Bridging gaps, saving lives:

Integrating communities' voices in advancing flood early warning system in developing countries

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1. BACKGROUND

- Despite recent advancements in global flood forecasting providing sufficient lead time, studies show that 89% of world's flood-exposed people live in low-and-middle income countries.
- Proposing practical preparatory and early actions is an effective way to bridge the gap between recent technological advancements and requirements of exposed populations

Preparatory actions are long term actions to improve response capacity

Early actions are immediate actions before flood event to minimize casualties and economic loss

Figure 1: Pillars of Early Warning System

2. DATA AND METHODS

- **Study Area**: West Rapti River basin in western Nepal
- Challenges associated with Flood Early Warning System (FEWS) implementation was identified using community surveys and key informant interviews
- Preparatory and early actions were proposed based on key informant interviews, exposure and impact mapping

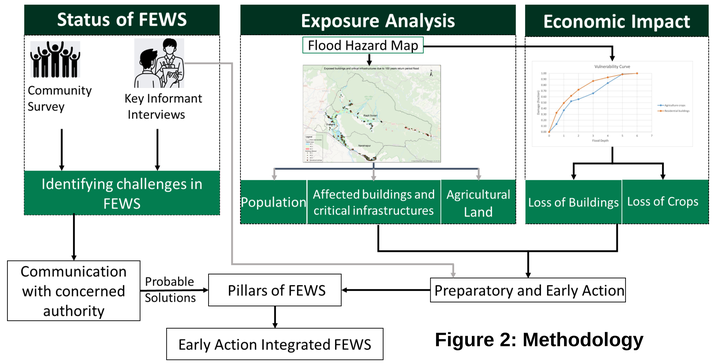


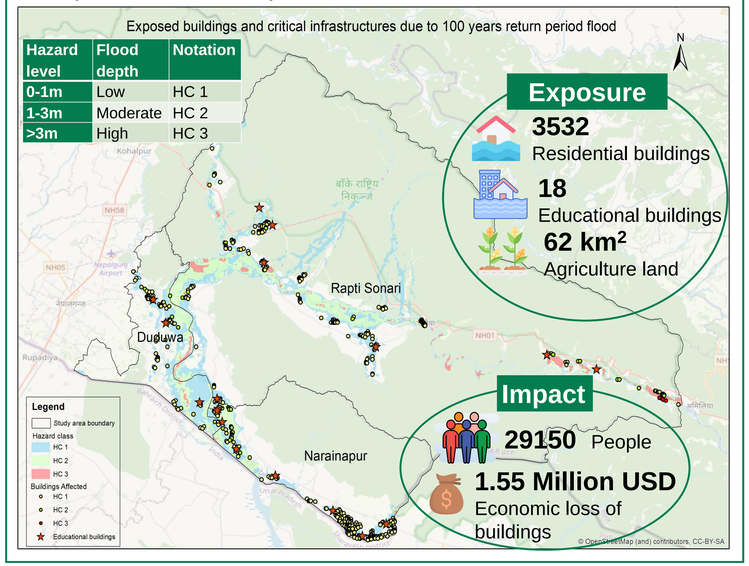
Figure 2: Methodology

4. PREPARATORY AND EARLY ACTIONS

Preparatory Actions	Reference Maps Used
Installation of community sirens	Population impact, hazard and exposed buildings
Identification of safe evacuation shelter and evacuation routes	Inundation boundary and hazard
Determination of plinth level height (10 years return period)	Hazard
Conduction of flood drills for people in high impact zone and in all educational buildings	Exposed residential and educational buildings, population impact
Provision of emergency rescue kits	Inundation boundary
Risk sensitive land-use planning	Inundation boundary
Allocating budget for preparedness and response	Population Impact, structure impact, agriculture impact
Allocating budget for impact-based compensation and insurance	Structure impact and agriculture impact
Identification of appropriate site for community buildings	Agriculture Impact
Early Actions	**Reference Maps Used**
Dissemination of early warning messages	Inundation boundary
Update vulnerability information	Hazard, population impact and exposed buildings
Rapid response teams in action	Hazard, exposed buildings and population impact
Early harvesting	Agriculture impact
Storage of crops in higher storey	Agriculture impact

3. FINDINGS

- Few identified challenges include 1) Communication bottlenecks in warning dissemination (due to low literacy, poor mobile reception) 2) restructuring of local government 3) limited capacity in monitoring and warning dissemination with sufficient response time.
- Exposure and impact maps help to identify risk hotspots to prioritize the respective actions.



5. CONCLUSION

- Integrating communities' perspectives and feedbacks are vital to implement all four pillars of FEWS (Figure 1)
- Combining community surveys, key informant interviews, and exposure and impact mapping allows identification of concrete preparatory and early actions to effectively reduce flood impacts.

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