Disaster preparedness — a priority for Latin America

It was the perfect disaster. Hurricane Michelle ripped through Cuba in early November 2001. It was the most powerful hurricane to hit the country since 1944, with winds reaching 225 kilometres per hour. But just five people died. Successful civil defence planning, augmented by the local Red Cross, ensured that some 700,000 people were evacuated to government-run emergency shelters in the hours before the hurricane struck. Search and rescue and emergency health-care plans swung into action in the hours afterwards. In Havana, electricity was turned off to avoid deaths from electrocution when power lines came down, and water supplies were turned off to avoid contamination with sewage. Cuba's population was advised in advance to store water and clear debris from streets that might cause damage. As a United Nations (UN) interagency mission reported five days afterwards, the government's "high degree of disaster preparedness...was decisive in the prevention of major loss of life".

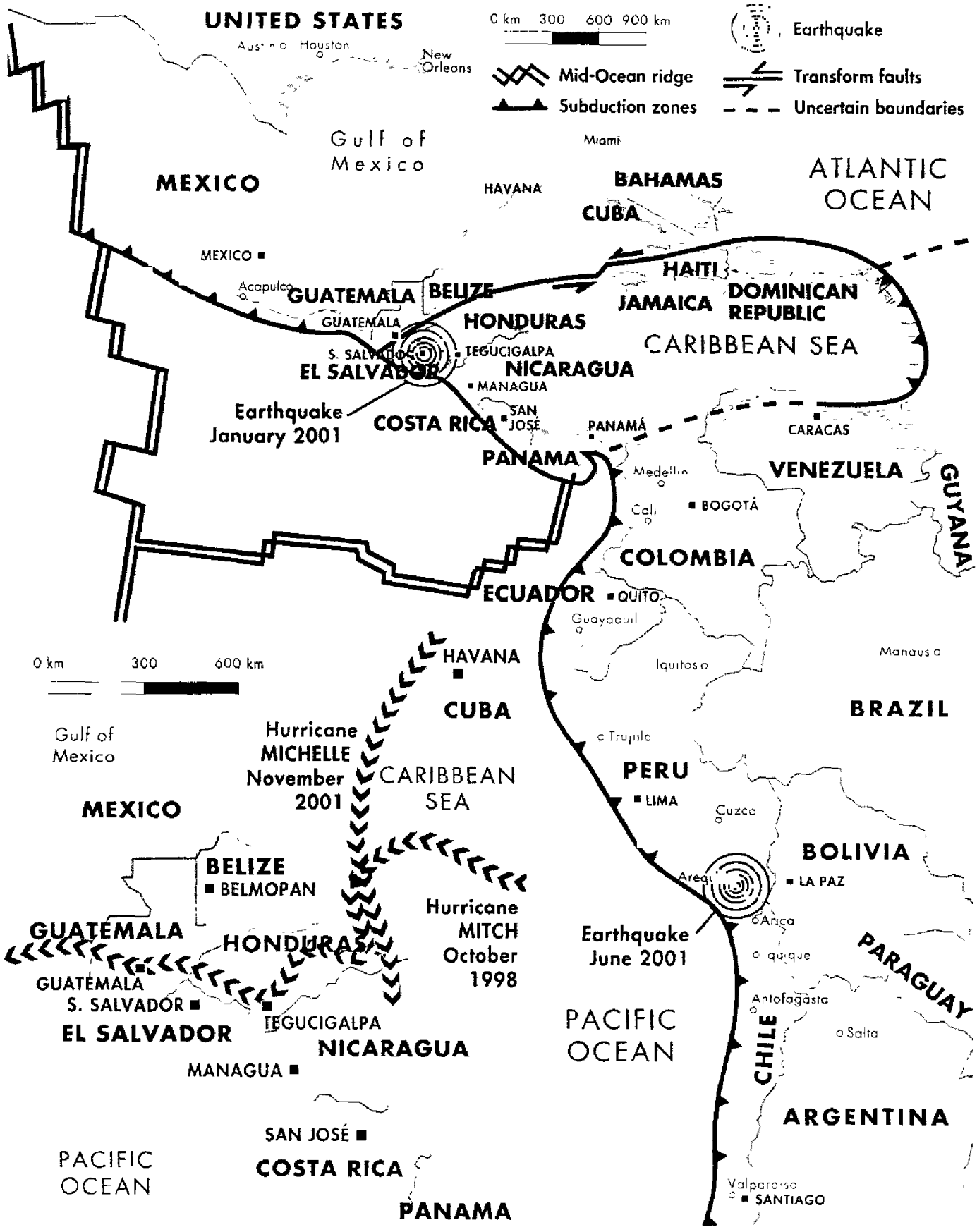
The post-hurricane misery was real enough, of course. Homes, infrastructure and crops were destroyed on a large scale. "Many people have lost everything," said Cuban Red Cross relief coordinator Virginia Huergo. But with most human life secure, domestic and international aid could immediately concentrate on relief and rehabilitation. The emergency phase of international response to such a disaster, which generally lasts for several weeks, was all but eliminated. The UN mission reported that, less than a week after the disaster, local authorities were already delivering construction materials to families whose houses were damaged.

Cuba's response to Michelle, says Nidya Quiroz, the UN Children's Fund (UNICEF) regional emergency adviser in Panama City, was a textbook case of successful disaster preparedness. "This is how to do it. Cuba is a poor country with many problems, but they are teaching the rest of us – even in rich countries – how to respond." Of course it helped to have a centralized government in which "Fidel controls everything," she agrees. But the way that Cuba deploys its expertise at the local level to help poor communities in particular has lessons for everyone. "The doctors and nurses all knew their role. They had teams for every activity and stockpiles of medicines."

The contrast between events in Cuba last year and comparable "natural" disasters in the region a couple of years before – Hurricanes Mitch and Georges in 1998 and the floods in Venezuela in 1999 – is a subject of anguished debate among governments and aid agencies in the region. Mitch, in some respects a lesser hurricane than

Photo opposite page:
More investment in disaster preparedness is urgently needed to ensure all exposed communities are less vulnerable to disasters.
In Honduras, in the aftermath of Hurricane Mitch, people are rebuilding houses designed to better withstand natural disaster.

Yoshi Shimizu/ International Federation, Honduras 1999.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SANTIAGO
PANAMA

Michelle, killed up to 20,000 people and, in the words of the Honduran prime minister, put the country's economic development back 20 years.

Some fear that without urgent action to improve disaster preparedness, the region could become caught in a spiral of natural disasters that wreck development and feed a growing vulnerability to each succeeding disaster. But where are resources for disaster preparedness best invested – at local, national or regional level? Others argue that stronger economic development will itself reduce the risk of disasters. That may be true in the very long term. But, given the annual recurrence of natural disasters, and with El Niño's extreme weather conditions returning to the region's Pacific coast every five to seven years, the case for focusing on disaster preparedness has never been greater.

Increasing vulnerability

Latin America is a crucible for a full range of disasters, from the tectonic to the climatic. According to François Grunewald, who heads a think-tank that advises the French government on crisis management, Central America in particular is "one of the world's most geo-dynamic regions, marked by recurrent seismic and volcanic activity, as well as hurricanes, forest fires and drought". El Niño, though now recognized as a near-global climatic phenomenon, was first identified and has some of its most intense consequences in the region.

There is nothing new about the region's exposure to natural disasters. San Salvador, capital of El Salvador, has been seriously damaged by earthquakes 14 times in the past three centuries. Managua, capital of Nicaragua, is not far behind. Between 1960 and 1988, the Office of US Foreign Disaster Assistance logged 64 natural disasters in the seven countries of Central America alone. But many countries in the region – and particularly their marginalized, poor communities – are becoming increasingly vulnerable to the destructive forces of nature through poor construction and siting of buildings and environmental degradation.

Says Grunewald: "Uncontrolled urban sprawl and speculative land markets have pushed many marginal settlements into high-risk areas such as river canyons and flood-prone coastal zones. The expansion of the agricultural frontier into more fragile ecosystems – eliminating stabilizing forest cover from steeper and unstable terrain – has increased the frequency of flash floods, mudflows and landslides." Such factors clearly played a major role in the high death tolls in Honduras and Nicaragua during Mitch and the floods of Venezuela in 1999.

Tens of thousands of San Salvador's citizens live in ravines and on steep slopes, despite the danger of landslips from the city's extreme seismic vulnerability. During the series

of earthquakes that shook El Salvador in early 2001, some 700 of the 1,100 who died were buried when a landslide engulfed 500 houses in the suburb of Las Colinas in Santa Tecla, just outside San Salvador. This, says geographer Ben Wisner of Oberlin College, Ohio, "was not an 'Act of God'. A group of residents and environmental groups were in court only a year before to stop development on that slope and the ridge above" because of the evident risk.

But besides the physical vulnerability of communities, there is an additional factor: the failure of governments and aid agencies to prepare communities, and sometimes themselves, to cope with disaster. An absence of simple evacuation procedures may have been responsible for a large proportion of the deaths in Tegucigalpa, the Honduran capital, when Hurricane Mitch struck, says Red Cross delegate Jan Gelfand. "Half the deaths happened because people went back to their houses to collect their families. If there had been an evacuation procedure so people knew where to meet their families in a safe place, most of those lives could have been saved." Nor were there procedures for efficient search and rescue and post-disaster evacuation, or stockpiles of key relief supplies like food, blankets and tents. The contrast with the Cuban experience during Michelle could hardly be greater, and goes a long way to explaining their hugely different death tolls.

The reasons behind this vulnerability to disaster lie partly in the increasing fragility of government agencies, including civil defence, during a time of economic recession and international pressure to privatize central services. But there is also a simpler reason than economic hardship: a failure to learn lessons from past disasters and engage in cheap but effective disaster preparedness. Some argue that international aid agencies, as well as national and local governments, have failed in this respect – they have lost sight of the real difference that disaster preparedness can make.

"Physician, heal thyself"

The nature of the current debate on how to prepare for and respond to disaster in the region has been deeply coloured by the three disasters Mitch, Georges and the Venezuelan floods. Numerous international agencies conducted post-mortems into the handling of these disasters by both national governments and their own staff, often with withering results. From these reviews, a picture emerged of disorganized and poverty-stricken national civil defence agencies augmented by proud but hopelessly under-resourced relief agencies, including National Red Cross Societies, overwhelmed by an uncoordinated influx of international aid, much of it brought by people who could not even speak Spanish.

As help flooded in during Mitch, for instance, money, resources and expertise were wasted. "People did their own thing; it was chaos," says Gelfand, who was in

Honduras during Mitch. It was not clear who was, or should be, in charge. Was it the locals with their experience of the country, or the foreigners with their skills in handling other disasters?

A review team assembled after these disasters by the International Federation of Red Cross and Red Crescent Societies under Douglas Lindores, former secretary general of the Canadian Red Cross, reached some hard-hitting conclusions, not least about the Red Cross itself. While Lindores's team praised National Societies' quick response to the disasters, and their capacity to inspire spontaneous "voluntary service", they also accused the International Federation of letting down the often heroic work of these volunteers through "systematic weaknesses", including poor coordination between members of the Movement.

The review team charged National Societies and the International Federation's secretariat with being "not adequately prepared" for their primary remit – "to respond in a timely and effective manner to disasters". The team added that a lack of focus had "diluted disaster preparedness efforts and resources". While they recognized the importance of community-based disaster preparedness, the reviewers suggested that National Societies themselves have a "fundamental obligation" to ensure that they too are "appropriately prepared".

In disaster-prone Central and South America, failing to prioritize disaster preparedness and risk reduction will continue to have catastrophic consequences.

Cecilia Goin/ International Federation, Peru 2001

Regional support for local preparedness

The International Federation, perhaps more than some other aid organizations, has confronted the crisis of disaster preparedness and response, post-Mitch. In particular it has created a new regional body, PADRU (the Pan-American Disaster Response Unit), to beef up its disaster preparedness and response capability and help to define and develop the capabilities of National Societies. Iain Logan is its head of disaster management and coordination – he says that the Lindores report provided important impetus to the setting up of PADRU.

PADRU, which could become a model for Red Cross operations in other regions of the globe, is based in Panama, where good communications, security and a free trade zone mean it can procure and distribute goods quickly. In late 2001, its Panama warehouse contained water and sanitation equipment, blankets, satellite telephones and a range of relief equipment supplies such as medical kits and plastic sheeting, some of it recovered from the Mitch and Venezuela flood operations, and ready to be shipped anywhere in Latin America within 24 hours of a request from a Red Cross society. "We hold things that are difficult to get quickly in an emergency," says PADRU's logistics manager, Jon Carver.

PADRU's remit includes:

- encouraging risk mapping and early warning systems;
- stockpiling relief supplies;
- arranging standing "pre-contracts" with suppliers;
- bolstering local and national capacities to organize teams of volunteers and community brigades; and
- establishing emergency response units.

Of these, says Logan, the first priority is strengthening the capacities of National Societies to prepare for and respond to disasters. This work is well under way: PADRU now trains national intervention teams to International Federation standards. A database is being built up of staff, trained in a range of disciplines, who are able to respond at 24 hours' notice. PADRU-trained national staff have worked alongside international Red Cross teams in every disaster in the region since Mitch, says Logan. By training them to respond as part of national and regional intervention teams, Logan hopes that PADRU can be an instrument for the decentralization, rather than the centralization, of relief provision. And for saving more lives.

"We don't expect National Societies ever to have to deal with big disasters alone, but they can be better trained, equipped and more coordinated," says Logan. "The response to the earthquakes in El Salvador and Peru, and Hurricanes Iris and Michelle in the Caribbean, in 2001 showed significant improvements since Mitch. In El

Salvador, PADRU people and resources were on the ground within eight hours, having drawn up a plan of action with the National Society. That quicker response certainly saved lives." And in the Peruvian quake of 2001, says Logan, PADRU combined airlifts from Panama with the activation of pre-contracts with local suppliers in Peru.

There were hiccups in Peru. "At first we didn't know if PADRU came to direct or support us," says Clotilde Villena, president of the Arequipa branch of the Peruvian Red Cross. "For five days it directed, but in the end it provided technical support, which worked much better." But as a result of PADRU's intervention, regionally held stockpiles of supplies reached the area days earlier than would otherwise have been the case. According to Carver, one Peruvian supplier who had committed to provide 10,000 blankets could not meet the order. After a three-day delay, the decision was taken to bring in blankets from outside. "People were freezing; we couldn't wait," says Carver.

Carver is adamant that his job is not to circumvent National Societies, but to augment and strengthen them. A key task of PADRU, he says, is to help source relief supplies locally: "We are now working to develop agreements and pre-contracts with national and regional suppliers which will allow us to deliver relief supplies in a very short time." Edgardo Calderon, the president of the Peruvian Red Cross, emphasizes that PADRU's role must be one of "giving assistance and advice previous to an intervention; building a relationship to know the capacities and necessities of the National Red Cross, with the ultimate goal of helping just in those weak points."

A critical question for planners of this new regional strategy is how much aid should be stockpiled and where. Villena hopes in future to establish a local stockpile of relief materials in Arequipa. "If we had our own warehouse we would be able to respond within 24 hours," she says. Similarly the provincial civil defence chief, Carlos Nacarino Rodriguez, is talking of establishing local stores, holding clothing, tents, blankets and food at several small towns in the mountains. "We are all aware we have not been sufficiently prepared," he says. "With roads broken, some villages could only be reached on donkey or with a ten-hour walk."

At PADRU they are less sure about the wisdom of this approach. Such stocks are expensive and difficult to manage. Critical questions arise: Who owns them? Who has the right to requisition stockpiles for a disaster outside the area for which they were originally created? "It would make more sense to have regionally available stocks held under clear understanding of to whom they belong and who can authorize their use," says Carver. Donors are also attracted by the transparent accountability which regional control of their donations provides. "It would be ideal to have such logistics in each country," says Edgardo Bartomioli, a Lima-based delegate of the German Red

Cross. "But you can see the advantage of a regional facility in Panama. It has good results. It can get supplies here in 24 hours."

This approach to stockpiles exemplifies PADRU's attitude to regionally-based disaster preparedness. It does not want to centralize unnecessarily – indeed often the priority will be to decentralize. But the aim of the regional unit, it believes, is to identify how best to ensure rapid, effective delivery of relief aid while building capacity of local-level disaster preparedness and response. Some resources – such as search-and-rescue personnel – need to be locally based to be effective, while others – such as strategic stockpiles of relief aid – may be better sourced regionally or through pre-contracts with national suppliers. Some skills, such as evacuation procedures, need to be embedded within communities themselves; others, such as management expertise in handling massive international relief, are best centralized.

But many questions remain. Crucially, exactly how much difference can disaster preparedness make to saving lives? Is it right to suggest that economic development is the best form of preparation to withstand natural disasters? This, after all, is the view, in their different ways, of both the neo-liberals of the right, who want unfettered market-based economic growth, and the radical social reformers of the left. Or is there a more risk- and people-centred agenda that both sides, in pursuit of their macro socio-economic agendas, have tended to ignore?

Reduce disaster risk – not just poverty

One of the key ideas in this debate is the notion of the "class quake". The phrase was born in Latin America to describe a seismic event in Guatemala in 1976 that killed 22,000 almost exclusively poor people in the rural highlands and slums of Guatemala City. It encapsulates the view, widely held today that, as Ann Varley of University College London has put it, "Disasters are just big versions of everyday hazards faced by poor people." The argument is that vulnerability to natural disasters is overwhelmingly a function of poverty, inequality and social exclusion, and therefore that development is the best form of disaster preparedness. The director general of the Panama Red Cross, José Beliz, goes so far as to say that "we need to prepare more for day-to-day social disaster and less for occasional natural disasters".

There is plenty of evidence that the poor are often the most vulnerable, of course. In the months after Mitch, residents of the houses on the steep hillsides in Tegucigalpa that had collapsed so catastrophically were rebuilding as if nothing had happened. "One hillside is today full of people and slipping at a rate of a centimetre a month. The authorities have tried and tried to get people to move, but they won't go," says Carver. It is hard to believe that people would have stayed and rebuilt if they had an alternative.

Such observations have had an important effect on the way many relief agencies see their role. Dilma Davila, head of the projects office of the Peruvian Red Cross in Lima, sees development as her prime task. "Before about 1997, we were focused on handling emergencies, with first aid and so on. Our aim now is to give power to the people, by providing the most vulnerable with tools to help them develop."

But others are not so sure that development will of itself reduce vulnerability. They feel the pendulum may have swung too far. It is true, they say, that shanty towns built on or below steep, deforested slopes, or on flood plains, have suffered greatly from hurricanes and floods in the region in recent years. But during Peru's earthquake last year, some shanty dwellers survived where richer neighbours perished (see Box 2.1). And the 700 victims of the landslip at Las Colinas near San Salvador in the 2001 quake were mostly middle class.

Clearly forces other than poverty are exposing people to disasters. Lack of land zoning regulations may allow developers to build in high-risk areas. Corruption may allow them to ignore existing building codes and regulations. Ignorance may mean that

Box 2.1 Traditional homes prove safer

Sometimes the poor survive best. Take the town of Punta de Bombon in southern Peru. It suffered badly in the 2001 earthquake. Whole street blocks disintegrated and five months on there were few signs of repair. But perched on the hillside above the town were extensive shanty settlements barely troubled by the quake. The houses, made of flexible reeds and easily reassembled sheets of corrugated metal, were either untouched or quickly repaired. The poorest, most marginalized families in the area survived last year's quake relatively untouched, says the Red Cross's rehabilitation coordinator Freddy Gonzalez.

Shanties, it seems, can sometimes be the safest place in a quake. The light materials that comprise most self-built homes of the poor are much less dangerous than concrete or masonry. Many people tell stories like that of Panamanian Red Cross volunteer Leonar Arboleda. When her family was caught in a hurricane in Nicaragua in 1986, she remembers, "My aunt and cousin left their shack to find shelter in a big Christian church. But the church collapsed and killed them, while the shack was unscathed."

Many argue that the traditional building materials and designs of the pre-Columbian Andes, which are often still used by the rural poor, are much safer because, unlike modern construction methods, they were designed with quakes in mind. Inca buildings, according to Tony Oliver-Smith, an anthropologist at the University of Florida, had thatched roofs, little masonry, were single-storeyed and avoided long overhead beams. And the Incas kept settlements small, well-spaced and clear of valley floors. Modern planners and developers could benefit by applying traditional building techniques. ■

people move into sub-standard buildings blind to the risks. And if nobody has bothered to map out where the high-risk areas are, no amount of social planning or wealth will provide protection. Rich and poor died together when lava belched from a Colombian mountainside in 1985 and obliterated a city of 20,000 people. Riches would not have saved one of them; a decent prediction of the eruption and an evacuation procedure could have saved them all.

The development agenda has often submerged genuine and important debates about managing risk, says José Luis Rocha of the Central American University in Managua. In Nicaragua since Mitch, "disaster prevention and mitigation has by and large been overshadowed by the national debate over different development models. Shockingly, many reports and recommendations on the requirements for rehabilitation and future development totally ignore the impact of natural disasters on these alternative development scenarios, and on the impact of these development scenarios on the ability of vulnerable populations to withstand shocks to their livelihoods."

According to Ben Wisner, the government in El Salvador, which is "sold on privatization", has been "resisting popular demands since Mitch to reform the whole system of emergency response". Yet given how disaster-prone Latin America is as a region, a failure to prioritize disaster preparedness and risk reduction will continue to have catastrophic consequences.

Wisner points out that the regional Pan American Health Organization (PAHO) "has been a leader, especially in providing very straightforward design and technical assistance for protection of hospitals and clinics. The trouble is that national governments sometimes only pay lip service and don't follow the advice." Where governments fail to take the lead, can regional humanitarian and development organizations seize the initiative? According to Iain Logan, "the Red Cross, at all levels, has a significant advocacy role and opportunity to advise government in risk mitigation, planning and the development of national disaster strategies."

One problem for regional organizations, says Wisner, is the political requirement to work through "national centres of power". But "they should reach out to civil societies and municipalities" as well. He stresses that municipalities are places "where the potential for rapid and meaningful change can really take place". Clearly, the national level is the only level at which certain changes can be achieved – such as generating the political and legal will necessary to enact and enforce better building codes. But, he argues, "at community level, one can see evolving a strong demand for national action as well as a neighbourhood 'culture of prevention'". This is the "top priority for disaster preparedness in Latin America – to establish civilian emergency management systems in cities [that] draw on civilian groups of various sorts in making contingency plans".

Community preparedness pays

So, while the debate over models of development will continue for years, there is consensus over the value of community and municipal disaster preparedness. On the national scale, we have already seen that a poor and hard-pressed country such as Cuba can prepare itself effectively to withstand disaster. But even individual communities can do the same. During Mitch, those few Nicaraguan communities that had had prior experience during the recent civil conflict in self-help organization "proved to be very effective in evacuating the population and distributing aid", says Rocha.

And, in poor communities around Arequipa, Peru's second city, the timely establishment by the local Red Cross of 15 emergency brigades with basic training in evacuation and first aid and with links to local authorities and civil defence structures directly saved lives during 2001's earthquake. The night before the quake, the brigade in the slum of Pampas Polanco rehearsed evacuation procedures and learned how to pitch a tent as shelter in the aftermath of disaster. Five months later, amid the wreckage, brigade members still joked about how the Red Cross team must have known a quake was coming.

Moises Rosales – dentist, long-time Red Cross volunteer and local director of the project – says that the 30,000 people under the umbrella of the Arequipa brigades fared much better in the minutes and hours after the quake. Elsewhere across southern Peru hundreds died as they returned home to collect loved ones or cowered in panic in buildings that they believed to be safe. But in Pampas Polanco, "they knew what to do and where to go as their houses collapsed. They didn't panic. They worked together as neighbours, getting everybody to open spaces. The brigades definitely saved lives here."

Brigade member Beatrice Larico told of how her grandfather survived because he escaped the shack in her yard where he lived before it collapsed. And even in the rubble of their homes – built in an old quarry whose walls partly collapsed onto the community – the brigade women proudly showed the Red Cross first-aid box they keep stocked for the next emergency. Field-tested in a real disaster, the brigades are now to be replicated, with European Union funding, more widely across southern Peru's earthquake zone. The lesson is that even the poorest communities can be made safer from natural disasters.

Early warning saves lives

Earthquakes are rarely forecast, but extreme weather can be, with great success. However, timely hurricane forecasts, for instance, are of little use unless communities