At field level, some valuable tools exist to assess local people's vulnerability and resilience, and mobilize communities and agencies to take action. The original capacities and vulnerabilities analysis (CVA), which dates back to the 1980s, has been adapted in many places, notably by the Citizens' Disaster Response Network to organize community-based DP in the Philippines. Second-generation models, such as the International Federation's vulnerability and capacity analysis (VCA), are now being applied. To date, these methods have been used mostly by disaster management organizations and often applied to specific hazard threats. Yet they are capable of much broader application, to the multiple vulnerabilities faced by communities, and they can easily be used in long-term development work. Chapter 6 shows how VCA boosted the Palestinian Red Crescent's understanding, capacity and relationships with communities and other disaster responders.

Innovations in disaster insurance. The concept of disaster insurance is not new. An insurance policy provides cash payouts following disaster, potentially helping fund the recovery process. Insurance policies can also be made conditional upon implementing certain building and land-use zoning codes, thus acting as a mechanism to enforce risk reduction.

In developed countries there are well-established markets for insurance against a wide range of natural hazards. However, the cost of such insurance fluctuates, depending on the scale of bills incurred by the industry. In 1992, for example, prices leapt three- or fourfold as insurers faced record claims following Hurricane Andrew. This stimulated interest in innovative insurance tools, such as weather index-based insurance. Under such policies, automatic payouts are made within 72 hours of the pre-determined trigger event occurring (e.g., based on earthquake intensities, temperature levels, precipitation over a specified period, wind speed).

There has been recent interest in helping poorer countries gain greater access to international insurance markets at an affordable, relatively stable price. Insurance cover is typically far less extensive in developing countries, with some governments arguing that, in the event of disaster, international assistance will be forthcoming anyway. However, on both a public and private basis there are strong arguments for increasing insurance coverage in developing countries. The World Bank, for example, is supporting a compulsory earthquake insurance scheme established in Turkey following 1999's devastating earthquakes. Insurance is also being tested as a means of protecting local-level savings and credit schemes run by NGOs (see Box 1.5).

Partnerships with business. The growing global power of business, compared to that of governments and even inter-governmental institutions, has led to much discussion

about the role of the business sector in risk reduction. Some aid agencies have expressed enthusiasm about 'inter-sectoral' partnerships between the commercial, state and non-profit sectors.

The private sector's commercial interests in disaster mitigation – for example, in insurance, engineering and information technology – are well known. But a recent report by the London-based Benfield Greig Hazard Research Centre, which studied businesses' wider involvement in non-profit mitigation work specifically aimed at the public good, concluded that "there is little understanding of what this means in practice and still less of how to go about it". To date, the concept of corporate social responsibility has had little impact in the field of risk reduction. Most of the experience comes from the United States, where such initiatives as the Institute for Business & Home Safety's Showcase State programme and the Federal Emergency Management Agency's local-level Project Impact programme are bringing businesses, local officials and communities together to identify risks and vulnerabilities, raise awareness and plan mitigation measures. There are many challenges in sustaining these initiatives involving businesses – and their failure to address the deeper causes of vulnerability remains a cause for concern – but there is potential here that deserves to be tested more thoroughly.

A right to safety? The idea of a right to safety from disasters, to sit alongside other basic human rights, is gaining ground. The idea fits well within the rights-based approaches widely adopted by humanitarian and development agencies over the past few years. It is arguably implicit within other internationally agreed declarations on human rights. The right to adequate food and the responsibility of states to alleviate hunger are already recognized in international agreements.

Safety is difficult to define, since notions of acceptable risk are relative. Decisions about risk and safety may have to be taken where the precise nature, magnitude and extent of a hazard are unclear or disputed. Who is ultimately responsible for ensuring the safety of the public and mitigating hazards? The concept of a right to safety is likely to be challenged by those who fear it will increase their own liability – for instance, governments and the private sector. In any case, risk can only be reduced; it cannot be eliminated.

Despite such difficulties, rights-based thinking could mark a significant step forward in the way we approach risk reduction because it may strengthen lines of accountability and build trust between vulnerable people and those who are supposed to help them. One way ahead could be through an intergovernmental panel to set and monitor international standards. These standards could eventually be linked to the proposed International Disaster Response Law (see Chapter 9, Box 9.1).

Box 1.4 A livelihoods context for disaster management

On 26 January 2001, a series of earthquakes, peaking at 7.9 on the Richter scale, shattered the Indian state of Gujarat. Officials later put the death toll at over 20,000. Hundreds of thousands of homes were destroyed, and many schools and hospitals collapsed. Up to 15 million people were affected.

While physical, tangible assets such as stronger homes and hospitals are crucial to reduce risks from disasters, there are many less tangible assets which people depend on to recover and survive. For example, in order to benefit from the government's complex compensation scheme, some survivors found that friends in high places proved very useful.

According to an evaluation by the London-based Disasters Emergencies Committee (DEC), one villager said, "We received 2,000 tents for 900 households because we had a prominent politician in the community." Some villagers proved more capable than others in accessing aid for relief and reconstruction. Why? The DEC's evaluation found that "women, lower caste groups and those representing smaller numbers stated they were left out of decision-making in the relief committees and hence were also omitted from relief distributions".

The livelihoods-based approach to disaster reduction tries to unpack these different aspects of vulnerability and capacity. It describes how people, both rich and poor, access the assets they need, how these assets are controlled and how assets are used both to improve livelihoods and to reduce vulnerability to disasters and "shocks" such as ill-health or unemployment. Tangible assets can be both physical (e.g., food, relief, safe housing) and financial (such as income, savings, insurance). However, non-tangible assets are just as important. They include alternative skills, training and disaster awareness (human assets); community organization, self-help and solidarity (social assets); representation in decision-making and the ability to lobby leaders for action (political assets). These non-tangible resources are often ignored by disaster managers, but prove pivotal in sustaining disaster preparedness, mitigation and rehabilitation.

Following the super-cyclone that devastated India's Orissa state in 1999, Britain's Department for International Development (DFID) piloted a livelihoods-based approach to rehabilitation. Financial assets were strengthened through cash-for-work programmes, while cyclone-resistant reconstruction projects enhanced the communities' physical asset base. Significantly, however, non-tangible assets were also developed, such as skills training to improve earning opportunities; raising awareness of vulnerable people's rights; building the capacity of self-help community groups; and strengthening the involvement of the poor in the decision-making process.

The livelihoods-based approach has also been shown to pay dividends in terms of disaster mitigation. In 2000, the worst floods for a century rushed through Mozambique's capital Maputo, rapidly carving out deep ravines which devastated large areas in two of the city's poorest neighbourhoods. The torrents destroyed many houses and the water supply, and threatened to swallow the health centre that served most of the locality.

When the floods hit, an existing livelihoods-based project was being implemented in the same area. This project was focused on reducing poverty by building links between the local residents, municipality, private sector, government, university and NGOs. These links, effectively social and political assets, were instrumental in the setting up of mechanisms, within the municipality, to coordinate development support for poor neighbourhoods.

Significantly, during a recent review, municipality officials, the district administrator and residents said that the relationships built up during the livelihoods project also strengthened their ability to respond to the disaster. Decision-makers now have a better understanding of residents' livelihoods, which in turn has generated more options to choose from in addressing post-disaster infrastructure needs. This could include community-managed maintenance of water systems, ravine repairs and solid waste disposal – measures which would themselves reduce the risks of future disasters.

The livelihoods approach therefore sits on the crossroads between disasters and development. It makes clear that disasters are part of everyday life, and must be overcome if a livelihood is to be sustainable. Within this approach, disaster mitigation is in effect the act of building up tangible and non-tangible assets to reduce vulnerability.

This leads on to another key feature of livelihoods thinking: the need to view vulnerable communities in a holistic rather than a sectoral way. The livelihoods approach sees people as the starting point of all interventions to reduce risk. People's lives are complex and do not fit neatly into the sectoral areas that aid practitioners specialize in. For example, a house is much more than just a shelter – it can be a home, a place of learning, a means of income or an investment. And solidarity among neighbours and their willingness to help in times of disaster is more valuable than the best-drafted preparedness plan. By rooting risk reduction in a developmental context, livelihoods strategies enable disaster managers to take better account of the complex interactions of life that people themselves employ to mitigate, respond to and recover from disaster. Three key priorities have emerged from recent experience:

Build non-tangible assets. Improving the skills, self-help and solidarity of households and communities will prove as important in the face of disaster as investing in physical and financial defences.

Strengthen everyday lives. Preparing for major disasters is only part of risk reduction. Smaller, ongoing disasters can, over a period of time, take a heavier toll than the big one-off disasters. So strengthening everyday lives by investing in human, social and political assets will help reduce the risks posed by a whole range of hazards, large and small.

Listen to local priorities. The livelihoods approach puts vulnerable people and their priorities at the centre of aid strategies. Despite much rhetoric, this often doesn't happen. As the DEC's evaluators in Gujarat discovered: "People constantly emphasised the need to restore livelihoods rather than receive relief and expressed some frustration that outsiders did not listen to them on this point. They wanted to receive cloth and make their own clothes rather than receive clothing but no one took any notice." ■

Targets for risk reduction

The threats that natural hazards pose to human society and sustainable development are undoubtedly massive. The scale, extent and complexity of disasters and vulnerability present enormous challenges. Our understanding remains incomplete; our organizational capacity, financial resources and tools are still woefully inadequate.

Yet we know that disaster mitigation and preparedness pay – in human, economic and environmental terms. There are success stories to guide us, from across the world. Innovations are opening up opportunities to make more progress in the near future.

How, then, can we ensure that we really advance the thinking and practice of risk reduction over the next few years? Here are three suggestions that, if followed, could radically reform the way we deal with risk and vulnerability.

Relocate disasters within the wider context of risk reduction. Disasters are, after all, just one aspect of risk, and risk management should be everyone's concern. Even though many people's understanding of specific risks is imperfect, risk as a broad concept is commonly understood, and risk assessment now forms an essential element in many planning processes, from business to engineering to social development.

Redefining disaster mitigation and preparedness as aspects of risk reduction could break down the many cultural, institutional and methodological barriers separating relief and development professionals. For too long, disaster management has been viewed, and organized, as a separate sector. This separation has been intensified by artificial divisions within the sector, between those who approach mitigation and preparedness from the direction of humanitarian relief and those who approach it from a developmental perspective.

Risk reduction terminology can be applied across the relief-development spectrum. It can be applied to all types of risk reduction activity, from early warning systems, stockpiling relief materials and preparedness for response through to advocacy for greater social and economic equity to reduce vulnerability. It can be applied at all levels, from the local to the global, and by every kind of institution, from the village community to multilateral and inter-governmental organizations. Risk reduction is not exclusive to the big disasters that preoccupy aid agencies, but can be applied to the numerous smaller hazard events that undermine vulnerable households.

Long-term partnerships based on good governance. Risk reduction is a long-term process, not a one-off intervention. Viewing disasters in this way steers us away from

Box 1.5 Insuring micro-finance institutions against disaster

Micro-finance institutions (MFIs) are beginning to talk about disaster insurance. MFIs provide financial services to the poor, extending credit and providing savings facilities. The loans they provide are typically very small, are mainly intended for productive purposes, do not require conventional forms of collateral and are extended on a non-profit-making basis. Many of their clients would not be able to obtain such loans from the commercial banking sector. MFIs thus provide a very important service, helping the poor to invest in new productive activities that will increase their livelihoods, and enabling them to access the funds they need to recover from seasonal shocks, such as flooding.

Reflecting their client base, MFIs themselves are highly vulnerable to natural hazards. As Warren Brown and Geetha Nagararajan observed in the context of the 1998 floods in Bangladesh, they can face temporary liquidity difficulties as they simultaneously try to support clients through difficult periods whilst also experiencing a decline in flows of debt repayments as people are temporarily unable to meet their dues. Not only do natural hazards threaten the survival of borrowers, but the very assets purchased with previous loans (for example, agricultural tools or chickens) may have been lost, threatening their recovery. In Bangladesh, for example, the Grameen Bank, the original pioneer of micro-credit operations, reported that around 1 2 million of its 2.3 million members were affected by the 1998 floods, of which 0.8 million were seriously affected.

However, it is also recognized that it is important not to encourage a culture of default. Hence, in the longer term, borrowers are often expected to honour their loans, even when the activities funded through them have been destroyed.

Some MFIs are therefore beginning to explore options for disaster insurance, both to protect themselves and to enable them to respond to additional disaster-related needs for their clients. This interest has been partly motivated by the discovery that the poor may use loans as a de facto insurance policy, to pay for consumption and survival needs, or to replace basic means of production after a disaster. To date, those MFIs that have established schemes have basically opted for self insurance, setting some resources aside into a calamity fund for use in the event of an emergency. In the event of a disaster seriously affecting a significant proportion of clients, however, such funds would be grossly inadequate. The alternative, placing the risk externally, would create additional overheads, making the cost of credit itself more expensive.

A major challenge ahead in the fight against poverty and vulnerability is thus to devise some way of supporting MFIs, either individually or as part of a group, in establishing some form of viable but affordable insurance. ■

the "technical fix" towards broader strategies that address human vulnerability, strategies that are more people-centred and less hazard-centred. Disasters affect *people*, after all, and the evidence shows that they are affecting more and more people every year.

Disasters are unsolved problems of development, which means they are therefore problems of governance, in its broadest sense. Good governance needs to be placed at the heart of risk management. Disasters are complex problems, requiring complex solutions that draw on many different skills and capacities. Instead of top-down disaster management based on fixed-term projects, we need long-term partnerships for risk reduction involving multiple stakeholders, drawing on their different capacities and respecting their different needs.

Such partnerships cannot be imposed: they must be negotiated, and built on trust and confidence. Every partner must have a voice at the negotiating table, especially the most vulnerable communities, which have much to contribute. Creating trust will be difficult in many countries, given the history of mutual suspicion between governments and civil society, and between business and the public sector. But, as we have seen, alliances can be forged in unlikely situations, and each successful partnership is a building block for others.

Good governance – at all levels, and in all types of group and organization – depends on two fundamental principles: participation and accountability. All partners should participate in making decisions about the processes and initiatives that affect them. Only in this way can we identify needs, capacities and priorities accurately, define problems correctly, and design and implement appropriate risk reduction measures. Accountability means finding mechanisms by which partners' performances can be judged and they can be held responsible for their actions. All too often, disaster management professionals recognize their accountability to bosses, boards of management, donors and governments, but fail to recognize that they should be accountable above all to the people they claim to be helping: disaster victims and vulnerable communities (see Chapter 7). This balance has to change.

Targets for risk reduction. Fine sentiments need to be turned into action. Organizations working for disaster mitigation and preparedness could promote trust, accountability and innovation through one simple action: setting targets for risk reduction. Setting targets forces agencies and governments to square up to this issue: there can be no hiding behind well-meaning generalizations and easily agreed principles. Targets provide a benchmark for judging their commitment. Targets can be set by everyone, at every level.

The idea may seem simplistic, even impractical. But International Development Goals have been adopted by the World Bank, the International Monetary Fund and the Organisation for Economic Co-operation and Development's donor nations, and endorsed by the UN General Assembly. These goals are ambitious, setting out 21 indicators to measure progress by 2015: for example, halving the proportion of people living in extreme poverty in developing countries (compared to 1990 levels);

universal primary education in all countries; reversing the spread of HIV/AIDS; a two-thirds reduction in death rates among infants and children under five in developing countries; and implementing a national strategy for sustainable development in every country.

If targets can be set for sustainable development, then why not for risk reduction? National governments could, for example, set targets for reducing the numbers of people killed and directly affected by disasters, based on annual averages over rolling ten-year periods. They could set targets for designing and implementing national disaster management plans – which was supposed to have happened during the IDNDR but didn't in many cases. Local governments, NGOs, and communities could set targets for designing and implementing mitigation and preparedness plans, training emergency response teams, establishing early warning and evacuation systems, protecting lifeline infrastructure (such as hospitals), and reversing environmental degradation such as deforestation on unstable hillsides. Businesses could commit themselves to protect their employees, suppliers and clients.

Because developing-country governments and civil society lack resources for some of these measures, donor governments and agencies could set targets for allocation of resources to risk reduction. This could mean devoting a percentage of both official development assistance and emergency relief to disaster mitigation and preparedness initiatives.

Above all, communities, agencies and governments alike need to act now with a sense of urgency to prevent the unnecessary suffering of hundreds of millions of people every year. On average, more than 1,000 people lose their lives to natural disasters every week. Direct costs of these disasters amount to well over a billion dollars each week. Only coherent, long-term and well-resourced initiatives will make any impact on reducing these unacceptable losses.

Principal contributors to Chapter 1 were John Twigg, an Honorary Research Fellow at the Benfield Greig Hazard Research Centre, University College London, and Charlotte Benson, an economist who has ten years' experience in research on the economic aspects of natural disasters. Jonathan Walter, editor of the World Disasters Report, *John Bales (International Federation disaster preparedness delegate, Bangladesh) and Gawher Nayeem Wahra (editor,* Bangladesh Disaster Year Report*) contributed to Box 1.1; John Twigg and Madhavi Ariyabandu (Intermediate Technology Development Group, South Asia) to Box 1.2; Devinder Sharma, a journalist based in India, to Box 1.3; Andrea Rodericks and David Sanderson of CARE International UK to Box 1.4; and Charlotte Benson to Box 1.5.*

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Web sites

Benfield Greig Hazard Research Centre **http://www.bghrc.com**
DesInventar disaster database for Latin America **http://www.desinventar.org**
EM-DAT international disaster database **http://www.cred.be/emdat/intro.html**
International Federation **http://www.ifrc.org**
NGO Initiatives in Risk reduction (set of 19 case studies on British Red Cross web site) **http://www.redcross.org.uk/riskreduction**
Organization of American States **http://www.oas.org/en/cdmp/**
ProVention Consortium **http://www.proventionconsortium.org**
Radix (Radical Interpretations of Disaster) **http://www.anglia.ac.uk/geography/radix**

Section One

Focus on reducing risk