



Sri Lanka

Community-based tsunami early warning system in Peraliya, Sir Lanka

Community Tsunami Early Warning Centre (CTEC)



Photo by CTEC

Abstract

As part of establishing a centralized early warning system in Sri Lanka, several initiatives have been launched at the national level in Sri Lanka. While recognizing the fact that the missing link in issuing the early warning is between the decentralized government system and the community, initiatives such as the Community Tsunami Early Warning Centre (CTEC) play a major role in filling the gaps. The community survey on the effectiveness of the CTEC system suggests that there is a need for a community-based system to properly disseminate the alert, warning and evacuation messages of tsunami threats to the Peraliya community. The results of the survey emphasize the need for the CTEC system to continue not only as a multi-hazard early warning dissemination system, but as an integrated component of the multi-purpose entity for community development. The systems such as CTEC should be registered by the Disaster Management Center in each district and integrated with other related community infrastructures to ensure its sustainability.

Goals and Objectives

CTEC was established to provide information about tsunamis and other natural hazards to the public. The idea is to create a disaster preparedness culture in Sri Lanka at the community level to be achieved through community participation. Special emphasis is laid on the protection of vulnerable groups.

A community-based early warning center also helps to prevent adverse consequences during an emergency, such as providing security to property that cannot be taken along during evacuation.

The Initiative

In order to establish a centralized early warning system in Sri Lanka, several initiatives have been launched at national level. To ensure that the warnings reach the population community-based early warning systems need to be created in order to close the gap between national and local level. Community-based systems need to receive the information from the National Early Warning Centre and to disseminate the appropriate information and early warning alarms to the communities.

One of the community-based systems that exists in Sri Lanka is the Community Tsunami Early Warning Centre (CTEC) at Peraliya on the south-west coast of Sri Lanka. Peraliya was one of the most devastated areas by the December 2004 tsunami. The village drew media attention in the aftermath of the tsunami, because of the train that was toppled over by the giant waves, claiming over 2000 deaths including many villagers.

CTEC currently covers about five villages directly through its public address system. In addition, it has extended its services to the whole of the Galle District through its Community Focal Point (CFP) network. It conducts community awareness and educational programs to equip the public with knowledge and skills regarding emergency preparedness. Training programs and training material have been developed for these community awareness programs. CTEC has established volunteer teams in line with its CFP. The volunteers of these teams have been trained with regard to the action to be taken in an emergency situation. In addition, they are equipped with important skills such as basic life support, first aid and fire preparedness. Evacuation areas have been identified and tsunami signs have been established as a part of the community contingency plan.

CTEC has Information and Communications Technology facilities to link with both national and international warning agencies and media. It is open 24 hours 7 days a week. Youth selected from the community continuously monitor the system for emergency information and warnings. Institutional operational procedures have been developed that are to be followed in an emergency.

Though initially established to prepare the community against tsunamis, the CTEC activities have been expanded to cover a broader range of disasters. CTEC focuses on the needs of vulnerable groups in the society such as children, elderly, women or handicapped individuals. CTEC promotes the active participation of the communities it serves in all stages of its activities from planning through evaluation and monitoring.

CTEC was initiated by a group of local and foreign volunteers with the active participation of the affected community. It is now completely managed by the volunteer force of the local community of Peraliya with the support from interested stakeholders.

During the 2007 Tsunami Alert the CTEC played a major role in informing people using its loud speaker and mobile speaker (siren) system, to direct people towards evacuation places. A problem was that people having the number of the meteorology department in Colombo, tended to call there, which resulted in a congestions and failure of the system leading to problems in the operation of the organization. This emphasizes the need for community-based early warning systems, as the government cannot focus on individual enquiries at times of real emergency.

The CTEC system has a community database, which is updated daily and is displayed to the community. It has the following components:

Seismic activity recording: Every 15 minutes, the duty officer looks at websites and records in the center logbook the earthquakes with a magnitude more than 5 on the Richter scale. All earthquakes that occur in the Indian Ocean Region are extracted every 24 hours and are displayed in the CTEC notice board.



Weather Information: The daily weather report issued by the Meteorology Department is read and recorded by the Duty officer. It is displayed on the CTEC notice board so that anybody interested can obtain the weather information.

Community Inquiries: Inquiries made by community members are recorded in the incoming call book. Date, time, name of the person who calls, location, contact telephone number, and the inquiry are recorded, as well as the action taken afterwards. This helps to identify areas where “rumors” are generated. The center officers can then reach out to these areas and educate people about their fears.

Disaster Information: The duty officer records disaster related local and foreign news in the Log Book. In addition, important and relevant newspaper articles with regard to natural hazards are collected.

The Good Practice

The CTEC initiative is intended to support and facilitate the government's efforts in DRM at the grass root level. CTEC does not issue any warning on its own; instead it provides the technological and human communication network needed to disseminate such warnings issued by the government to the communities. Based on the criteria developed for good practices in Community Based Disaster Risk Management (CBDRM) guidelines by the Asian Disaster Preparedness Center (ADPC), a community early warning system has been established with the specific aim of contributing to a safer community.

1. The CTEC initiative is a purely community-based initiative, founded after the 2004 tsunami, that later extended its relationship to the local government. At first, the focus of CTEC was only on tsunamis, as a national early warning system for tsunamis did not yet exist, and was later extended to multiple hazards.
2. The initiative is based on community knowledge about hazards. It is an opportunity to make people aware of other hazards, which can be done with community participation and through disseminating information via participatory tools.
3. CTEC has been carrying out awareness programs to make people understand tsunami early warning messages through the community focal points of CTEC in Peraliya.
4. CTEC made different channels available for the Peraliya community to receive tsunami early warning.

An evaluation study disclosed that 80% of the people of the three communities covered under the CTEC system know about CTEC and benefited from its service in the past.



Lessons Learned

1. The link to the district disaster management focal center and the national level early warning authority is still missing. It should be established for the better operation of the last mile hazard early warning.

Standard systems and procedures should be developed to make the message consistent from all directions. In order to do this, the government focal point for the tsunami early warning should develop standard operating procedures in disseminating early warning messages for all disseminators in a consistent manner, so that confusion over the early warning message from different sources (e.g. radio, TV, mobile SMSs) can be avoided.

2. Community-based early warning centers should be given authority to disseminate early warnings to a broader geographical area. To date CTEC only disseminate tsunami early warnings to the Peraliya community.
3. There are several concerns and questions on how to make these community driven initiatives sustainable in order to be replicated to other parts of the country. Relevant key questions are for example: Is it necessary to observe the seismic activities at the community level through this type of center?; Despite the fact that the news channels broadcast the weather information obtained from the meteorology department several times a day, do people use CTEC to obtain this information?

Besides these specific questions, there are other general concerns about this setup. Is the system sustainable? What is the community coverage of this system, if we make it a community-based early warning initiative with a multi-hazard approach? How to keep the trained volunteers to do the job continuously?

4. The costs for well/functioning early warning systems are lower than disaster response and rehabilitation costs. To ensure the cost efficiency and sustainability for less frequent high impact disasters multi-hazard systems need to be designed.

In the case of CTEC, different possible options were explored, recognizing the need for a community-based system: multi-hazard approach; use of existing entities for early warning purposes such as community centers and schools; integrating the system in daily life by e.g. using loudspeakers for religious sermons on a daily basis in order to ensure its functionality.

Potential for Replication

The following recommendations can be drawn for any community-based tsunami early warning system in other parts of coastal areas of the country in the future.

- a) Using the existing systems: The existing system should be utilized in order to guarantee cost-effectiveness and sustainability. Proper operation in times of an emergency is also of great importance. To achieve this, the partnership of all stakeholders should be coordinated by the relevant government authority at a national level. The government in this case provides the legal authority; the private sector can contribute with resources and infrastructure, whereas civil society can help to maintain grass root linkages to provide a social infrastructure and motivation.
- b) Using schools as community-based early warning centers: The system can be best carried out using schools involving teachers and children in community-based early warning initiatives. This can be applied for different types of hazards in the communities, as almost all communities in Sri Lanka have at least one secondary high level school, which has a laboratory and computer center facilities. Those can be utilized to create a community-based disaster early warning system, which would be even more reliable if volunteer students are trained to work with trained staff, such as school teachers, and with other outside representatives of other relevant authorities. The government introduced disaster management as a subject to advanced vocational training for teachers and to the school curriculum after the 2004 tsunami at all the schools starting from the first grade. However, the operation of an early warning center needs to be 24 hours 7 days a week. All the proposed activities should be coordinated by the district disaster management center.
- c) Multi-hazard early warning: Multi-hazard early warning systems are the best option for community-based initiatives in terms of sustainability, utility and cost effectiveness of the community-based early warning systems.
- d) The Disaster Management Centre should register all the community-based systems through its district disaster management centers. This registration will help to keep track of community-based initiatives, thus provide a legal authority to disseminate tsunami warnings within the geographical area of their coverage. It will also help to avoid overlapping of initiative by different stakeholders.



Photo by CTEC

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