ox 5.3 First aid: humanity in action

ı a local school in Posoltega, Nicaragua, nildren remember with fear the morning /hen a landslide from the nearby volcano onsumed much of their village. Some 1,400 eople lost their lives in that one disaster, trig- ered by Hurricane Mitch's torrential rains. ince then, the Red Cross has been targeting chools with first-aid training. After just two- ays' training for six teachers and 70 children, 'osoltega's school was ready to carry out an earthquake response simulation exercise. The olde children gave first-aid care to 12 chil- lren with differing injuries and then evacuat- d them. At the end of the event, the children elt proud of their skills and better prepared to deal with future health- or life-threatening ituations.

Posoltega's landslide was exceptionally devastating. But first aid is relevant not only or the big, once-in-a-lifetime disasters – it is equally important in dealing with everyday problems and hazards. Dolisie is a city of 70,000 in the southern part of conflict-torn People's Republic of Congo. Retraining of Red Cross first aiders formed a key part of the relief and reconstruction effort. These volun- teers have since been involved in disease pre- vention, sanitation and hygiene campaigns. Recently they were a valuable trained resource in assisting the many victims of a serious railway crash. Equally, Red Cross Red Crescent teams are mobilized to provide first aid during pilgrimages (e.g., Mecca, Saudi Arabia), sports events (such as the football World Cup in France), festivals (e.g., summer of music, Argentina), street demonstrations (e.g., Philippines) and so on. Teams are also mobilized daily to provide first-aid posts for small community events and for training activities.

Whether during a major public disaster or a small private event, injured people often feel too overwhelmed to cope. There may be a time lag between the injury and the arrival of professional help – a period during which people on the spot have to take action alone. Whether they are community members or Red Cross Red Crescent staff and volunteers, they need to be prepared for the worst. So it is essential to develop the individual capacity of every person to help protect and save lives through first aid. According to the Armenian Red Cross's first-aid national coordinator, "These actions of normal people in excep- tional circumstances are possible because they get the confidence and skills to act on a daily basis through first-aid training and services."

The efforts of Red Cross and Red Crescent societies to promote and disseminate first aid represents one of their major activities. Their first-aid programmes are tailored to account for communities' specific needs and capaci- ties. Results are even better when first-aid training includes preventive measures. Training and mobilizing communities and vol- unteers through first-aid activities has two out- comes. Firstly, by reducing the impact of daily crises, first aid can help promote the sustain- able development of the community. Secondly, it can prevent and alleviate the suffering caused by more high-visibility disasters. First aid is humanity in action. And it is disaster preparedness in its most versatile and funda- mental form. ■

Preparing for earthquakes

Mitigating earthquake risk by enforcing building codes and retrofitting lifeline infrastructure will take time, money and political will. It is a long-term strategy. But what if catastrophe strikes before enforcement takes effect, or before the 50-year design-life of poorly constructed buildings expires? National governments, municipal authorities and exposed communities can all take action now to prepare for the worst. Lives can be saved if all those at risk understand the quickest and most effective ways to respond to disaster (see Box 5.1).

There are promising signs of progress in disaster preparedness. Since Turkey's devastating Marmara quakes in 1999, new crisis management centres have been established in Istanbul and Ankara. Both are impressive installations, fully equipped and ready to deal with the next large-scale disasters whatever they may be. In the case of a serious Istanbul earthquake, a direct electromagnetic connection would shut down gas and electricity distribution instantly.

Then, so the plan goes, high-level representatives of all the services involved would gather at the centre: military, municipality, departments of public works and health, administrations of 32 subdistricts, and the Turkish Red Crescent. Army helicopters would take off to assess damage and start ferrying the wounded to hospital.

Istanbul has been carefully mapped by geographic information systems and the detail, street by street, practically house by house, is impressive – alternative routes for emergency vehicles, space for a million tents, even emergency graveyards. The assumption is that the two bridges across the Bosphorus would hold. These are vital, but in case there are problems with access roads, the government could commandeer all the boats in harbours and marinas, including 2,000 yachts.

How well all these excellent plans can function, if necessary, is not known at the moment. A recent simulation exercise scared everyone involved. The death and injury figures were horrific, and those responsible have returned to their drawing boards to do some revision.

Define and decentralize disaster roles

A key priority in preparing for disaster is planning. That means deciding on the most effective strategy to pursue when disaster hits. Within that strategy, the roles and responsibilities of different agencies must be defined. Otherwise, the chaos of disaster will create a chaotic response.

Experience from recent European earthquakes testifies to this. The free-for-all nightmare was abundantly clear in the 1999 Turkish quakes, nowhere more so than in the small town of Kaynasli, 100 kilometres east of Istanbul, the epicentre of the second

one. Two years on, some of its citizens undertook an evaluation project and their report, *We survived the earthquake,* is a recapitulation of what has been learned, much of it applicable to larger cities.

Some of its most original thinking concerns the role of non-governmental organizations (NGOs), whose numbers and range of concerns have shot up in Turkey in recent years. The *We survived* group has thought hard, and with some bitterness, about the 2,000 NGOs which poured in after the earthquake. Some, of course, were useful. But others are described as "charlatans". The report suggests the establishment of a register of genuine NGOs. According to Turkish law on disasters, NGOs can claim reimbursement from the government for all relief expenditure, explaining why much more money is spent on relief than on preparedness. The Kaynasli group suspects it is also an unfortunate motivation for some NGOs who "come sweeping in like vultures".

The question of whose responsibility it is to prepare for and respond to disasters isn't always easily answered. There are governments that preclude a proper delegation of duties. The Stability Pact's DPPI risk analysis finds that in south-eastern Europe, the operational plans and management structure that accompany them are often too centralized and difficult to implement on a local basis at the disaster site. "Highly centralized systems of governmental authority and allocation of resources often create delays and add layers of bureaucracy, compounding problems of an already difficult emergency response situation," it comments. Countries should critically review if and how decentralization would benefit their operations.

Disturbingly, the DPPI analysis adds that, although most of the states which its teams visited possess some form of national disaster management plan, few appear to be comprehensive.

"They do not define clear roles for individual organizations," the report says. Nor do they provide "an adequate base for mutual support from others within the nation or external support from neighbouring nations". According to the analysis, "In almost every country visited, the Red Cross or the Red Crescent society proved to be a strong, well-organized capability that was known and trusted by both the public and the government. In several cases they provided the only real pre-disaster planning, organization and response resource."

National Red Cross and Red Crescent Societies, however, should act as *auxiliaries* to government rather than instead of government. "It is imperative that the Red Cross or Red Crescent role in a national disaster plan is clearly defined, as the roles of government agencies and NGOs should be," maintains Sune Follin. "Where this has not been the case, there has been calamity." If the situation demands it, National Societies

can in turn fall back on regional and international Red Cross Red Crescent capacities. But training teams at municipal and local levels to respond to disaster is the most effective way to save lives.

Local emergency response saves lives

Whenever there is a serious earthquake, especially in a city, international teams fly to the rescue, often with heavy, expensive equipment and teams of search dogs. Serious controversy now surrounds these high-profile interventions. Does it make sense for outsiders to conduct search and rescue after earthquakes? Oktay Erguner, director of Turkey's national crisis management centre, points out that it is rare for international teams to arrive on the site of an earthquake quickly enough to be really effective. After a couple of days, survivors are found only in exceptional cases.

Of course, no effort must be spared to save any life. But disaster experts are questioning the sense of sending teams to locations when a critical time lapse is inevitable. It makes good television, but wouldn't the money and effort be better spent training local people in earthquake zones in simple emergency response? According to Erguner, at least 50,000 people were found alive under collapsed buildings after the Marmara earthquakes. Neighbours and local people rescued 98 per cent of these. Outside professionals rescued just 350. So decentralizing disaster preparedness and response resources to municipal and local levels will bring the greatest benefits (see Box 5.2).

However, local emergency response often depends on volunteers – who must maintain their skills and commitment in between disasters. Bureaucracy and boredom both conspire to undermine their effectiveness. The key question facing the Red Cross Red Crescent, and other organizations dependent on volunteers, is not merely how do you prepare for the inevitable, but how do you keep your people motivated? "A major challenge is keeping them warm," says Sune Follin. "It's all very well preparing. It is easy to raise initial interest, particularly like now in Romania or Albania where people are well aware a catastrophe could be around the next corner. But where there can be quarter or half a century between major earthquakes, interest can wane. Half the people you train may be dead of natural causes by the time the big one hits."

Follin questions whether training Red Cross Red Crescent volunteers in specialist urban activities such as search and rescue is wise, if the professional skills and alertness which must be maintained are rarely called upon. Nor, he argues, is it making the most of crucial human resources. "Training people to be multi-purpose, as indispensable in dealing with traffic accidents as they are in mountain rescue or earthquakes, makes far greater sense," he maintains.

Box 5.4 Countering the risks of a Kathmandu quake

The scenario is frightening. In 1934, over 16,000 people died in Nepal's Kathmandu valley during the Great Bihar earthquake, which measured 8.4 on the Richter scale. If a similar quake struck today, it would leave around 40,000 people dead and another 95,000 injured. Between 600,000-900,000 would be rendered homeless. More than 60 per cent of the valley's buildings would be destroyed.

Estimates suggest that 95 per cent of water pipes, and half the pumping stations and treatment plants would be seriously affected for several months. All electricity stations, nearly 40 per cent of electricity lines and around 60 per cent of telephone lines would be out of order for up to a month. Roads and bridges would be severely damaged, isolating Kathmandu's international airport. Consequently the arrival of international relief assistance would be seriously hampered.

"This is not merely sensationalism. The devastating impact of the recent Gujarat earthquake in India has confirmed that these estimates are not merely academic," warns Abod Mani Dixit, general secretary of the National Society for Earthquake Technology-Nepal (NSET). For Dixit, a geologist by training, the quest to reduce seismic risks began when a schoolchild asked him about the consequences of a quake for the Kathmandu valley. That was in 1992. Since then, NSET has brought numerous international agencies, the Nepal government and civil society organizations together to create a long-term disaster action plan to reduce earthquake risks in the Kathmandu valley. The plan was formulated through a series of workshops, conferences and, unusually, regular public hearings.

Nepal is situated in the seismically active Himalayan mountain belt. More than 1,000 tremors ranging from 2 to 5 on the Richter scale rock the mountain kingdom every year. Worse still, the Kathmandu valley is actually a lake basin consisting of soft sediments susceptible to liquefaction. And the valley's "basin effect" amplifies seismic waves, increasing their destructive potential. Studies conducted by the UN for 21 highly vulnerable cities around the world list Kathmandu as the city at greatest risk.

Dixit's risk reduction strategy combines both disaster mitigation measures (e.g., strengthening buildings) and preparedness measures (such as disaster awareness and training). "We are following a two-pronged approach, preparing to lessen the impact of the impending disaster and to prepare the community's capacity to cope and fight in the aftermath of the disaster," he says.

After a series of workshops, NSET began assessing schools in the valley to determine the extent of vulnerability, the techniques to be used in strengthening buildings and the costs involved. Based on this assessment, NSET has to date structurally reinforced nearly a dozen school buildings to make them earthquake-resistant. To enhance disaster preparedness, NSET has ensured that each school prepares an emergency plan with duties and responsibilities assigned to staff members. Earthquake risk reduction concepts have been woven into the school curriculum. Regular "duck and cover" and emergency drills are conducted with students and teachers, periodically monitored by the relevant authorities. Through

schoolchildren, the principles of earthquake preparedness also reach parents.

Hospitals face enormous pressure from the large numbers likely to be injured during a seismic disaster. Yet many of Kathmandu's hospital buildings could themselves collapse in the event of a major earthquake. NSET, in collaboration with the World Health Organization (WHO), has extended its programme to improve the seismic resistance of hospital buildings. On the basis of NSET's assessment, a specialist engineer from Ecuador was invited to visit 15 hospitals and recommend structural improvements. WHO will contribute towards the cost of the changes. Meanwhile, 20 one-day seminars are planned to train 400 key staff members from major hospital emergency wards in disaster logistics, triage technique and emergency medicine.

Dixit says that the school and hospital projects have created a much wider awareness of the issues related to earthquake risk in the valley. Kathmandu residents are now seeking NSET's guidance in reconstructing their homes to withstand seismic shocks. There has been growing interest from the government, universities and civil society to improve the risk management capacities of public utilities and emergency services. Since the Gujarat earthquake, NSET has organized 50 training sessions in disaster preparedness for the police, army, embassies and a score of other crucial agencies. And the Nepal Red Cross Society is planning to bring its emergency response expertise to the initiative.

To help people understand the threat they are faced with, NSET disseminates information through a series of simple, illustrated publications which detail likely scenarios one day, one week, one month and one year after disaster strikes. Such "software" measures have greatly helped spread the risk reduction message throughout the valley. The exemplary work undertaken by Dixit and his team has been used as a model by the UN in nine other cities around the world.

Meanwhile, the UN's own disaster management team (UNDMT) is actively developing its readiness to confront a major earthquake. Emergency planning is critical given the fact that Kathmandu is the main centre for all the health and utility services in the area. If the city takes a direct hit, the possibility of immediate relief coming from remote mountain villages on the valley rim is very remote. So the UN's contingency plans account for providing, within 24 hours, initial survival assistance in the form of food aid, health care, water and shelter for 200,000 people for a week. This could extend to providing relief for up to 500,000 people for a month.

The message that disaster preparedness is the key to survival in any eventuality is engraved on a unique monument to the 1934 earthquake that stands in the heart of the Nepalese capital. Kathmandu is perhaps the only city in the world with a statue that forewarns society to be prepared for natural disasters And rightly so. ■

His argument is backed up by the fact that, as needs have increased around the world, organizations dependent on voluntary work have seen volunteer numbers decrease. It isn't enough to train people. They must be well managed and they must put their training to good use in order to stay motivated. Without motivation, volunteers will melt away.

In Slovenia's national protection and rescue system, the Red Cross has been tasked with providing basic assistance to help the population survive a catastrophe. Red Cross emergency response units have been established in Ljubljana, the capital, and two other towns, ready for deployment within a few hours of a natural or man-made disaster. The units will back up the medical services and provide food, drinking water, care and shelter for the most vulnerable, such as women with children, pregnant women, the disabled and the elderly.

Slovenia's emergency response units are also prepared for an earthquake. Last year in an exercise, civil defence chiefs requested their immediate deployment after an imaginary quake left 474 people dead and more than 5,000 injured near Ljubljana. But for the volunteers, earthquakes are just one of a range of disasters in which they could intervene. Others include floods, landslides, dam bursts, unexploded ordnance, transport of hazardous material, industrial and nuclear accidents. There is no waiting for the big one here; volunteers' multi-purpose skills are constantly in demand.

Like the Slovenes, the Romanian Red Cross prioritizes preparedness for a range of disasters. It has trained more than 4,000 volunteers for 278 intervention teams which can be called upon at any time for any kind of disaster. Floods are an annual occurrence, as in 2000 when the Tisza River and its tributaries burst their banks in the north-west, overwhelming close to 15,000 people in one of the poorest corners of the country. The Red Cross emerged as the primary partner of government in delivering assistance.

Perhaps the most versatile of disaster preparedness skills is first-aid training, in which Red Cross Red Crescent societies specialize. Volunteers put their first-aid training to use all over the world, not only during disasters but at a range of diverse events (see Box 5.3).

Converting ideas into action

Keeping volunteers warm is one thing. Keeping politicians and governments warm is another. "We are the most popular people in the world after an earthquake," says a leading European seismologist. "Politicians are all over us. They ask how they can ensure such a tragedy never happens again. What will it cost? What can they do for us? But then it tails off, and that is one of our major problems. You need an earthquake every five years to keep politicians interested."

The recipe for reducing risks from earthquakes, and from a range of other natural disasters, is nothing new. The Stability Pact's DPPI assessment places building codes atop its list of factors considered vital for the reduction of seismic vulnerability. Other factors include public awareness; enforcement of appropriate land-use guidelines; popu-

response procedures. "In most cases," it reports, "nations possess considerable scientific capability to identify, assess and delineate high-risk areas, and design appropriate national codes and regulations. What they lack are the administrative instruments to implement and enforce effective programmes exploiting this scientific insight."

So, are national governments shirking their responsibilities to ensure safer environments for their people? Are there more proactive ways of converting the lessons of the past into the achievements of the present – *before* the next disaster strikes?

How countries respond to earthquakes, of course, only reflects their approach to wider risk reduction, and in south-eastern Europe, says the assessment, there is a considerable range. "Some are quite sophisticated and have well-developed systems of preparedness and prevention that seem pragmatic and sustainable. They appear to anticipate problems and reflect good risk assessment and planning methods. Others appear to be in a purely reactive mode waiting for something to happen, hedging on necessary political or financial investments, simply playing the percentage game and hoping that disasters might not occur."

The tide, however, would appear to be turning, and the DPPI assessment detects growing recognition that disaster prevention and emergency response must be a priority function of governments. But there is a long way to go. Sune Follin refers to a disconcerting trend in some countries that simply passing national disaster laws is considered a sufficient response. "What is missing all too frequently is enforcement, or the resources it takes," says Follin. But there are others like Albania where the government is more forceful, he says: "People there understand that laws are meaningless until they are backed up by aggressive enforcement."

Albanian legislation introduced in 1998 has tightened high-rise construction and any building of more than eight storeys requires the approval of the national seismological institute. The modification of ground-floor dwellings in apartment buildings for commercial purposes must have the approval of a government-mandated engineer to ensure reinforcement is unaffected. In the past, structures have allegedly been weakened by, for example, the need to create space in shops or restaurants. Without the approval, municipalities will not consider an application. Other legislation has sought to sharpen inspection.

Public awareness promotes culture of prevention

Political imperatives to act can be created, and public opinion and media coverage are powerful incentives. During a European Community (EC) workshop on earthquake risk in 2000, Commissioner Wallstrom argued that "as news arrives almost instantaneously at everyone's home, public opinion is requesting a better and safer European

environment". The workshop cited "lack of public awareness" as a key factor in increasing the vulnerability of modern cities to earthquake disasters. Humanitarian organizations and NGOS can play a key role in promoting a culture of risk reduction and prevention through advocacy campaigns targeted at both decision-makers and exposed communities (see Box 5.4).

In central and south-eastern Europe, the International Federation is urging National Red Cross and Red Crescent Societies to see the media as partners in disaster mitigation and preparedness. Their role could be to contribute towards public awareness of dangers and how to respond to them. Or it could be to advocate for changes in government policy. This means fostering strategic links between humanitarian organizations and local and international media, the development of dialogue with publishers, editors, programme makers and correspondents, and the co-opting of local journalists into working groups on risk reduction.

"Working with the media isn't only about ensuring profile for your organization. It is part of how we can change things for the better," argues Follin. "What the media wants is a story. How the community can ensure 1,650 people need not die, and 10,000 people need not be injured the next time an earthquake hits Bucharest, is a great story. The dialogue we seek is a little more nuanced than that, of course. It is about us providing insight and opportunity, and the media fulfilling its responsibility to the community. The bottom line is public awareness and momentum."

More than two years after the Marmara earthquakes in Turkey, hardly a day goes by without the Turkish media carrying a story related to earthquakes. Whipping up hysteria has become a favourite pastime of some parts of the popular press. Others, such as Istanbul's private Open Radio – favoured by students and the intellectual elite – shoulder responsibility and regularly produce thoughtful programmes devoted to the subject, with invited experts and air time for the public to express their concerns. They realize how thin the line is between building public awareness and preparedness and feeding anxiety by, for example, focusing on how many houses would collapse. In such quarters, strong allies can be found. Others need converting.

Regional cooperation raises standards

Partnerships to reduce disaster risk can transcend borders. The severity of earthquakes, the likelihood that the coping capacity of any one nation will be overwhelmed, the sudden and urgent need for external assistance: these are powerful arguments for neighbours to help one another.

Even politics and traditional tensions can make way for cooperation in time of disaster. Following the Marmara earthquakes, Greece, with whom the Turks have some-

times difficult relations, offered immediate assistance. This year, the Greek foreign minister George Papandreou once again responded. "We express our solidarity toward the troubled people and government of Turkey who have again been struck hard by another earthquake," he said.

Such developments interest the Stability Pact, and on more than one level. Where nations share risks and vulnerabilities, the foundations for sustained cooperation in disaster mitigation and preparedness can be found. The identification of such risks was the rationale for the DPPI regional assessment. How does a nation weigh the risk of a disaster that may occur only once or twice a century against annual or frequent catastrophes? Where should it place emphasis? Seen against the full range of natural disaster risks faced by a region, options become clearer.

South-eastern Europe has most of the hazards imaginable – floods, forest fires, earthquakes, recurrent landslides, droughts, storms and a number of man-made threats. The assessment has sought not only to establish the common risks, but to determine how vulnerable to them each nation is, the level of public awareness, the availability of means to communicate the risk, and the political and administrative environment in which risks are dealt with. Insight into these, it says, will help it decide where to concentrate efforts, and direct maximum resources to improving mitigation, preparedness and response. The perspective will also better define how nations can assist each other.

The DPPI team is encouraged by what it describes as "opportunities for more adequate multilateral coordination" and mutual assistance between neighbours. While every country has weaknesses, they also have strengths that are the basis for regional cooperation. National disaster management plans, the assessment concludes, should ultimately reflect an agreed-upon regional standard that would facilitate collaboration.

It is hard to think of a region where this philosophy makes greater sense than the highly seismic Balkans. IZIIS estimates that average losses due to recent earthquakes there amount to 20-30 million euros (US$ 17.5-26.5 million) per year, apart from the human casualties. Therefore development of a seismic risk reduction strategy has to be a regional long-term objective.

Active humanitarian advocacy

Regional cooperation in disaster mitigation, preparedness and response, knowledge sharing, and the introduction and enforcement of regional standards, particularly in construction, clearly hold the promise of dividends. Lessons painfully learned should not be forgotten.

Expert reports of the Izmit disaster refer, among other things, to the width of traffic arteries. Some collapsed buildings blocked the way for rescuers through narrow streets. Others toppled buildings on the opposite side of the street in a domino effect. Macedonia's Professor Garevski emphasizes that free access for rescue services is vital in emergency situations – a lesson of particular importance for the designers of future urban plans in seismic regions.

The lesson wasn't new. Getting on for four decades previously, Skopje, where Garevski's own institute is situated, learnt the hard way. Since that catastrophe in 1963, the rebuilding of the Macedonian capital has left it much better off in terms of mitigation. Enlightened planning and legislation produced wider streets, lower population densities and more effective building regulations.

It doesn't take high-tech mapping to remember recent lessons. Common sense derived from experience is sufficient, plus the political will to act upon it. But do cities first need a disaster before acting? Do humanitarian organizations wait to soothe the suffering in the aftermath of disaster? Or should they seek to reduce the risk of disaster striking in the first place?

Strategy 2010, the Red Cross and Red Crescent's plan for the decade, calls for more active humanitarian advocacy. In the context of urban earthquake risk, that means helping to create ever-greater public awareness of the threat, more dialogue with authorities on how to mitigate the threat, and better preparedness in the event of the threat becoming reality. Advocacy not only aims to create awareness; it aims to achieve real changes both in people's behaviour and in government policy. Critical changes that will reduce the risk of future earthquakes include:

- **Legislation and enforcement** of regional standards in construction, land-use and urban planning – including incentives to encourage better building.
- **Decentralized disaster preparedness** and response planning, along with the resources to train emergency teams in exposed communities.
- **Regional knowledge sharing**, to make sure what is learnt in one place is known in another, through specialist training and public information.
- **Promoting responsible public debate** through national media to maintain the pressure on policy-makers to prioritize risk reduction.
- **Raising public awareness** of the threats and how to react to them, through mass media and education of schoolchildren.

Principal contributors to this chapter were John Sparrow, head of regional communications at the International Federation's Central Europe delegation in Budapest, and Liesl Graz, an independent writer based in Switzerland. Boxes 5.1 and 5.2 were contributed by Liesl Graz; Eric Bernes and Stephen Claffey, both with the International Federation, contributed Box 5.3; Devinder Sharma, a journalist based in India, contributed Box 5.4.

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Section Two
Tracking the system