

Practical Action works with communities in Nepal, Bangladesh, Zimbabwe and Sri Lanka to reduce people's vulnerability to disaster. Our approach aims to build on the skills, experience and knowledge of the communities that live with the threat of disaster and is guided by the community's needs and requirements. Climate change has the potential to alter the nature of a disaster, often increasing their frequency, impact, or unpredictability. Although communities have developed ways in order to survive in disaster prone areas, the changed threat means that communities at risk now need new information about the risks they face to inform their response.

In Nepal, Practical Action has been working since 2002 with many communities in the Terai plains, the most flood prone area of the country, to develop Early Warning Systems (EWS). Rapid river level rises in 2007 and 2008 proved the effectiveness of EWS as communities engaged in the system were prepared, and Practical Action has developed an understanding of good practices for communicating risk from ongoing learning.

Appropriate EWS start with the end-users. They engage communities in the information about flood risk so they can act early enough to protect themselves and their assets. Accessibility, relevance and reliability are key to ensuring that information can be used by a community, but the project also demonstrated that community participation in the flood information, rather than reaction to warnings, is essential. After Practical Action facilitated exposure visits for community members to the upstream gauge station, community members decided that they could easily interpret the information to be relevant to their context downstream. The gauge readers also visited the communities and it was agreed that they would supply all historical and 'real' time information that the stakeholders said they needed to judge the indicators of flood risk relevant to their context. The information made available was demand not supply driven.

Exposure visits establish the personal connections and social networks that are vital to ensuring that the availability of flood information. Communication technologies are important but only compliment these relationships. Previously to the project the information from the gauge stations to Kathmandu and even India, but not to the downstream communities.



So, too, were the technologies for spreading information about a known threat within the community. Samples of potential sirens were made available to the communities to trial and test their appropriateness and to become familiar with the options. Their requirements were for a robust, reliable and cheap siren, and a preference was made for a non-electric device as the 2007 floods showed that electricity supply could not be guaranteed during a flood. After experimentation, the community opted to order 43 hand-held sirens. This proved a good example of where the end-users instructed the technology and not vice-versa, an important step to ensure community ownership and sustainability of the project.

When extreme rainfall forced the river levels of the West Rapti to rise alarmingly on 27th and 28th June 2008, all involved in the EWS were prepared. Within 20 minutes of the waters reaching the 'trigger' level, the gauge reader had informed a member of the Project Implementation Committee, the district police, the main radio station, and a community member in Betahani who was surprised as there were no signs downstream yet that a flood was likely. All committed to passing on the information. The communities downstream spent the day monitoring the river and, in the evening, community leaders sounded the sirens as the river swelled further. A full evacuation proved a good decision making and information sharing system had been set up.

Investment in EWS is cost effective, particularly where there are limited resources. It is estimated that the entire recurrent costs for 2009, per watershed warning system, will be less than 20,000 rupee (£157/\$249). Set up costs are also low. Using local resources where available reduces costs but also helps to ensure community ownership. The project has demonstrated that with minimum inputs, awareness of the flood can be achieved many hours prior, even on major river systems where flow times can be great.

As they the community members had participated at all stages of the project, they and the gauge reading staff had sufficient links and communication channels for the EWS to run effectively and independent of Practical Action's role by September 2008. Building the capacity of stakeholders involved in communicating risk is, therefore, key to communicating risk and the longevity of the systems for communicating risk. In Bangladesh, Practical Action's DRR programme has engaged in extensive training on the issues of climate change and risk. In total, nearly five hundred people in the Gaibandha district have benefitted from training through the scheme that helps stakeholders recognise the risks to community member and how to address these issues. The training for the ward disaster risk reduction committee developed the skills of 180 members to help people before, during, and after a flood. 180 participants from local NGOs have taken part in training to spread the message of climate change and DRR and our school based programme reached 117 teachers and students.

Flood risk information needs to be accessible to all vulnerable to a disaster. This often means overcoming dialect and illiteracy issues. These wall paintings, portraying disaster preparedness using three local languages and locally relevant images, were part of a new awareness campaign in Nepal that included the dispersal of 6000 calendars with communication options for flood information, radio 'jingles'



combining on-air discussions focussed specifically on issue of floods, and also song competitions, street theatre and school art and essay competitions.

Multi-platform methods of communicating risk are in use in many countries Practical Action works in. They are a useful technique when a specific threat, such as flooding, is known, but it is more difficult to communicate climate uncertainty even with these means. Better climate forecasting information is needed in order for it to portray the wider issues of climate threats.



Street drama performance about flood risk in the Chitwan district of Nepal

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