Disasters: Preparing for the Unpredictable

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Introduction — definitions

What is a disaster? There is no universally accepted definition of the term. The World Health Organization defines it as “a situation that implies unforeseen, serious and immediate threats to public health.” From the public health standpoint, therefore, an earthquake or avalanche occurring in a remote, uninhabited part of the world would not constitute a disaster since no human casualties are involved.

A United Nations document defines it more broadly as “an event or series of events which give rise to casualties and/or damage or loss of property, infrastructure, essential services, or means of livelihood on a scale that is beyond the normal capacity of the affected communities to cope with unaided.” The emphasis here is not only on the destructive consequences, but the impact of such severity or swiftness that it overwhelms the usual coping mechanisms for dealing with emergencies.

America’s New York State has adopted a definition which emphasizes the same essential points but makes it a point to differentiate natural from man-made disasters: “A disaster is a natural or man-made event of severity and magnitude that normally results in death, injury, and property damage that cannot be managed through the routine procedures and resources of government.”
The human factor
While it would be fair to blame Nature for earthquakes, volcanoes and tsunamis, the war in Iraq and 9/11 are clearly the results of human actions. The same goes for the unfolding tragedy in Darfur, Sudan.

The devastation and human suffering wrought by Hurricane Katrina, was the product not just of nature’s fury, but of gross mismanagement, neglect and ineptitude as well. By the same token, how well the world survives the next influenza pandemic is a function not only of the virulence of the causative agent, but the effectiveness of our global pandemic preparedness plans.

The point is, a complex mix of natural and human factors is often involved. This means that a good deal of the damage due to disasters is foreseeable and preventable, or at least, can potentially be mitigated against.

Disaster cycle
Disasters can be analyzed (and hence planned for) according to three distinct phases (see Fig. 1):

Figure 1: Phases in a disaster: The Disaster Cycle

Fig. 1. The disaster cycle.
The response (or emergency relief) phase begins the moment a disaster strikes. The details will vary according to the actual nature of the disaster (e.g. whether fire, flood or building collapse, etc. is involved), but the key activities during this phase are generic and invariably include emergency rescue, organization of the disaster site, triage and mass casualty management, and activation of additional resources as necessary. It is important in this phase to make a quick initial assessment to identify specific problems for prioritized action: What must be done to ensure survival? How can this assistance — which includes the basic life-sustaining necessities of food, water, shelter and sanitation for displaced populations — be delivered? What are the immediate target groups? Is there access and logistical support? To what extent can the affected population help themselves? How much assistance can the host government provide? Is international aid needed, and how will they be coordinated?

Next, during the recovery (or reconstruction and rehabilitation) phase the focus shifts to reconstruction of infrastructure and the rebuilding of lives and livelihoods. The aim is to return life to normal as quickly as possible. Priorities during this phase include the reconstruction of safe homes, schools, community centers, and health facilities; the restoration of safe water supply, sanitation, and electricity; and the physical rehabilitation of the disabled and provision of ongoing healthcare and psychosocial support to those affected. Jobs need to be generated. Skills need to re-trained. The economy needs to be revitalized. Coordinating the work of different stakeholders — government, non-government organizations and the private sector — will be a major challenge. Community participation is absolutely crucial for developing self-reliance and sustainability. Whereas the response phase is usually measured in terms of weeks, the recovery phase may take months and years, depending on the nature and extent of the disaster.

Finally, coming full circle is the pre-disaster planning (or mitigation and preparedness) phase. It would be too late to think about what needs to be done during the response phase. Disaster plans must therefore be drawn up, disseminated and tested well in advance. Personnel must be trained and the appropriate equipment pre-positioned. It is also during this phase that preventive measures are taken to reduce vulnerability. For example, houses in earthquake-prone regions should be built to acceptable standards.

In the 2001 Gujarat earthquake (7.9 Richter scale) in India, poor masonry standards resulted in 378,286 houses being destroyed and 968,879 damaged — leaving 20,086 dead and 166,000 injured. Even in technologically advanced Japan during the 1995 Kobe earthquake (7.2 Richter scale), the majority of the 6,434 deaths occurred in the suburbs where most of the older traditional houses had heavy tiled roofs weighing around 2 tons — intended to resist the frequent typhoons that plagued Kobe, but were only held up by a light wood support frame. When the wood supports gave way, the roof crushed the unreinforced walls and floors in a “pancake” collapse. Newer homes have reinforced walls and lighter roofs to avoid this.

Conclusion
Although disasters are almost by definition unpredictable, the priorities during each phase of the disaster cycle can be anticipated and planned for accordingly. The priorities are: risk reduction during the planning phase; the saving of lives and limbs during the response phase; and physical, social, and economic reconstruction during the recovery phase. It is possible and wise to plan for foreseeable or probable events even in the face of uncertainty. The greater the preparedness and planning, the more effective the execution of relief operations and the faster the speed of recovery will be. And because there is no telling when disaster will strike, it is important to be prepared at all times.