

Landslide early warning in Costa Rica

Three days of torrential tropical rains during late August 2002 swelled Costa Rica's rivers to bursting point. Landslides swept through the communities of Orosi de Cartago, killing at least seven people, destroying 17 houses and damaging aqueducts, telephone lines and power lines. Hundreds had to be evacuated. The Costa Rican Red Cross deployed 120 people in the search and rescue operation, which was made extremely dangerous because of constant, ongoing landslides in the zone affected.

Following the disaster, the International Federation, supported by the Regional Delegation in Central America, obtained funding from the British government to implement an early warning system in the event of future landslides. The overall objective was to 'promote the development of community organizational and planning processes for the identification of risks and resources, in order to prepare for and respond to emergency situations'.

The intervention

The Costa Rican Red Cross initiated a community training programme in disaster preparedness and prevention, community first aid and psychological support. The idea of the early warning system was put to the community on the understanding that the community itself would operate and follow through with this system. Building materials were distributed to support structures such as retaining walls and for repairing drinking-water pipes damaged in the landslide.

Meanwhile, the local authorities established an emergency committee to coordinate disaster response and rehabilitation activities. This committee convened coordination meetings and followed up on activities in the affected communities. Radio equipment was installed in four centres: the Orosi local emergency committee, a nearby Red Cross base, the national meteorological institute office and the Rio Macho drinking water river authority. A warning siren was installed atop the Costa Rican electricity institute's communications tower.

Activities were coordinated with local institutions such as the Catholic church, the Costa Rican institute of electricity, the community development association, the chamber of tourism and regional private and state schools, in order to disseminate information about the



Torrential rains cause landslides and flooding, affecting communities in Costa Rica.

risk reduction measures being undertaken. The Red Cross committees within the area provided monitoring and follow-up during the implementation of the early warning system. Their unique access to affected communities and institutions involved in the early warning system made this possible.

The willingness of the communities to participate in training sessions was very positive. Many female heads of households, men and children took part. Disaster awareness materials were circulated to teachers in the local schools. A training process in the communities was begun and continues. Results to date are outlined below.

Positive impacts

- 200 people have been trained in disaster preparedness, 100 people have been trained in community first aid and 30 community members have received basic training as radio operators.
- Nine months after the disaster, there was another landslide with the same characteristics as that of August 2002. The change in the communities' ability to respond was very clear from the way people reacted, their readiness to follow the directions of Red Cross staff and other institutions on site, and the greater unity and desire to work as a single team. Institutional coordination was much more effective,



Weeks of unseasonable torrential rains provoked serious flooding and landslides.

since all the participants in the control room knew one another, helping decision-taking.

- One year on from the start of the intervention, the community has shown greater unity and desire to work for the integral development of the region.
- The project led to a change in the National Society's response to emergencies, whereby traditional relief transforms into mitigation activities as part of the rehabilitation phase.
- Follow-up activities during the implementation of the early warning system allowed local Red Cross branches to develop a closer relationship with target communities.

This project has succeeded in giving greater support and credibility to the institutional policies on disaster prevention and preparedness, contained in the 2002-2006 Strategic Development Plan.

Lessons learned

- The auxiliary Red Cross committees of the relevant sector, as well local institutions, should be involved in all aspects of implementing, monitoring and follow-up of community projects.
- The community must operate the early warning system as part of its everyday life, implementing changes and activating other control mechanisms that are considered necessary for the integral development of the area.
- An inventory should be drawn up of the resources and capacities available.
- For an early warning system to be sustainable, it is essential for government, communities, Red Cross and other actors to collaborate and forge working partnerships.

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