KOBE REPORT draft
Report of Session 2.7, Thematic Cluster 2

People Centered Early Warning Systems

1. Summary of the session's presentations and discussions

To be effective, early warning systems must be embedded in, understandable by and relevant to the communities which they serve.   This was, in essence, the core message of the session on People Centered Early Warning Systems. Whatever the technology of warning (and simple as well as high technology systems can be equally effective) systems depend for their effectiveness on a combination of factors that ensure they are functioning when needed and that warnings are understood, timely, viewed as legitimate and ultimately acted upon by the diverse array of individuals at risk in any emergency. Developing systems that are people-centered is central to achieving this goal.

The session revolved around a series of case presentations regarding the effectiveness of early warning systems in a diverse array of situations including volcanic eruptions, floods, wildland fires, tsunamis and locusts. It was intended to build on initiatives such as the Early Warning - II conference held in Bonn during 2003 and support the newly initiated international **Platform for the Promotion of Early Warning**.

What is a 'people-centered' early warning system? While never explicitly defined, central elements identified in cases presented during the thematic session included:

1. Incorporation of a combination of 'bottom-up' and 'top-down' elements. Community involvement from the bottom up is often essential in order to identify needs, patterns of vulnerability and to develop the legitimacy required to ensure that warnings are acted upon. At the same time, information on regional weather conditions or other factors relating to a specific risk need to flow down from regional and global monitoring systems. Consequently, warning systems are rarely effective unless supported at higher levels by appropriate scientific and analytical capacity and policy frameworks. As one case on wildland fire illustrated, advanced monitoring systems are in place globally getting satellite products to local communities if often impossible. Advanced systems are very difficult to access. Systems are needed that local communities can access and use. In some situations, such as the Mekong, the weakest link is at an intermediate level where the limitations key actors, such as water managers, can influence the effectiveness of warning systems.

2. Utilization of awareness techniques that populations can relate to on a visceral level whatever their level of formal education. In the lead-up to the Mt. Pinatubo eruption, experts monitoring the volcano encountered huge skepticism regarding the probability and effects of such an event. Even within the scientific community eruptions of that scale had never been observed except in the geological record. There was no living experience. In this case, videos of other (albeit much smaller) eruptions proved invaluable in convincing officials and local populations of the seriousness of the threat. This enabled evacuations that saved at least 20,000 lives.

3. Involvement, where possible, of local communities in the process of data collection, monitoring and warning. In many situations, as cases from Central America, Haiti, Africa and other regions demonstrated, data collection by local people using readily available technologies can provide information that is of critical use in early warning.   Simple technologies, such as rainfall and river gauges coupled with equally simple rules of thumb

(when the gauge hits 'this' level, flooding can be expected) can often enable communities to monitor threats and provide effective warnings.

4. Embedding warning functions within systems that serve multiple purposes. In Central America, the use of radio systems initially developed to provide flood warnings has expanded to serve basic communication functions. The radios are in daily use and central to the life of the communities they serve. As a result they are maintained and available when warning needs arise. They have become a living part of the communities they serve. This link to regular functions that ensure systems are maintained is particularly important where, as in the case of tsunamis, events are infrequent. It is important to recognize that multi-functionality does not always have to imply regular use by the communities served…linking warning functions to systems that serve scientific or any other on-going use can serve the same purpose.

5. Building awareness into the structure of communities: Without awareness people will not respond and risk cannot be reduced. Education, particularly if it can be promoted as a core part of the curriculum in schools, training and a wide variety of outreach activities can serve this purpose.

The above elements of people-centered warning were illustrated though detailed case study presentations spanning a range of locations from North America, Central America, Africa, the Mekong Basin, the Philippines and Haiti and an equally broad range of disaster situations. A deliberate choice was made in developing the panel to focus on disasters such as volcanic eruptions, locusts, wildland fires and tsunamis rather than the dominant water and weather disaster events. This was done in order to clearly illustrate the roles early warning can play and the social or 'people-centered' elements that contribute to their effectiveness. Furthermore, because of the diverse situations illustrated in the case studies, the common insights reflect elements that are central to the development of effective warning systems across a broad range of social as well as risk conditions.

Following the main presentations, discussions with audience members brought out key experiences. The case of new legislation in South Africa provided a tangible example of mechanisms by which people-centered elements can be institutionalized. Techniques for sending text messages to targeted areas using existing cellular phone systems without overloading the network were also presented. This is a key example of ways to build early warning capacity into existing multifunction communication systems and link high level information directly to the tools people use in their daily lives.

The session concluded with statements from the panel regarding a strong belief in the necessity of community participation. Both bottom up and top down methods needed. Systematic approaches for institutionalizing risk management are also essential. Finally there is a great need for creativity.

2. Primary Issues

Primary issues raised during the session included:

- Sustainability. It is difficult to sustain institutions and technologies dealing with infrequent crises;
- Point of authority. In crises there is need for a single authoritative voice – but the legitimacy of that voice is often an issue. People centered systems may be essential but how can residents be involved without conflicting messages. Similarly, the news media provides an essential medium for communication but sensationalism and conflicting messages are often problems.
- Institutional frameworks. Wide differences in information collection systems across and within countries combined with the resistance of national level institutions and governments to approaches that work with communities can constrain the development of effective people-based warning systems. Institutional frameworks that enable top down and bottom up approaches to work together are essential.
- False alarms. The risk of false alarms is always present and scientists and officials must be willing to take it.
- The need for a better mix of high tech and local resources.

- <u>The need to create a sense of urgency</u> to get governments, budgets and other attention to early warning issues;
- <u>The absence of process indicators</u> – how can we monitor the effectiveness of EWS?

3. Suggested targets and indicators to measure accomplishments

Targets that were suggested during the session included:

1. Introduction of benchmarking, there is a need to develop some kind of framework at all levels so that we can implement and monitor
2. Expansion of people-centered approaches to other hazards
3. Development of a coordinated approach to take stock of what we already have. Lessons are dispersed, etc…the bottleneck seems to be on the implementation side.
4. Working with governments to identify gaps and help with more specific issues and solutions;
5. Need to produce guidelines (listing of the things that need to be taken into account)

Specific indicators to measure accomplishments were not discussed

4. Name, affiliation and contact of person filling in the form

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