Strengthening Community-based Early Warning Systems

through a multi-sectoral platform

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Communities in Dire Dawa Administration, Eastern Ethiopia, have reduced their vulnerability to weather-related hazards following the integration of indigenous and conventional knowledge on Early Warning Systems through a joint multi-sectoral platform. About 13,000 households living upstream and downstream DireDawa have developed appropriate coping mechanisms for the frequent and cyclic flooding by establishing a community-based weather forecasting capacity.

Flash floods have been identified as a major hazard in Duchato and Goro Butigi riverbanks in DireDawa city because of its location in an escarpment downstream. In the past, floods occurred at DireDawa during the rainy seasons in the upstream regions. The floods often caught the DireDawa residents unprepared due to the absence of effective Early Warning Systems. Consequently, these floods resulted in loss of human lives, livestock deaths and severe destruction of property and community assets. During the 2006 floods in the area, about 250 people died, 240 reportedly disappeared and 10,000 were displaced.

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Following the catastrophic disaster, the Ethiopian government constructed embankments along the river to reduce future flood loss. In 2009 through Cordaid support, the Community Managed Disaster Risk Reduction (CMDRR) Association was established by 800 volunteer community members from four downstream flood-prone villages of Bargelle, GTZ, Gende-Ada and Koka, within the Dire Dawa city. Each of the four villages elected 9 members to form the CMDRR Association with a total of 36 committee members.

In 2013, the Partners for Resilience (PFR) programme also facilitated the local communities to establish Community Managed Disaster Risk Reduction (CMDRR) committees in the upstream divisions of Ejeaneni, Adiga Felema and Lege Bira with a total of 6,400 beneficiaries. These community-led initiatives compliment the Ethiopian government's major investments in flood control.

Indigenous Early Warning Signals for flood hazards

- Cloud cover: very dense and dark upstream
- The direction of the stars
- The moon bound by ring-type fog
- Noises produced by livestock and wild animals: hyenas
- Behaviour of insects concentrated in large groups producing continuous sounds: beetles, wasps, crickets, etc.
- Smell of soil predicts the intensity of the floods

Based on the Community Risk Assessment conducted in the project site, the upstream and downstream CMDRR Committees implemented Early Warning Systems (EWS). The communities began by strengthening the indigenous early warning systems and also developing locally appropriate communication strategies to disseminate weather and climate information. These included using sirens, hand held megaphones and mobile phones.

During floods, the CMDRR committees from the Oromia region upstream notified their downstream counterpart committees in DireDawa city by mobile phone using designated emergency phone numbers. Then the downstream DireDawa committees used sirens and megaphones to relay the emergency weather and climate information and also to prompt responsive action by the most-at-risk community members.

As an innovation, the local communities combined the indigenous early warning signals with the conventional Early Warning Systems primarily disseminated by government agencies, non-governmental and private-sector organizations, by establishing a joint multi-sectoral platform for sharing climate information for Early Warning.

As a key milestone, each of the eight organizations involved in the joint platform, signed a Memorandum of Understanding (MoU) pledging to collaborate and share weather and climate information through the joint multi-sectoral platform. Through this partnership with PFR, seven Community Information Centres were established within the target communities to facilitate grassroots-level information sharing and cross learning on weather forecasting and alerting capacity. The centres were equipped with sirens, a hand held megaphone and mobile phones by the project.

Partners for Resilience, through Cordaid also strengthened the CMDRR committees by facilitating their registration as legal entities. The programme conducted trainings on Early Warning Systems for local community members. Other key contributions by PfR were the construction of flood diversion channels, development of water harvesting ponds, construction of different physical soil and water conservation activities and the establishment of community managed tree and fruit nursery sites and the distribution of different seedlings.

In 2013-2014, there were recurrent floods in DireDawa. With the knowledge of the incoming floods, the communities made elaborate plans to change the flood hazard into an opportunity. The upstream communities diverted the floodwaters to their farm lands. Therefore no human casualties or loss of property was recorded. The flood hazard had instead been transformed into an economic opportunity for increasing crop production. This confirmed that the flood control measures undertaken by multi-sectoral organizations had realized positive benefits to the local communities.

Major accomplishments of the joint platform for Early Warning

1. Active involvement of local communities in decision-making on disaster-preparedness and responsive actions
2. Creating a conductive learning forum for the upstream and downstream communities to effectively respond to flash floods and weather and climate information such as: escaping from the river banks, where the local markets are located to higher grounds
3. Fostering inter-community relations thus creating social cohesion and mutual co-operation towards saving human lives, livestock and other community assets
4. Significantly reducing the effects of weather-related hazards, especially destruction from floods
5. Joint problem-solving initiatives for emergency responses during floods and other hazards.
6. Adoption of mobile phone technology for rapid information dissemination to complement the sirens and hand-held megaphones, already in use.

Overall, through community knowledge and locally appropriate communication strategies for dissemination of weather and climate information, the Dire Dawa residents have established appropriate coping mechanisms and no longer rely on external assistance to reduce flood loss in their locality.

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