

### **Box 1. Recommendations for the Design of an Effective All-Hazard National Early Warning System**

- Public warning is a system, not a technology. The identification, detection and risk assessment of a hazard, the accurate identification of the vulnerability of a population at risk and finally the communication of information to the vulnerable population about the threat in sufficient time and clarity so that they take action to avert negative consequences constitute the system of public warning. Warning allows people to act in order to prevent hazards from becoming disasters. Effective public warning saves lives, reduces economic loss, reduces trauma and disruption in society and instills confidence and a sense of security in the public. It is an important component of the foundation of a sound economy.
- Effective warning is just one of the critical parts of a comprehensive risk management system that includes mitigation, preparedness, response and recovery. Warning is a crucial component of the overall risk management system that failed in the 2004 Indian Ocean tsunami; it needs urgent strengthening for the country to benefit from the proposed improvements in the regional hazard detection systems and to minimize losses from local hazards.
- Linkages to local, regional and international hazard detection systems are extremely important for an effective national warning system. For localized hazards such as floods and landslides, seamless connections must exist between the hazard detection systems and the Early Warning System. People are not only the recipients of warning messages from experts, they are also valuable sources of hazard detection and monitoring information. An early warning system without education, planning and rapid action is sub-optimal.
- It is the core business of government to protect its citizens to the best of its ability. However, in many developing countries, government action is constrained by numerous competing claims on scarce resources and by capacity and organizational-culture problems. Government cannot do it alone; all sectors of society must contribute.
- For example, the private sector offers complementary resources and necessary infrastructure (e.g., telecommunications and broadcasting networks) that are needed for disseminating warnings; civil society provides social infrastructure at the grassroots. The use of already existing capacities is not only cost-effective, but ensures the continuity and maintenance of the system. The cost to the government of implementing a nation-wide warning system is significantly less when other stakeholders contribute to the costs for maintenance, management and service. It is also important that there be adequate oversight of the performance of the vital functions associated with an early warning system; this can only be provided when multiple players are involved.
- Sri Lanka should adopt an 'all-hazards' approach, wherein the detection component may differ for each kind of hazard (flood, cyclone, fire, earthquake, epidemic, etc.) and may be provided by different entities with subject expertise, but the warning system is capable of carrying warnings for all kinds of hazards. An important element of this is an agreed format of warning messages for all hazards types, as given in the international standard Common Alerting Protocol (CAP). A common system capable of carrying warning for all types of hazards is not only a superior use of resources, but will also counter a common problem of lack of maintenance of systems that are rarely used. A common warning system is also important from the demand side, enhancing the ease of understanding of warning messages by the recipient.

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- The telecommunications and electronic broadcasting industries play crucial roles in the effective dissemination of warnings. Action to ensure optimal contributions from the telecommunications network of networks should be ensured through the collective efforts of the operators, facilitated by the regulator. Government should also work collaboratively with the electronic broadcasting industry to ensure effective contributions to early warning at national and local levels.
- An early warning system is a pure public good that will be undersupplied by the market. The responsibility for its supply thus falls on government. In the event government undertakes this task in the aftermath of the tsunami, it should adopt a design that provides the necessary conditions for high performance required of a National Early Warning System. These conditions include provisions for the deployment of proper expertise and equipment, adequate levels of funding, insulation from day-to-day political interference, transparency and accountability. The Public Utilities Commission of Sri Lanka Act, No. 35 of 2002 provides a good starting point.
- If the government does not wish to create a new agency focused solely on warning, it may wish to consolidate the hazard-warning experts of the existing hazard detection and monitoring organizations along with disaster communication experts in a new entity. Because the current organizations have several other functions and have personnel configurations that may not be optimal for a modern, performance-oriented agency, it would be advisable to build the new entity as a greenfield organization with a clear focus.
- A variant of the option of government supply meshes government supply of hazard information and funding with actual operation by a community based organization, as in Bangladesh. The success of this public-private solution rests on the community based entity being perceived as credible and capable of issuing authentic warnings, based on a network of trust established over time at the community level.
- Hazard warnings are often based on incomplete information and judgment. In many societies, the final decisions on warnings and especially on evacuations are taken by political authorities, on the basis of independent and professional advice of experts. In Mauritius, the professional heading the warning agency makes the final call. Different options need to be considered taking into account Sri Lanka's political and administrative environment.
- In the event government supply of warnings, directly or through a public-private partnership, proves problematic, the alternative is private sector supply, where the warning is bundled with a private good. However, unlike government supply which lends itself readily to an all-hazards approach, non-governmental supply of warnings is likely to be partial in nature. Some forms of non-governmental supply of warnings, undertaken in good faith, may have to be indemnified by government.
- The solution that is appropriate and feasible for Sri Lanka is likely to be a hybrid, ideally with government leadership on the establishment of an effective National Early Warning System and complementary private sector and civil society initiatives that capitalize on their respective comparative advantages. Prompt action to establish an effective National Early Warning System is the best memorial we can build to the 40,000 valuable lives that were swept away for the lack of a few minutes of warning and a little awareness.

*Source:* Modified from Executive Summary of report: "National Early Warning System: Sri Lanka—A Participatory Concept Paper for the Design of an Effective All-Hazard Public Warning System" at: <http://www.lirneasia.net/projects/national-early-warning-system>.