



## Remove regulatory barriers

Some regulatory barriers to effective early warning systems and emergency response remain, despite the great progress made in these aspects since the Indian Ocean tsunami. We identified:

- the need for further standardization of communications in emergency situations—such as a global standard for cell broadcast technologies, for example;
- the need to develop standards applicable to existing and future systems for delivery of early warnings or alerts;
- the need for inter-operability between public networks and networks dedicated to emergency communications; and
- a need for priority access by emergency services personnel to communications.

Furthermore, governments must extend the regulatory framework to new and emerging technologies. Regulation is lagging behind innovation. In particular:

- the international community needs to create a legal framework enabling the use of unmanned aerial vehicles, which hold great promise for collecting information for use by humanitarian agencies but are currently unable to be deployed due to legal uncertainties.

## Put more resources into local preparedness

People-centeredness has been one of the themes of this report. The people affected by an emergency are in the best position to know what is happening and what they need.

Preparedness requires long-term investment by humanitarian organizations, including investment in public education and capacity building in local media.

Information provision should be recognized as a standard part of both preparedness and aid delivery, and might include:

- preparation of off-the-shelf material agreed on between humanitarian and aid agencies (what to do in an earthquake, basic sanitation advice, for example);
- training humanitarian agencies in communication skills, including receiving and using feedback from communities; and
- the inclusion of a wind-up radio in aid packages.

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Information needs to be collected and deployed to be effective. Often this will be done by official agencies, but their responsibilities may be overlapping and uncoordinated.

Preparedness also requires the international humanitarian community to be able to act themselves in a coordinated way on the information and analysis enabled by these emerging systems.

Agencies should share best practices with each other. Agencies developing tools for use in disaster preparedness and emergency relief should also include consideration of their potential for communities' post-disaster or post-conflict needs, to leverage the investment of resources as effectively as possible.

Governments—especially in developing countries where access is not ubiquitous—also need to consider enhanced access to communications and investment in infrastructure, among all the competing demands for resources.

## Leverage new media and crowdsourcing

Some of the most promising applications of new technology in emergencies use social media, often through crowdsourced applications.

As this report has shown, the issue of authentication is a key barrier to overcome. The development of methods and applications for verification of crowdsourced information should be a priority. The humanitarian community can support the development of innovative platforms that address the issue of verification as well as provision of information by users.

At the same time, it is important to ensure that communications technologies can offer their users a sufficient degree of anonymity and protection. This will depend on technological solutions but also, importantly, the legal framework and public debate about the risks as well as benefits of anonymity.