disasters
- Identification of locations/ materials, policy solutions for solid structures related to temporary shelters and long term housing, towards restoration of permanent housing
- How to incorporate identified transition challenges to re-housing (governance and coordination, logistics, assessment issues) into action that impact long term transition, and insuring that post recovery level is better than pre recovery conditions (outcomes):  
*Transformation vs recovery*
- Understanding the relationship between the development process and the recovery/ transformation of post earthquake Haiti
- Defining conceptual framework for understanding feedback loop between different development *processes and disaster cycle...contextualizing recovery* in time/ history
- Contextualizing recovery in terms of grassroots needs and expressed definition of recovery..linking technical issues to social issues

