WARNINGS

Community-based early warning systems

Key Overview

- Community-based early warning systems (CBEWS) bridge crucial gaps in providing early warning for all.
- CBEWS emphasise anticipatory action by empowering communities to monitor and prepare for risks, rather than respond to disasters.
- CBEWS require community participation and inclusion of marginalised groups.

State of the Art

Community-based early warning systems (CBEWS) provide community members with the information they need to assess the risk they are facing and make decisions to protect their lives and livelihoods [1,2,3,4]. They are distinct from national scale early warning systems in that they are developed and implemented at the community level. CBEWS can play a critical role in bridging the gaps in coverage of national early warning systems [2]. The reasons for these gaps in national early warning systems are often also reasons for these communities being especially vulnerable to the impacts of hazards. Insufficient infrastructure and resources in comparison with needs affects the coverage of weather and climate observations and the ability to disseminate urgent information, so CBEWS are essential for achieving "early warning for all" [5].

CBEWS emphasise community empowerment and ownership of the system at every stage, collaborating with community members to assess the hazards they face, the factors that affect their vulnerability, and the capacities that are in place to deal with them, and empowering communities to prepare for hazards as well as respond to them [4,5,6]. This ownership is integral to the long-term sustainability of CBEWS, which means that the system can adapt to changes over time [1].

Another key gap that CBEWS address is between receiving a warning and acting on it. By bringing communities into the centre of the system, emphasising the development of warnings that are useful and accessible, and identifying ways for people to respond to warnings that are feasible and relevant, CBEWS enable anticipatory action at the community level [2,3].

Core Needs

For CBEWS to sustainably deliver effective early warnings, they must be integrated into existing systems in the community, formal and informal, that are already working to identify risks and/or share information, such as local committees or cooperatives. This also refers to national or sub-national early warning systems, disaster risk management strategies, and communications infrastructure that may already be in place, so that the CBEWS can align with and complement such activities. The first step in developing a CBEWS is therefore to gain an understanding of who has roles in the early warning system and build partnerships with them [1].

Second, for CBEWS to be genuinely participatory and community-based, they need to be inclusive of the diverse people and groups that make up communities, and the different needs, perspectives, and priorities that exist, and sometimes compete, in communities. CBEWS need to specifically and actively include people who are affected by social inequalities and marginalization which make them more vulnerable to hazards [1,2,3,4].

Case Study: Community Early Warning for Floods in Nepal

Regular flooding in Nepal causes significant loss of live, livelihoods, and property every year. Traditionally, people visually monitored the river, informally communicated updates to the community, and decided to evacuate when they perceived the risk was too high to stay. This traditional system provided very short lead times to take action, with evacuation often taking place when flood waters had already entered the settlement, and there were no systematic preparedness plans or activities to support decision-making during a crisis period.

Practical Action has been working in partnership with communities such as the Bhandara village of Chitwan to develop the CBEWS since 2002 [4]. The early warning system has evolved over time from manual watch-and-warn towers with lights and sirens to community-based disaster relief and disaster management committees coordinating with the National Department of Hydrology and Meteorology to automatically monitor upstream river levels, raise awareness of flood risk and plan how to respond to warnings during local events, and set up a range of dissemination channels to communicate warning information [4,7,8]. The community owns the local system and is actively engaged, coordinating with the upstream gauge reader and sharing information about risk and appropriate actions to take, so that people can protect themselves and their assets before flood waters reach them.

Parbati Gurung, Chisapani community flood gauge reader, monitors the level of the river upstream and alerts the community when the water reaches a dangerous height. Community members downstream also call her for further information (Photo by Practical Action).

References

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