

Strengthening Early Warning Systems for All:

Evidence and Lessons from Last-Mile Communities



Early warning systems save lives, but only when people act on warnings.

Drawing on [community-based studies](#) across 15 contexts worldwide, this research shows that even where early warnings exist, they often **fail to reach people or trigger action**. Focusing on last-mile communities — those who are geographically isolated, socially marginalized, or otherwise hard-to-reach — the report explains **why warnings break down** and how to **make them work for everyone**.

Barriers and Enablers across the Four EWS Pillars



<p>Low risk perception due to limited exposure to severe events or lack of involvement in risk knowledge activities</p> <p>Climate shifts undermining prior risk knowledge and traditional indicators</p>	 Disaster Risk Knowledge	<p>Participatory risk assessments that reflect lived experience and cultural risk perceptions</p> <p>Community engagement and training that build shared understanding of hazards and capacities</p>
<p>Data gaps and weak local forecasting capacity, including equipment, skills, coordination</p> <p>Technical or overly generic forecasts that are difficult to understand or use for decision-making</p>	 Monitoring & Forecasting	<p>Integrating Indigenous and scientific indicators to improve relevance and trust</p> <p>Localized, impact-based forecasts tailored to places and livelihoods</p>
<p>Late or unreliable delivery caused by weak infrastructure, poor coordination, or single-channel dependence</p> <p>Low trust in the source or messenger, with warnings dismissed as spam or misinformation when unfamiliar</p>	 Warning Dissemination & Communication	<p>Multi-channel, redundant communication using high- and low-tech methods, social networks, and community groups</p> <p>Clear, plain language messages in local languages and accessible formats</p>
<p>Economic precarity forces people to choose livelihoods over safety, leading many to disregard warnings</p> <p>Delayed warnings reduce the lead time needed to act, especially those with mobility or access constraints</p>	 Preparedness to Respond	<p>Warnings that include specific, context-appropriate action guidance so people know how to respond to hazards</p> <p>Access to support resources and services to enable people to act on warnings</p>

Core Recommendations for Effective EWS



Promote Inclusivity: Center real needs, capacities, and priorities in EWS design

- Engage marginalized groups as co-owners in EWS design, operation, and evaluation
- Build feedback mechanisms so community input drives improvements
- Embed inclusion in policy, governance, and sustained financing



Ensure Accessibility: Remove barriers to receiving and understanding warnings

- Use layered, redundant channels based on the local info landscape
- Apply universal design so messages are clear and consistent across formats
- Strengthen last-mile delivery through trained volunteers and trusted intermediaries



Enable Actionability: Make it possible to act on warnings in real-world conditions

- Provide warnings with clear, feasible protective actions – not just hazard description
- Link warnings to anticipatory action support so people have resources to act in time
- Invest in community-led preparedness education and planning

Read the
full report



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