

Transformation of Disaster Vulnerabilities in Recovery

Lessons from Nepal and the United States

Jiwnath Ghimire, PhD

Department of Community and Regional Planning

IOWA STATE UNIVERSITY

Outline

- > Disaster Recovery as an Opportunity
- > Research Questions and Methods
- > Case I: 2018 Nepal Earthquake Recovery – Tales of Two Integrated Settlements
- > Case II: Disaster Recovery Planning in Iowan Counties (Mississippi and Missouri Rivers)
- > Findings
- > Next Steps

Disaster Recovery Planning – A Window for Community Resilience Building

- **Disaster Recovery:** Learning from the past and choices for the future.
- **Recovery planning:** Speedy recovery, Effective resource use, and community resilience after recovery.
- **Pre-disaster recovery planning** – disaster management, organizational setups, roles and responsibilities, expected shocks, damage spectrums (restoration vs. redevelopment), and institutional learnings.

(Schwab, 2014, Koebele et al., 2020)



Post-Disaster Recovery – A Window for Community Resilience Building

- **Post-Disaster Recovery:** Reducing vulnerabilities and mitigating future disasters
- Reconstruction **standards and land use changes**
- **Short-term restorations and longer-term recovery** of essential services – housing, health, roads, communication, livelihoods and businesses, environmental services, and social services
- **Reducing social vulnerabilities** – ability to respond and recover from the hazard impacts

(Schwab, 2014, Cutter and Finch, 2008)



National Preparedness Goal

*Second Edition
September 2015*



Homeland
Security

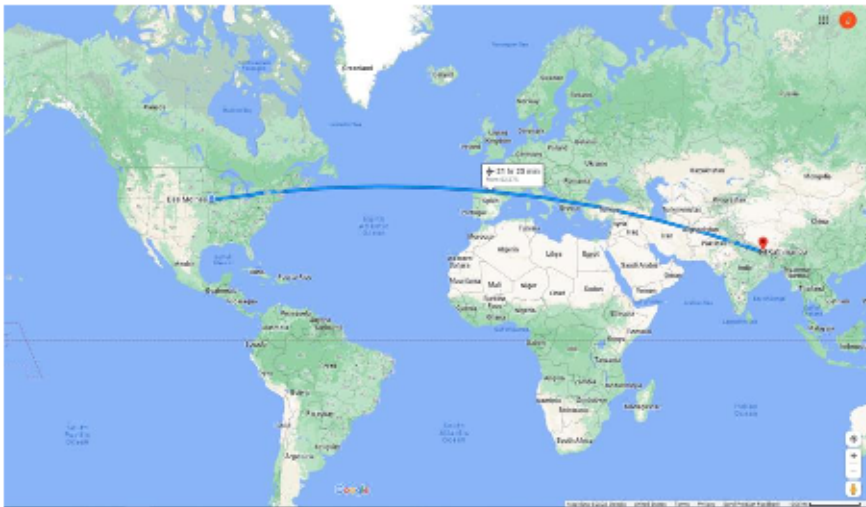
Research Questions

- How do the existing recovery planning practices impact disaster vulnerabilities across communities?
- To what extent does disaster recovery build community resilience in post-disaster scenarios?

Methods

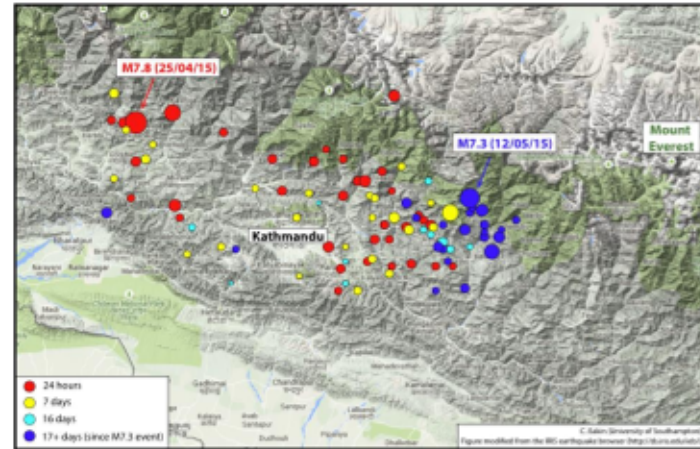
- **Interviews**
 - Nepal: Six residents of two integrated settlements
 - Iowa: Six county emergency coordinators and state planners
- **Publication reviews**
 - Nepal: News coverage on integrated settlements
 - Nepal and Iowa: Recovery reports and policy documents
- **Plan evaluation**
 - Iowa: Hazard mitigation plans of 16 counties along the Mississippi and Missouri rivers
 - Nepal: Directives on integrated settlements
- **Participant observations**
 - Nepal: Two integrated settlements

2015 Nepal Earthquake

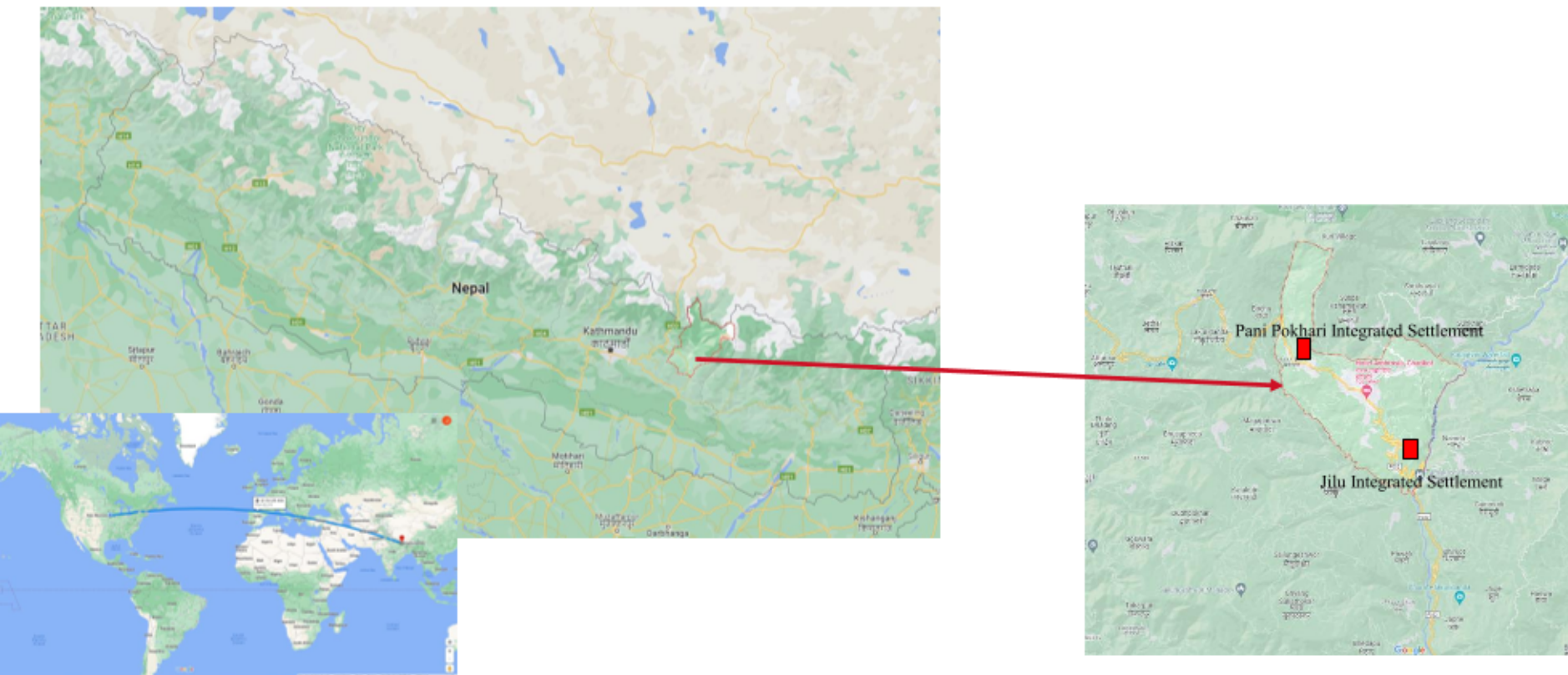


2015 Nepal Earthquake – Recovery Planning After the Devastation

- National, regional, and district EoCs and their empowerment
- Central body on disaster recovery – National Reconstruction Authority
- National Guidelines in DRR
- Central and District Coordination Committee for the Reconstruction and Recovery
- Coordination in Recovery Planning and Implementation – International NGOs, Local NGOs, Bilateral and Multilateral donors
- Governance mechanism to administer the recovery process
- Earthquake-resistant designs and moving settlements to the safer locations



Nepal – Study Area, Bhimeswor Municipality



2015 Nepal Earthquake Recovery– Integrated Settlements

- Moving vulnerable settlements to safer locations in the course of reconstruction
- There are 30 integrated settlements for the earthquake risk-prone communities
- Pre-planned disaster-safe locations and settlements with building codes and utilities included.



2015 Nepal Earthquake Recovery: Tales of Two Integrated Settlements in Dolakha District



Pani Pokhari – Thami Community

Jilu – Chaulagai Community



2015 Nepal Earthquake Recovery: Inside Pani Pokhari Integrated Settlement in Dolakha District



Reformation of Vulnerabilities in Recovery Process – Thami community

- Resident 1 - Panipokhari Integrated Settlement

“The Rs. 300 thousand (USD 2,500) was not sufficient. It was enough to buy cement, rods, and bricks. Money was not enough. I have an Rs. 650 thousand (USD 5,000) loan. There is an additional loan from other sources. It keeps me awake at night. I feel I am in a miserable situation.”

- Resident 2 - Panipokhari Integrated Settlement

“There is not [water] any water pipe. There is a tank constructed using urban development, but there is no pipe and finishing of the job. How can a 32-inch pipe provide sufficient water to the whole settlement? It is a difficult situation. The tank is half done without water and enough pipes. They did not use the right pipe as well.”

2015 Nepal Earthquake Recovery: Inside Jilu Integrated Settlement in Dolakha District



No Pre-disaster Vulnerabilities, No Vulnerabilities in Recovery Process – Brahmin Community

- Resident 1 - Jilu Integrated Settlement

*“The government told us to build our houses on flat land. We have been living in slope areas for generations with our farms and livestock. **It is hard to leave all that and move. It is painful.** But we do not have that problem. Our area is flat and has no risk of flood.”*

- Resident 2 - Jilu Integrated Settlement

*“We constructed the integrated settlement to seek each other’s help. It turned out that **it was an urbanist agenda.** We are regretting that we gave lands to construct this.”*

Iowa Recovery Planning – Mitigation Plan Reviews

- Plans reviews
 - 10 themes and 47 indicators of pre- and post-disaster recovery planning
- Interviews with emergency managers and recovery planners
 - State recovery planners
 - Five county emergency managers/planners
 - Focus:
 - Mitigation and recovery planning, experiences, and roles in county and state for disaster mitigation and recovery
 - Climate change impacts and future disasters
 - Challenges of recovery planning

Uniqueness of Iowa – Interviews

- Participation fatigue and Human resource challenges
- Reliance on social capital and self-help for response and recovery

“the people that I want them to participate are on **so many other committees**. There's not this vast volume of people anymore that used to volunteer in different areas. Now we have **one person that's on six committees**, and we even we even see that with emergency managers for our state association.

“so I help with a food pantry just so I have contact with the most **[vulnerable] people** because they're the ones that are going to end up reaching out to me for disaster assistance, more than somebody who's you know, has their insurance and all that so, **I mean, just those little areas to try to get involved with so that we have those connections pre-disaster so that post-disaster they know who I am and aren't worried about coming to talk to me.**”

Uniqueness of Iowa – Interviews

- Being rural and isolated adds another layer of challenge

“We don't have a single stoplight. We don't have a single fast food restaurant. So it is **very rural**. So **its neighbors relying on neighbors to help each other** and those people have multiple hats they wear.”

“...a lot of these County Emergency Managers You know, **some of them are part-time**. Some of them are doing 911 you know, dispatch stuff so they're not just the full-time emergency manager, right? So to add **another thing to their plate**, obviously, **there might be some resistance.**”

Uniqueness of Iowa – Interviews

- Experience-based recovery planning is the starting point for climate change
- Recovery planning is more reactive than proactive

“so I don't want that future forecast to be a barrier for people in recovery planning, but fortunately, we've had enough experience with disaster to know that it's serious and it's real and it's not going away. And so just trying to work with people to remember, like, you never know what's going to happen in the future.”

“I don't think that's something that [planning for climate change] they do. I think a lot of time it is reactive, unfortunately. And we see that for counties all over the state once they have a major disaster. Like I said with us for flooding. We've done flooding so much that they're it's a well oiled machine we know what to do. However, a tornado happens and hit the community and we are a mess because we don't know how to respond to that. I worry with the drought and the side that impacts of like a wildfire type situation occurring. We don't have the personnel, it's volunteer fire departments.”

Findings

- The **social, economic, and geographic vulnerabilities must be addressed** in the course of recovery planning to build community resilience
- Without planning attention, the **social and environmental injustices** from pre-disaster situations are carried out in the recovery projects
- Existing **hazard mitigation plans fall short in disaster recovery provisions**, especially in addressing the future threats of climate change.
- Recovery planning cannot be a **one-step process for the counties in Iowa**; it has to be broken down into smaller planning efforts over a longer time span due to planning capacity and logistic challenges across counties.

Next Steps

- Interview with county emergency management agencies
- Survey residents to understand the individual and household preferences of recovery planning and perceptions of climate change
- Extending the scope of study to other geographies, including counties in Iowa and FEMA Region 7.

Thank you!

Jiwnath Ghimire, PhD

jghimire@iastate.edu

(515)-294-4570

<https://www.design.iastate.edu/profiles/jghimire/>