

Chapter 11

Education, information, communications

11.1 Introduction

The communication of information to the public is central to risk management. Vulnerable people need to know about the hazards and risks they face, and the measures they can take to mitigate and prepare for potential disasters. Without such knowledge, they cannot easily mobilise to protect themselves. Development and disaster professionals also need to know about the views and priorities of the vulnerable groups they are trying to help.

Many disaster reduction programmes include public education and information for this reason, but a high level of expertise is needed to make such communications effective in changing attitudes and practice. Few disaster managers possess this kind of expertise. Often, information and educational activities are added onto projects rather than being integral parts of them, the methods chosen for communicating are inappropriate, and the communities at risk have no opportunity to present their views. It is likely that many such initiatives have little impact on the public.

There is now a growing body of experience and research around the practice and impact of communications, particularly in development and health education but also in disaster reduction. Drawing on this knowledge, this chapter covers four aspects of communication to the public and other professionals:

1. Principles of good communication.
2. Basic approaches and methods used in public education and awareness-raising (most of the chapter is on this subject).
3. Professional training and education.
4. Using the internet in disaster reduction.

Forecasting and early-warning systems are covered in Chapter 16.

11.2 Principles of good communication

Disaster managers can learn a lot from the experience of agencies working in sustainable development. For many years, development professionals assumed that they could stimulate social and economic progress simply by

distributing information among poor communities. If new ideas and technologies were not taken up by the communities – which often happened – this was because they did not understand them properly, and so the challenge was to find better ways of presenting the information to them.

Although there were debates about the most effective techniques for delivering information, the basic approach was not seriously challenged until the 1980s, when it became increasingly evident that one of the main reasons for projects failing was that the development specialists had themselves failed to understand the communities they were trying to help: their needs, priorities and indigenous knowledge and capacity. The information and ideas that they were promoting were, therefore, often inappropriate.

More recently, there has been a growing emphasis in development circles on dialogue with communities. Development workers now accept that they have to listen to the people, and that problems and solutions must be identified collectively. The emphasis has therefore shifted from one-way *information dissemination* by specialists to genuine *communications* – i.e. dialogue and exchange of information – between specialists and communities. Participatory methods have played a central role in this shift of approach. This way of communicating is not universal, but it is becoming increasingly widespread.

Disaster reduction programmes are still some way behind, and the dialogue approach remains rare. Most disaster managers work from the assumption that people do not fully understand the risks they face, nor how to deal with them. Therefore, the argument runs, they must be better educated about risk, and where existing messages are not understood these need to be repackaged so that they are easier to understand. This approach sees risk education purely as a kind of public relations or communications exercise, where messages are transmitted from small groups of experts to the uninformed masses.

Certainly, there is a need to educate communities about risk and risk management. However, this is insufficient by itself because the communications process is not informed by communities' experiences and perceptions of risk, or the impact of their socio-economic circumstances on the way they see and manage risks. The need for project managers to understand these experiences and perceptions has already been discussed (in Chapter 9); similarly, Chapters 4 and 8 showed how important it is to involve communities in the entire process if projects are to be relevant and sustainable. However, many disaster management professionals persist in the belief that they alone understand and assess risk objectively (i.e. scientifically), whereas disaster victims' understanding is merely subjective or even irrational.¹

The dialogue approach to communication is not easy. It involves ‘cross-cultural’ communication between outsiders (disaster professionals) and people at the grass roots. However, guidance on the methods and principles is available.²

There are many difficulties and potential pitfalls here. One is that outsiders and local communities express themselves in very different ways. For local people, visualisation and talk are often most important for analysing and transmitting knowledge; for outsiders, especially educated and professional people, the written word is dominant. For outsiders, precise and quantifiable calculation confers weight and authority on information; for local people, comparison is often more important than measurement, especially for practical purposes.

Professionals also like to arrange their information into definable categories, where it can be subjected to recognised methods of quantification and analysis. It can be hard for them to understand the complex, diverse and dynamic realities of community life. Yet dialogue is necessarily a messy business. It involves discussion, debate and sometimes argument between many different stakeholders. Consensus cannot be guaranteed. Dialogue is also time-consuming – and therefore resource-consuming.

Even where there is dialogue, outsiders find it difficult to understand the community’s environment, needs and points of view. Some of this can be blamed on the attitudes and approaches of the outsiders themselves, which are the product of their education, institutional culture and so on. The process of dialogue requires some humility on the part of outsiders, who have to recognise their ignorance of other people and accept that they can never fully understand the vulnerable person’s point of view. Vulnerable people can explain their perspectives clearly to outsiders if given an opportunity to do so.

11.3 Raising public awareness about risk and risk reduction

11.3.1 Aims and approach

The importance of public education is obvious. Indigenous knowledge and risk management strategies are valuable and must be factored into programmes, but this does not mean that the extensive scientific, technical and managerial expertise of disaster professionals should be devalued. There will be many instances where the community does not recognise or fully understand local hazards and risks, and does not know about the full range of measures that it can take to protect itself.

Box 11.1

Principal tasks of risk communication

- Identifying aspects of risk.
- Presenting and explaining risk information to relevant target groups.
- Modifying the risk-related behaviour of people exposed to risks.
- Warning individuals and communities.
- Developing disaster management strategies for the authorities.
- Stimulating community participation in disaster mitigation.
- Facilitating discussion between specialists and communities, and joint problem-solving.

Adapted from B. Rohrmann, 'Effective Risk Communication for Fire Preparedness: A Conceptual Framework', *Australian Journal of Emergency Management*, vol. 10, no. 3, 1995, pp. 42–46.

The aim of public education programmes should be to create what is often called a 'culture of safety', where awareness of risk and adoption of risk-reducing measures are part of daily life. It is relatively easy to improve understanding of hazards and risks and how to deal with them, but harder to change people's behaviour so that they take up appropriate measures, individually or collectively.

Obviously, achieving this 'culture of safety' is a long-term process. It cannot be achieved through a one-off intervention. A programme of activities is needed to reach different target groups, explain and reinforce messages (repetition of messages is an important element in successful public education campaigns), and give people opportunities to think about, question and validate the information they receive. It may be a long time – perhaps years – before behaviour change takes place.

Another point to remember is that people must be *encouraged* to act, not simply *told* to do so. As a team of American researchers studying public education programmes on earthquakes noted:

Public educators have learned through trial and error that people are generally not motivated by sermons on why they ought to do something. Neither moral exhortations nor discourses on ethical or legal imperatives

produce the desired behaviour change in the average citizen or organization. People are more apt to follow our agenda if they work out a solution themselves, with helpful information from specialists. Not surprisingly, most people are motivated to change their behavior when they think it's their own idea.³

Nevertheless, it is also well-established that people only respond to awareness-raising initiatives by specialists to the extent that they believe the information supplied and those who provide it.

All disaster reduction programmes should include communications and awareness-raising as a central, ongoing element, and should have a clear strategy for doing this. In practice, relatively little time and effort is invested in this area. It is usually no more than a component added to the end of individual projects, undertaken by people without specialist training or skills. Public education therefore becomes fragmented into separate, one-off, short-term interventions, whose impact is rarely assessed.

Box 11.2 sets out 11 steps that ideally should be undertaken in developing and implementing a communications strategy. Note that most of the steps are planning and testing – implementation does not begin until step 10. Pre-testing of methods and materials is essential to ensure their appropriateness and effectiveness.

Box 11.2

Eleven steps in a communications strategy

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|--|---|
| 1. Define the overall project purpose. | 7. Plan coordinated timing of activities. |
| 2. Define the aims of the project's communications strategy. | 8. Formulate communications material. |
| 3. Identify and prioritise audiences and participants. | 9. Participatory pre-testing. |
| 4. Determine information needs. | 10. Implementation. |
| 5. Identify barriers and opportunities. | 11. Evaluation. |
| 6. Identify communication channels and messages. | |

A. Burke, *Communications & Development: A Practical Guide* (London: DFID, 1999), p. 25.

11.3.2 Methods

The individual methods that can be used to raise awareness about risk reduction are diverse.⁴ They include:

- Production and distribution of public information leaflets and posters. This is still the commonest method because it is relatively cheap and easy to manage, and in theory reaches large numbers of people. However, it is likely that the impact of many activities of this kind is severely weakened because of inappropriate images (see Section 11.3.5 below) or poor presentation.
- Public exhibitions about risks, protective measures and new preparedness and mitigation initiatives.
- Hazard and risk maps. If presented in a clear, colourful format, these are a good way of explaining threats to communities and stimulating action.
- Demonstrations. Many projects promoting alternative ways of building to withstand hazards erect model houses or community buildings, both to raise awareness and provide an informal forum for discussion with community members. Model houses are sometimes put on shaking tables in public displays to show how they stand up to earth tremors. Demonstrations are also often used in food security work.
- Use of print and broadcast media to promote safety messages and share information about new initiatives. These reach large audiences and can be cost-effective if used well and targeted carefully. Mass media communication is most likely to be successful if linked to other actions on the ground and if the audiences can get involved (e.g. through community radio stations, audience feedback or competitions). In risk communication initiatives it is principally the news media that are involved. As discussed in Chapter 12, these can be an unreliable ally because of their stereotyped views of disasters, covering them only when they happen and as tragedies. However, there are examples of the media supporting mitigation programmes before and after crises (see Case Study 11.1).
- Disaster professionals have not made much use of the entertainment media, although several agencies have collaborated to produce a radio soap opera called *Tiempos de Huracanes* (Hurricane Season) that provides practical information to rural communities in Central America. Twenty episodes are broadcast annually, before and during the rainy and hurricane season.⁵ The effectiveness of radio and TV soap operas in promoting other kinds of development message, for example HIV/AIDS education in Africa,⁶ should encourage more involvement of this kind.
- Participatory vulnerability analysis and community action planning events

Case Study 11.1

Using radio in drought mitigation

Radio can be a cheap and effective tool in the fight against desertification and drought. In the mid-1990s a team from the Cranfield Disaster Preparedness Centre in the UK worked with three radio stations and local broadcasters in Mali, Burkina Faso and Eritrea on a pilot project to find out how the medium could be used most effectively.

Over a period of 18 months, the project partners researched, recorded and broadcast three radio campaigns on aspects of reforestation. The programmes combined education with entertainment, promoting simple and affordable advice in appropriate formats and local languages. A needs assessment was carried out first to identify the themes of most relevance to listeners, as well as their perceptions of the issues. Scheduling of the broadcasts was designed to achieve maximum impact. Local broadcasters were trained during the programme-making process.

The campaigns' impact was then evaluated through a series of small-scale surveys at village level. The results varied in each country, but

the surveys showed that carefully targeted, well-made radio programmes could produce changes in attitude and behaviour.

For example, in Mali, after programmes had recommended marking and conserving naturally occurring trees, it was found that the number of farmers in the sample group marking their trees increased from 6% to 43%. Knowledge of the correct distance to plant trees apart from each other rose from 25% before the broadcasts to 80% afterwards. These findings were confirmed by the observations of local foresters and extension workers, who noticed an increase in the number of farmers practising conservation measures. Comparisons between villages inside and outside the radio signal area confirmed that the changes were mainly due to the broadcasts.

M. Myers, G. M. Adam and L. Lalanne, *The Effective Use of Radio for Mitigation of Drought in the Sahel: Final Project Report and Recommendations Plus Guidelines for Broadcasters* (Shrivenham: Cranfield University Disaster Preparedness Centre, 1995).

Figure 11.1

Public information poster



Oxfam/IDEA/Sylhet Disaster Forum

Panel from a poster showing how to respond to river flood warnings in Bangladesh

to develop common understanding and mobilise interest and action at the grass roots.

- Community training in technical skills (such as improved construction methods, soil and water conservation, or putting up flood protection structures) and disaster preparedness and response (for example, evacuation drills).

- Conferences, workshops, roundtables and training courses (usually for professionals) to debate issues, introduce new ideas and experiences and determine policies.
- Emergency services' open days make communities familiar with emergency management systems and personnel, and are an opportunity to introduce risk and safety issues.
- Art and photography competitions on relevant themes are popular, especially with children. They often culminate in public exhibitions and can generate publicity.
- Marking the anniversaries of major disasters through ceremonies and publicity in the media, as a way of reminding people of the hazards in their environment and the damage they can cause. Anniversaries can be potent reminders, as well as having psychological value as rituals of grieving and healing.⁷
- Holding annual events to highlight disaster issues. The UN has designated the second Wednesday in October each year as the international day for natural disaster reduction. Agencies in many countries plan events for this day, which is a good opportunity for them to work together to spread public messages. Other countries may have their own special days annually; Fiji has a national disaster awareness week.
- Simple visual devices in public places give permanent reminders of hazards and disasters and are inexpensive. Warning signs can be put up or painted onto walls. Flood high-water levels are often marked on bridges, telegraph posts or buildings. For instance, in the author's secondary school in the UK, which was in a flood plain, the water mark left by a severe flood many years before had been preserved on the wall of one classroom.
- Exchange visits are often used in agriculture and food security programmes. They enable farmers to see alternative farming techniques and methods of drought mitigation (such as soil and water conservation, inter-cropping and the use of drought-resistant seed varieties) and discuss their strengths and weaknesses with those who are using them (see Case Study 11.2).
- Folk media such as plays, songs, story-telling, dance and festivals are widely used in development programmes, notably in health education. Because they are based on indigenous communications practice and traditions, and use local languages, they are regarded as particularly effective in raising awareness. However, little is known about their use and impact in risk/disaster work.
- Community mobilisers and educators are important channels of communication in development projects. Some are project workers, others are community leaders and local people engaged in projects as volunteers. Projects should be aware of how information is normally shared within

Case Study 11.2

Promoting drought mitigation through exchange visits

ITDG's Chivi Food Security Project in Zimbabwe (described more fully in Case Study 15.2, page 260) made considerable use of exposure and exchange visits to acquire and share knowledge about appropriate farming techniques and practices.

Initially, community representatives were taken to see government agricultural research stations, other NGO projects and innovative farmers in other areas.

Representatives were chosen from members of farming clubs and gardening groups. Careful selection ensured that there was a fair gender balance, that leaders and ordinary members were included and that literate and illiterate people took part. The clubs and groups had to agree on who should go on a particular visit. Nobody was allowed to visit twice.

By being shown a wide variety of alternative methods in operation and talking to their users, the community members were able to make informed choices about those that would work best in their own drought-prone district. Subsequently, the project brought farmers and gardeners from other areas to see the methods that the community had adopted as a result of the visits.

The community also instituted 'field days', at which there were competitions to see which plots were using the new methods and technologies most effectively. Farmers from surrounding areas came to watch and talk.

K. Murwira, H. Wedgwood, C. Watson, E. J. Win and C. Tawney, *Beating Hunger: The Chivi Experience. A Community-based Approach to Food Security in Zimbabwe* (London: I. T. Publications, 2000), pp. 61–70.

and between communities. A great deal of information exchange takes place informally, within families, at village meetings, while collecting water at the well, at markets. It is oral, not written. It reaches people who are often not reached by newspapers, radio or government extension workers.⁸

- The internet, which is becoming rapidly more important, is discussed separately below.

11.3.3 Choice of methods

In taking a strategic approach to creating a culture of safety, risk reduction initiatives need to use a mixture of methods according to circumstances. The mix is likely to change over time as some methods are found to be more effective than others, or their effectiveness is diluted as they become familiar to the public.

There is no perfect medium or method for communicating, but in any situation the best will be those that are appropriate to the people who are involved. People the world over have their own preferred ways of receiving and sending information. Communities are not homogeneous, and methods that work well for one group may be inappropriate for others. Communications with poor and marginalised groups can be particularly challenging because they have limited access to standard media and information sources on account of illiteracy, language barriers, physical remoteness and poor transport, social isolation, and lack of televisions and radios. Projects should identify these differences within society and try to use the methods that are most suitable for reaching particular groups.

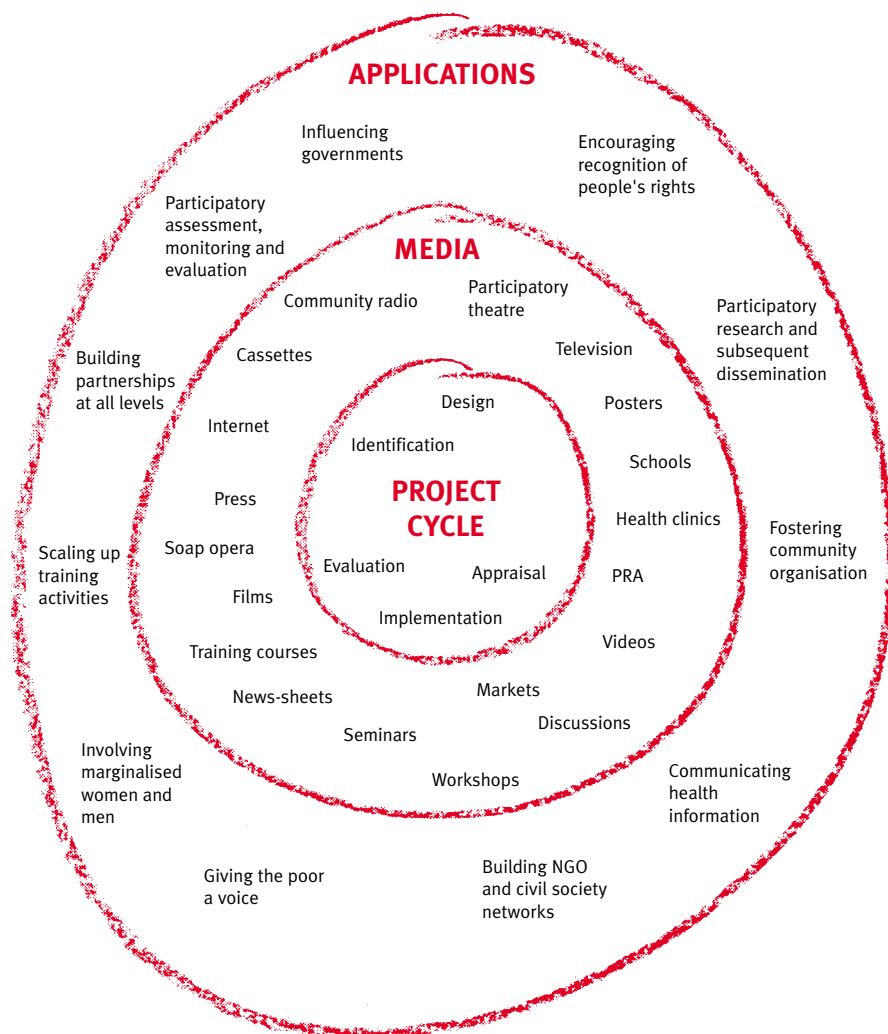
Project workers should be imaginative in their use of communication methods and look beyond the usual channels. An NGO in Peru seeking to raise awareness of its project promoting alternative technologies for self-built earthquake-resistant housing targeted local taxi drivers when it discovered that they played an important role in spreading information.⁹

Many risk communication initiatives are based on 'active' information – i.e. exhortations to people to do something. But it may be just as important to use 'passive' information: making sure that when people do want more information or have questions, the material or answers they need can be obtained easily. A combination of active and passive information is often useful.¹⁰

Personal experience of a recent disaster is a powerful force in inspiring people to take protective actions. In the Indian state of Orissa, purchases of radio sets by villagers in coastal districts have increased considerably since the October 1999 cyclone. The sets enable people to listen to weather forecasts and storm and flood warnings.¹¹ This 'window of opportunity' for public education and mobilisation may not remain open for long, as the anxiety about disasters is supplanted by everyday concerns and complacency sets in.

There are obstacles to maintaining public information facilities such as documentation centres and networks for distributing materials. The main one is

Figure 11.2
Communications and the project cycle



Burke, *Communications & Development*, p. 24.

the difficulty of securing ongoing funding. Another problem is that growing demand for information as a result of successful dissemination increases workloads and may require extra capacity. Charging users for materials and services rarely produces enough income to cover costs, and excludes the poor.

Finally, it is always advisable to get help from communications specialists when planning and implementing initiatives.

11.3.4 Controlling information

Many experts emphasise the importance of a single source of information on risk and disasters in order to ensure that messages are reliable and consistent. This is a particular concern with forecasts and warnings of imminent events, where mixed and inaccurate messages can cause chaos and inappropriate responses and, ultimately, magnify the impact of the disaster. But in an age where people have access to more and more sources of information – in the media and on the internet – such controlling and centralising of information supply is no longer feasible, except perhaps under a few authoritarian regimes, where in any case the public may not trust ‘official’ sources.

Disaster managers will have to work with communities that are increasingly able to choose and question the information they receive. They will have to acquire extensive skills in media management. They will also have to move away from the old supply-side approach to communications, where experts at the top or centre issue information outwards and downwards to target groups. Instead, they will have to adopt a more demand-led approach that sees communities at risk as *consumers* of information from different sources, exercising a right to choose what information to use and where to obtain it.

This will make their task more difficult, without doubt. On the other hand, there is some evidence to suggest that people are able to use multiple sources of information effectively to reduce the impact of potential disasters (see Case Study 11.3).

11.3.5 Images

Visual images have a powerful impact. People are moved by visual messages more than verbal ones, and tend to remember them better. This is obviously likely to be the case in societies with low literacy levels, but it is also true in well-educated communities.

Case Study 11.3

Information and disaster preparedness

A real-time study carried out for the NGO SOS Sahel looked at the dissemination of information on the 1997–98 El Niño event and its likely impact on drought in Sub-Saharan Africa.

Although the researchers looked principally at responses by governments and international agencies, they also found that in some African countries farmers were:

- acquiring information independently from a variety of sources including the internet and cable television;
- forming their own judgements

about the validity of that information;

- on the basis of that judgement, making calculated decisions about what type of seed to plant, and when; and
- acting upon those decisions.

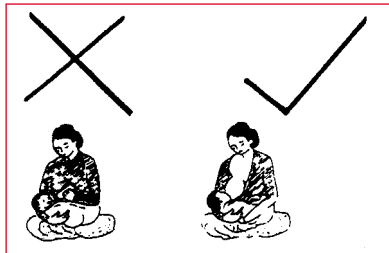
This was despite the fact that it is not easy for the layman to interpret some of the meteorological data on El Niño, and despite African farmers' often sceptical view of the accuracy of weather forecasts.

A. Thomson, P. Jenden and E. Clay,
Information, Risk and Disaster Preparedness: Responses to the 1997 El Niño Event (London: SOS Sahel, 1998).

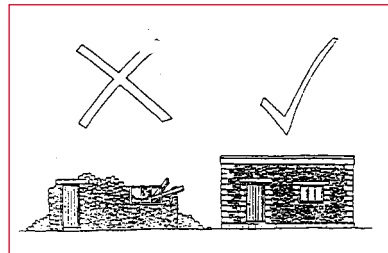
Even top-level decision-makers can be influenced by well-chosen images. Scientists monitoring Mount Pinatubo in the Philippines before its eruption in 1991 used a video with sometimes shocking footage of other eruptions to brief government officials (from the President down to local staff), students, teachers, religious leaders and communities about what was likely to happen. This proved highly effective in overcoming scepticism and persuading people to prepare for the impending event.¹²

However, it is easy to go wrong in producing material based on visual images. Do not assume that images speak for themselves: they must be interpreted. The way in which they are interpreted is strongly conditioned by local cultures and visual traditions. A diagram that is easily understood by a community in one place may not make any sense to another group of people somewhere else (see Figure 11.3).

Figure 11.3
Interpreting images



In a study in Nepal only three per cent interpreted the tick and the cross as indicating good and bad ways to feed a baby.



In this drawing indicating good and bad houses in northern Pakistan, the cross was interpreted as a ceiling fan and the tick as an Urdu 7.

E. Dudley and A. Haaland, *Communicating Building For Safety: Guidelines for Methods of Communicating Technical Information to Local Builders and Householders* (London: I.T. Publications, 1993), p. 43.

Finding the right images, and using them in the right way, requires considerable skill. Trainers and field workers can use images effectively in their work, but they must take time to explain them and answer questions. Their skills as communicators will determine how effective the images will be.

Video is increasingly used, but although videos can now be made quite cheaply and easily a high level of technical and editorial skill is needed to produce good ones.

11.3.6 Evaluation of impact

There is limited evidence for the impact of communications methods on reducing risk. It is difficult to measure impact. Conventional monitoring exercises such as surveys of shifts in attitude and behaviour, and monitoring the performance of practice drills, give some useful insights, but the ultimate test is how people behave when a real disaster threatens or strikes. There is also the problem of attribution: it is hard to tell how much people learned from a specific public information programme, and how much from other sources.

Writing on development communication gives some general recommendations regarding evaluation of communications activities that can be applied to risk communication work:¹³

- Well-established ‘audience research’ methods can be used to find out how many people received particular information and what impact it had on their thinking and action. These include questionnaires, structured interviews and more qualitative in-depth interviews.
- Valuable information can be collected from informal and relaxed conversation with those receiving messages, or through more participatory initiatives.
- Participatory communications approaches can be applied to evaluation. Folk drama or other community-based methods can be used to give people an opportunity to present their own views on an issue or how well a project is doing. Focus groups are also commonly used. In the broadcast media, listeners’ letters and responses to quizzes and competitions provide useful qualitative indicators.
- Rather than carrying out large-scale surveys, it may be easier to work with less direct indicators, relying more on triangulation (cross-checking) of a number of simpler evaluation techniques. This is likely to be cheaper as well as faster, and indicators can be based on verbal or other evidence of change.
- It is often difficult to tell if a communications initiative was genuinely responsible for changes that have taken place. These may be the result of other events, activities and shifts in opinion for different reasons.
- With simple messages, it might be possible to evaluate the extent to which a group of people is aware of a particular message or changes its behaviour. This requires extensive survey work that would need to build on an equally extensive baseline.

It should be noted that the value of impact evaluations is limited if baseline data about attitudes and behaviour have not been collected.

11.3.7 Educating about risk in schools

Many disaster mitigation and preparedness programmes have attempted to introduce disaster issues into schools, in settings ranging from offshore islands in Bangladesh to US high schools. Education on health, safety, hazards and environmental issues is standard in many countries, incorporated to a greater or lesser extent into the formal curriculum with the aim of increasing children’s understanding of risk and teaching them how to prepare for hazardous events and react when one occurs (see Case Study 11.4).

Case Study 11.4

Earthquake education in Armenia

Armenia suffered a devastating earthquake in 1988, which killed more than 25,000 people and left half a million homeless. Reviews of the event showed that lack of awareness of basic protection during earthquakes contributed to the high number of casualties.

In 1997, a project was launched by UNICEF, the government's earthquake protection office and an Armenian NGO to train 500 teachers and 10,000 pupils in 56 primary and middle schools in seismic protection skills. A second project, covering 450 pupils from a further 12 schools, began the following year, on the tenth anniversary of the earthquake.

The projects produced educational materials and created interactive

games. Children were encouraged to express themselves through drawings. Teachers and parents appear to have found the projects necessary and timely.

A. Mikayelyan, 'Earthquake Mitigation from a Gender Perspective in Armenia', paper delivered at the UN Division for the Advancement of Women/International Strategy for Disaster Reduction Expert Group Meeting on 'Environmental Management and the Mitigation of Natural Disasters: A Gender Perspective', Ankara, Turkey, 6–9 November 2001, www.un.org/womenwatch/daw/csw/env_manage/documents/EP8-2001Oct31a.pdf;
 A. Mikayelyan, 'Teaching Seismic Protection Skills in Schools', contribution to the ISDR internet conference for the Johannesburg Earth Summit, 2002, <http://earthsummit2002.dyndns.org>.

Even without formal disaster teaching in the curriculum, individual teachers may choose to introduce particular aspects that are relevant to their community. Schools also arrange educational visits to or by local emergency services. Local NGOs working on disaster reduction could probably be more active in offering to visit schools, talk to pupils and support school preparedness initiatives.

The potential value of the school-based approach is obvious. It can reach large numbers of people who are already gathered to learn and are essentially teachable. Children are believed to be more receptive to new ideas than adults, and it is also believed that they influence their peers and their parents. Nevertheless, projects working with schools should be realistic about what they can expect to achieve. There are potential problems. First, it seems that most school educa-

tional work on disaster reduction focuses on a single issue, such as earthquakes, fire risk or volcanic eruptions. Some educators question if this is the best approach, arguing that disaster preparedness should be presented as a total package equipping children to deal with all emergency situations, which could be carried into a range of core subjects in the curriculum, such as mathematics, science, history, geography and citizenship.¹⁴

Another issue is how far the formal education system, especially the schools curriculum, can adapt to incorporate different perspectives on disasters. Where the curriculum is relatively rigid, it may be easier to teach about hazards (which fit with standard science or geography teaching) than socio-economic vulnerability or disaster management. A study of teaching about disasters in secondary schools in the UK – admittedly not a very disaster-prone country – found just such a focus on hazards.¹⁵ In some developing countries, where teaching resources and capacity are limited, it is hard to imagine teachers being able to do much to adapt the basic curriculum. In such situations, other agencies such as NGOs or local emergency planners could step in to help.

The outreach of the formal education system may be limited in some developing countries where there is a shortage of schools and trained teachers, attendance rates are low and certain groups such as girls and the children of the poor are likely to drop out at an early age.

Finally, although there is widespread agreement on the value of schools initiatives, there has been hardly any evaluation of their impact. It seems that risk/hazards education through this route does lead to more accurate perceptions of risk and better understanding of protective measures. It can also reduce fear of hazards (children appear to be worried about not knowing how to respond to an event). But it is much harder to evaluate children's subsequent behaviour with regard to risk and its reduction – still less, whether they have influenced the attitudes and behaviour of their families.

Some research suggests that improved awareness of risk and mitigation among school students does not lead to changes in disaster preparedness at home.¹⁶ However, it may be able to change behaviour in some contexts. For example, a project in western Kenya taught primary school children to cultivate traditional vegetable varieties that could provide additional food and nutrition during the hungry period, and there were signs that consumption of these varieties rose in households whose children had been involved in the project.¹⁷

The lack of evidence makes it difficult for educators and disaster planners seeking to design and implement such programmes to judge which approaches

are most likely to work well in particular circumstances. A few studies and evaluations now beginning should shed more light on this subject

Case Study 11.5 describes an initiative that was able to demonstrate impact in terms of improved response *at school* to earthquake warnings. Disaster preparedness response can be managed relatively efficiently in the controlled school environment, and is very important because of the large numbers of people concentrated there.

11.4 Professional training and education

This aspect of risk reduction has not been studied. It should be, since professional training and education are essential components of capacity-building in organisations.

Case Study 11.5

Educating for earthquake preparedness

After the large earthquakes that struck Mexico City in 1985, scientific agencies and city authorities established an early-warning system capable of giving about one minute's warning of tremors. Linked to this was a school emergency and security programme aimed at improving the response of teachers and students to a variety of hazards.

The schools, which are linked to the early-warning system by special receivers or radios, prepare disaster action plans covering monitoring the state of school buildings, evacuation drills and first aid and rescue. Teachers, parents and students form school security committees and teams responsible for establishing

safety zones, training and preventive action.

Emergency drills are carried out at least once a month in more than 6,200 schools in Mexico City, involving over 1.9m students. The speed of practice evacuations varies according to the nature of the buildings, but primary schools average 80 seconds to evacuate and secondary schools range between 45 and 90 seconds.

J. M. Espinosa-Aranda et al., 'The Seismic Alert System in Mexico City and the School Prevention Program', in J. Zschau and A. N. Küppers (eds), *Early Warning Systems for Natural Disaster Reduction* (Heidelberg: Springer Verlag, 2003), pp. 441–46.

There seems to be a high demand for training in the theory and practice of risk reduction among government officials at different levels, and civil society organisations. It is not clear how far this indicates a demand specifically to increase capacity in risk management: it may reflect the generally high level of demand for training in all aspects of sustainable development. Work on NGOs and disaster mitigation indicates that training does influence individuals who take part in courses, but there are still challenges to ‘internalising’ the training at organisational level, and more attention to long-term follow-up is required. There is a fear in some quarters that NGOs, especially local ones, are placing too much faith in training courses by themselves and not seeing them within the wider context of capacity-building.¹⁸

The number and range of courses on risk and disaster management also seems to be increasing.¹⁹ There are more MSc courses on offer in universities, and even some undergraduate courses. Hazards, risk or disaster modules are also being added to mainstream courses, although most university courses are still in Europe and North America, and hence focus on disaster management in the North.

Shorter courses are available in a variety of subjects. At one time, most training efforts focused on government staff, with regional and international courses. In the early 1990s, the UNDP and the UN’s Department of Humanitarian Affairs developed an extensive disaster management training programme, which has produced modules on nearly every aspect of the subject for other agencies to use.²⁰ There has also been much more interest in community-based disaster mitigation and preparedness, with courses run in Asia at regional level by the Asian Disaster Preparedness Center (ADPC), and at national levels – for instance, by the Disaster Mitigation Institute (DMI) in India and by the International Institute for Disaster Risk Management (IDRM) in the Philippines.²¹ Helpful training materials for project and community workers have been produced, notably the *Reducing Risk* resource book, which is based on participatory learning methods, and which has proved popular with NGO field staff.²² Distance-learning materials are also available. Such courses originated in North America, where the Disaster Management Center at the University of Wisconsin was a pioneer.²³ Courses that focus more on developing-country contexts are starting to appear. These include the Certificate in Disaster Management run by the Indira Gandhi National Open University in India and the Diploma in Integrated Risk and Disaster Management launched for Latin America by the Centro Internacional de Métodos Numéricos en Ingeniería (CIMNE) and Structuralia SA in Spain.²⁴

Little is known about agencies' internal training courses. Some international NGOs have given training to local offices and partners, particularly in Africa. Again, we know little about the nature and extent of these, or their impact. There are many lessons to be learned and shared about this kind of work. Case Study 11.6 illustrates some of them.

Agencies' experiences suggest that the following questions should be asked when considering running training courses or sending staff on other institutions' courses.

- Does the demand for training in your organisation reflect a genuine need, or is 'training' seen as a panacea without proper consideration of its cost or value? Training is costly. Be clear about what it can realistically deliver. Set goals and indicators.
- How will you ensure that the skills and knowledge individual trainees receive are applied and shared across the organisation?
- Do you have a long-term training plan in this area? One-off training is not very effective in changing attitudes and practice, unless there is adequate follow-up in the form of additional training or on-the-job support.
- Are there courses available that meet your needs, run either by specialist training institutions or by other organisations for their staff and partners? If not, is it cost-effective to design your own, or might it be better to collaborate with other agencies in this?
- Are you aware of the training materials that are available? Could you adapt these to your own purposes, as free-standing training or integrated into your existing staff development programmes?
- Is conventional training in risk or disaster management really what your staff need? How useful is it to learn the details of disaster theory and technical terminology, which is a major part of many courses?
- Is formal training the best way for your organisation to acquire new ideas? A lot of information spreads informally in organisations.
- Should your organisation act as an educational 'multiplier', by extending training to community organisations? Is the 'training of trainers' approach the best way of supporting local partners (see Case Study 11.6)?
- Training generates demands from staff and partners, especially for follow-up initiatives (which require resources). Those who provide training, or help others to get it, have a responsibility to support activities that arise from it. Does your organisation have the motivation and capacity to do this?

Case Study 11.6

Training of trainers

Between 1997 and 2001, the British NGO Christian Aid implemented a 'training of trainers' programme in disaster mitigation and preparedness for its partners in eight countries in East and West Africa.

Four eight-day training workshops were held: two regional and two national, each of which was preceded by a training needs assessment. The workshops covered two subjects: disaster mitigation and preparedness concepts, and training of trainers techniques. Ninety-two people took part from 52 organisations. There was an evaluation of each workshop 12–18 months afterwards.

The evaluations showed that the programme had succeeded in raising participants' awareness of how vital risk reduction was to their work. Many participants organised small-scale mitigation initiatives on their return, with seed funding from the programme. These included further training or awareness-raising workshops for local organisations and community groups, measures to improve food production and income-generating projects to strengthen livelihoods against risks. There were many examples of partner organisations

and their local partners adopting ideas and techniques from the training.

With hindsight, the training might have been more effective if it had focused on one level (institutional or community) and dealt with fewer topics in more depth. The impact of the training depended greatly on the commitment and capacity of each of the agencies and participants. Training of trainers programmes should not be stand-alone initiatives. Recognition of the need for ongoing support to partners beyond the programme was an important lesson. This would require a variety of supplementary components to build skills.

Another – unplanned – consequence of the programme was that it raised the profile of disaster mitigation and preparedness within Christian Aid itself, and is leading to better integration of risk reduction in the NGO's emergency and development work.

M. Todd, 'Training of Trainers in Disaster Mitigation and Preparedness: West and East Africa. End of Project Report', (London: Christian Aid, 2002).

11.5 The internet

The internet is bringing about an information revolution in risk reduction. This has been so sudden that it is hard to predict where it will lead, but it has already led to greatly improved communications and understanding between professionals and greater capacity to communicate with the public.²⁵

11.5.1 Email

The use of email is expanding rapidly among organisations and individuals, and although there are legitimate concerns about uneven access to the internet leading to a growing 'information gap' between North and South, developing-country researchers, government institutions and NGOs are increasingly coming online. There are indications that email's ease of use – leading to greater frequency of messages – and the relaxed style of communication it encourages are improving the quality of relationships between individuals in different agencies.²⁶

Electronic list-serves and newsletters are becoming more numerous. These are generally managed by an institution or group. Many agency newsletters on risk reduction merely promote the organisation and its activities, but others take on a more general information-sharing role. These include the UN's Integrated Regional Information Networks (IRIN), which sends out frequent news briefings on potential and ongoing disasters and their background in Sub-Saharan Africa and Central Asia. Another influential newsletter is *Disaster Research*, published by the Natural Hazards Research and Applications Information Center at Boulder, Colorado, which is sent to over 2,700 people worldwide.²⁷

In most cases, anybody can subscribe to such services and they are free, but some are limited to members or observers of a particular network, as in the case of the Active Learning Network on Accountability and Performance in Humanitarian Action (ALNAP).²⁸ There has been little assessment of their impact (IRIN was being evaluated at the time of writing), but the number of subscribers is a good indicator of their perceived value.

Email discussion groups or lists are an effective way of sharing information and creating links between professionals in different countries. They can be set up easily and cheaply, and are usually managed with little effort (unless they are 'moderated' – i.e. all messages have to be screened by a coordinator for relevance before being sent out). Many internet service providers offer facilities for running discussion groups and some academic institutions support them. In most cases, anybody can join. However, few are well-adver-

tised, which makes them hard to find. Some become largely inactive after an initial burst of enthusiasm. Others become dominated by a few individuals, leaving the remaining members excluded. In discussion groups that are not moderated, there is a risk of too many trivial messages being passed around.

Case Study 11.7

Information-sharing through an email discussion group

Established in 1994, *natural-hazards-disasters* is a multidisciplinary email discussion group/network covering the socio-economic, psychological, organisational, scientific and technical aspects of all kinds of disaster triggered by natural and technological hazards. It is open to anybody who is interested, anywhere in the world, by signing up through its website (<http://www.jiscmail.ac.uk/lists/natural-hazards-disasters.html>).

A review and membership survey carried out in 2000 sought to find out more about the 263 members and how they used the list. Between February 1999 and May 2000, 348 messages were posted. While several members were very active in contributing, 30% of the membership had sent at least one message during the period.

The main kinds of message posted were requests for information and questions to other members, replies to those questions and debates arising from them, and messages sharing information generally. A wide

range of topics was raised, including good practice in community participation, hazard/disaster perception and awareness, definitions of vulnerability, and estimating the cost of damage from natural disasters.

Twenty-six per cent of respondents to the questionnaire survey found the network very useful, 65% found it useful and only 9% not useful, although some of these described it as 'interesting'. When asked to explain how it was useful, respondents highlighted the exchange of information (principally about events, websites, documents and professional contacts), keeping up to date with current ideas, debates and issues ranging beyond their own fields, and getting an international perspective on such matters. One member pointed to the value of contributions from members in developing countries.

J. Twigg, 'Natural-Hazards-Disasters: Report of a Review and Membership Survey', unpublished report, Benfield Hazard Research Centre, London, 2000.

Electronic conferences give researchers and practitioners around the world an opportunity to take part in a debate on a particular issue. They can last a few days or weeks – two to three weeks seems to be a good duration, as it allows participants time to read submissions and formulate their own contributions. Some focus on specific issues and are particularly favoured by researchers. Others, such as those hosted by the UN IDNDR and ISDR, have taken on much broader themes and attracted considerable interest among disaster specialists.

Electronic conferences need to be well-advertised to ensure adequate participation, and some research and discussion papers must be commissioned well in advance to stimulate debate. Technically, electronic conferencing is not that difficult, but the management is time-consuming and it should not be undertaken unless there is sufficient staff capacity, nor without good preparation. It makes sense to collaborate with those who have experience of running such events.

11.5.2 The worldwide web

Through the worldwide web it is possible to make great volumes of information accessible to internet users throughout the world. For users in the South, the cost and difficulty of access remain obstacles to using the web regularly, but elsewhere it is becoming a primary source of information for people working on risk reduction.

Many agencies have their own websites. These are often run mainly for publicity and fundraising purposes, particularly in the case of NGOs, but some contain information of value to other professionals, such as studies, reports and guidelines. The Natural Hazards Research and Applications Information Center has a good directory of useful sites.²⁹

Larger agencies are starting to develop intranets (websites that are only open to their own staff). For example, the IFRC is developing a Disaster Management Information System (DMIS), which aims to provide a comprehensive set of all documents relevant to the Red Cross/Red Crescent movement at its different levels, including situation reports, background information on countries and disasters, practical guidelines and information on resources available for operational work, and templates for project proposals, reports and other standard documents. In time, part of this site will be made publicly available.

Disaster relief is well served by sites that collect and store situation reports, emergency appeals and background data – notably the ReliefWeb site run by

the UN Office for the Coordination of Humanitarian Affairs (OCHA).³⁰ The web is also a valuable source of technical information on hazards, and a number of sites provide information for forecasts and warnings, especially of hydro-meteorological disasters such as cyclones, drought and El Niño events: for example, the USAID-funded Famine Early Warning System Network (FEWSNET), the UN Food and Agriculture Organisation's Global Information and Early Warning System on Food and Agriculture (GIEWS), and the site of the US government's National Oceanic and Atmospheric Administration (NOAA).³¹

In the US, which has the highest proportion of internet users of any country, government and non-profit organisations make extensive use of the web, not only for forecasting and warning but also as public education channels giving a wide range of general and specific advice on reducing risk (see Case Study 11.8). The US sites are pointers to the web's potential for educating and supporting the public.

Agencies are increasingly publishing books, guidelines, reports, journals and newsletters electronically as well as in print, and many of these are available free of charge. For example, two major research and information centres in

Case Study 11.8

The web as a resource for risk reduction

The website of the Federal Emergency Management Agency (FEMA) in the US (www.fema.gov) contains a huge amount of information to help the public. This includes:

- information on individual hazards and how to deal with them;
- guidance for families, communities and local officials on various aspects of mitigation, preparedness and response;
- advice on the kinds of assistance available to those affected by a disaster, and how to obtain it;
- details of a range of government mitigation and emergency assistance programmes;
- educational resources for teachers;
- a site designed specifically for children;
- an online library containing official and public information documents, photos and maps;
- information on training courses, seminars and conferences; and
- news and situation reports.

the US, the Disaster Research Center (DRC) at the University of Delaware and the Natural Hazards Research and Applications Information Center (NHRAIC) at the University of Colorado, Boulder, put all their new research reports on the web, as well as many of their old ones.³²

Much of the online literature is 'grey', and so does not feature in standard library catalogues, although some can be identified through web-based catalogues such as the HazLit database run by the Natural Hazards Research and Applications Information Center (it covers printed and online material) and the eldis gateway site run by the Institute for Development Studies at the University of Sussex, which covers all aspects of sustainable development and has 12,000 documents online.³³

Email has been used more than the web to facilitate debate, although email conferences are often linked to websites where all relevant documents and communications are posted. When it was launched early in 2001 the Radix (Radical Interpretations of Disaster) website was innovative in seeking to provide a permanent forum where ideas could be posted and discussed, and it continues to present new and alternative perspectives that stimulate lively debate.³⁴ The Gender and Disaster Network (GDN) is an example of web-centred networking.³⁵

There are two main problems facing users of the web in operational agencies. One is the sheer volume of information available. A search for information on a single item, such as El Niño, can produce thousands of websites. The other problem is the lack of quality control. Without a lot of searching and experience, it is impossible to know which sites are most reliable and useful. Little guidance is available on sites dealing with disaster reduction and the rapidly-changing nature of the web, with sites constantly being created, changed and shut down, makes it difficult to keep such guidance up to date. Directories of disaster websites are of limited help, since they usually provide ever-growing lists. This problem has to be overcome if the web is to fulfil its potential as a tool for supporting work on risk reduction.

11.6 Chapter summary

- Communication about risk reduction needs to be approached as a dialogue and exchange of information with vulnerable people, not as one-way information dissemination.
- Disaster managers can learn a lot from the experiences and practices of development agencies.
- All disaster reduction programmes should include communications and

Box 11.3

Checklist of good practice in risk communication

1. Think strategically.
2. Plan and prepare carefully.
3. Devise a series of actions to build up awareness and mobilise communities in the long term.
4. Ensure that you understand how people process and evaluate information about hazards and risks.
5. Focus risk communication on changing behaviour, rather than merely improving understanding.
6. Use methods of communication that are most acceptable to the communities concerned. Be prepared to spend time and effort to find out which methods are most suitable.
7. Where your public is diverse, adapt the information and communications method to the needs and tastes of each target group, and set priorities where you do not have the capacity to communicate with everyone effectively.
8. Ensure that technical information is presented in accessible formats.
9. Check that the materials or advice being given are comprehensible, credible and consistent.
10. Ensure that the actions suggested are feasible and that people will be motivated to act (and not panic).
11. Pre-test materials and methods to make sure they are effective.
12. Acknowledge the likelihood that apathy and information overload will affect people's response to messages.
13. Acknowledge that people's attitudes to hazard risks are influenced by other factors such as cultural traditions or the need to maintain insecure livelihoods.
14. Provide interactive communication and pathways for questions and requests for further information.
15. Reinforce the message over time, and add new information and ideas, as part of an overall strategy.
16. Evaluate your work and share the findings with others.

Based on R. Steen, *A Guide to Information Preparedness* (Oslo: Directorate for Civil Defence and Emergency Planning, 2000); B. Rohrmann, 'Effective Risk Communication for Fire Preparedness: A Conceptual Framework', *Australian Journal of Emergency Management*, vol. 10, no. 3, 1995, pp. 42–46; and S. Nathe et al., *Public Education for Earthquake Hazards* (Boulder, CO: University of Colorado, 1999), www.colorado.edu/hazards/informer/infrmr2/infrmr2wb.htm.

awareness-raising as central components, and should have a clear communications plan.

- Creation of a 'culture of safety', in which risk awareness and the adoption of risk-reducing measures are part of daily life, is a long-term process.
- A wide variety of methods is available, some of which are relatively simple. The right mix will vary according to local contexts.
- Evaluation of communications initiatives presents several practical challenges, and little is known about their effectiveness.
- Risk education through schools has considerable potential, if approached pragmatically.
- Opportunities for professional training and education are growing, but careful thought should be given to the appropriateness of courses, especially at the agency level.
- The internet is greatly improving communications between practitioners. The worldwide web could play a significant role in educating and supporting the public.

Notes

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- 4 See A. Burke, *Communications & Development: A Practical Guide* (London: DFID, 1999); G. Adam and N. Harford, *Health on Air: A Guide to Creative Radio for Development* (London: Health Unlimited, 1998); *Appropriate Technology* special issue on communications, vol. 19, no. 2, 1992; R. Steen, *A Guide to Information Preparedness* (Oslo: Directorate for Civil Defence and Emergency Planning, 2000); E. Dudley and A. Haaland, *Communicating Building for Safety: Guidelines for Methods of Communicating Technical Information to Local Builders and Householders* (London: IT Publications, 1993).
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Chapter 12

Policy, regulation, accountability and advocacy

An appropriate policy and regulatory framework is an essential part of risk management. This is government's responsibility, but civil society organisations can do much to influence it.

Two main issues are covered in this chapter:

1. How particular policies, laws and regulations can help to reduce risk. This section will be short and mainly descriptive, showing what is desirable and possible.
2. How governments and other agencies can be persuaded to set and enforce appropriate policies and standards.

12.1 Policies and regulations

12.1.1 National frameworks

There are many different ways of reducing risk through policies and regulations that can be built up incrementally. Even so, every country should have an appropriate national policy and legislative framework.

There is no standard model for this, but normally it would comprise the following:¹

- a disaster (or risk) management policy that addresses preparedness and mitigation;
- a strategy for attaining policy goals;
- a legal basis for actions: this can take the form of acts of parliament creating the necessary administrative structures and financial instruments, and setting relevant laws and regulations (e.g. concerning building standards or land use); and
- administrative structures and systems with the human, technical and financial capacity to implement the disaster management strategy, at all levels of government and integrated with other government departments.

12.1.2 Methods and approaches

Within such a framework, a variety of policies, regulations and procedures can be used to address particular kinds of risk and hazard.² They include:

- *Engineering and construction measures.* These comprise design standards, building codes and performance specifications. They ensure that engineered structures withstand particular hazards and forces.
- *Legal measures.* The law can be used to provide penalties and incentives. Enforcement of engineering standards, health and safety regulations or environmental protection will be weak if there is no adequate legal back-up that authorises penalties for non-compliance. Legalisation of land or property ownership, and laws protecting tenants' rights, are good examples of legal incentives. By giving people greater security, they encourage them to invest more in protecting their property (e.g. by strengthening houses or improving drainage systems). Laws can also define rights to protection and post-disaster assistance.
- *Planning regulations.* These can be used to prevent the use of hazardous areas such as flood plains or unstable hillsides for housing or commercial development, and to keep hazardous industrial activities away from population centres. Many urban plans involve 'land zoning' of this kind. Planning should also ensure that public facilities (e.g. hospitals, emergency services, schools, water and power supplies, telephone exchanges, transport infrastructure) are kept away from hazardous zones as far as possible, and that they are not over-concentrated in a few places. For the same reason, regulations may restrict population density in a given area. Ensuring escape and access routes, creation of open spaces as areas of refuge, separation of buildings to reduce fire risk, and creation of green or wooded areas to assist drainage are among other risk-reducing measures governed by planning regulations.
- *Financial measures.* Financial incentives such as the provision of grants, 'soft' loans or tax breaks to companies, communities and individuals can be used to encourage investment in safer construction and mitigation measures, including location in safer areas. Alternatively, financial penalties – fines and taxes – may be used to discourage bad practice. Chapter 13 describes the economic and financial mechanisms that non-governmental agencies can deploy.
- *Economic measures.* These too are discussed in Chapter 13. One of the most valuable measures that can be taken is economic diversification. This reduces risks to the economy as a whole by reducing over-reliance on sectors that may be particularly vulnerable to certain hazards.

12.1.3 Challenges

Each of the approaches outlined above presents its own practical problems, but overall there are three main challenges to disaster reduction through policy and regulatory mechanisms.

1. *Capacity.* The methods described above add up to a comprehensive package of risk-reducing measures. Extensive political and legislative skills will be needed to deal with powerful groups whose interests may be affected, and to design effective laws and regulations. Government capacity to implement the measures will have to be built up. To put such a package in place requires a lot of time – probably decades – and it will need refining frequently in the light of experience. This is a major challenge to any government.
2. *Enforcement.* Laws and regulations are useless if they are not enforced. For example, engineers and builders must be aware of building codes and design standards, understand them, know how to use them and accept their importance. For this to happen, awareness-raising and further professional training may be needed, and there must be a sufficient number of trained officials to ensure that the codes and standards are adopted.
3. *Population growth and poverty.* Land-use regulations in many developing countries are also weakly enforced, for reasons including commercial pressures, rapid growth of urban populations and corruption. However, land zoning generally presents major problems where poor people are concerned. Banning people from settling in hazardous areas, or evicting them when they do, is unlikely to succeed because the socio-economic pressures forcing them to live in such locations are too great.

12.2 Accountability: general principles and approaches

Given that such measures are mainly the responsibility of the state, and of central government in particular, what should the role of non-state actors be? How far can and should they take responsibility for such matters?

Non-state actors have two important roles to play.

1. They can lobby for better policies and regulations, and for the enforcement of those in place. This includes challenging decisions and plans that may increase risk.
2. They can press governments, international aid agencies and NGOs to be more accountable to those who are at risk from hazards, or who are victims of disasters.

This is basically a question of accountability. The principle of accountability lies at the heart of genuine participation and community involvement in disaster reduction. It can be applied to everyone, from village elders to the UN. It applies to state institutions that are expected to be accountable through the democratic process, and to private sector and non-profit organi-

sations which are not directly subject to democratic control. Although a universal principle, it allows for variation in method, from simple transparency at one end to democracy at the other.

The process of accountability can usefully be seen as a cycle with four main stages:³

1. Agreement of clear roles and responsibilities of organisations and individuals.
2. Taking action, for which organisations/individuals are responsible.
3. Reporting on and accounting for those actions.
4. Responding to and complying with agreed standards of performance and the views and needs of stakeholders.

Accountability is an emerging issue in disaster reduction work. There are relatively few examples of practical approaches, and there has been little comparative study or analysis. Much more work of this kind is needed before comprehensive guidelines of good practice can be developed. Nevertheless, some of the basic issues and questions are clear enough.⁴

There are two main types of accountability:

1. Functional accountability – this focuses on short-term actions, resources and their use, and immediate effects.
2. Strategic accountability – this looks at the wider and longer-term impact of interventions.

In non-governmental agencies, accountability is not straightforward, for agencies are accountable in many different ways: to the people they aim to help, to donors, to their own mandates and to the legislative frameworks in which they operate.

Accountability generally works in two principal, but very different, directions:

1. ‘Downwards’ – to beneficiaries, local partner agencies, staff and supporters.
2. ‘Upwards’ – to boards of management, donors and governments.

In practice, most interventions involve both kinds of accountability, and apply it in both directions, but the balance is crucial. Often, disaster (and other) professionals concentrate on upwards accountability at the expense of downwards accountability. This reflects the dominant influence of donors and governments in disaster and development work, manifested most visibly in

the movement towards rigid formats, bureaucratic reporting, short-term quantitative targets and standardised indicators. The very fact that there are multiple lines of accountability can lead to confusion operationally, and problems often arise from the difficulty of setting priorities and reconciling competing demands.

External forces are not the only drivers of accountability. Many organisations – especially not-for-profit ones – see greater accountability as valuable in itself, because it improves their performance. Value-driven organisations are more likely to adopt accountability for principled reasons.

Accountability should be primarily towards those who are vulnerable to hazards and affected by them. Listening to disaster-affected people is essential in identifying genuine problems and priorities, as well as being an essential step towards letting such people take part in and exercise some control over what the American researcher Kenneth Hewitt calls ‘the impersonal processes and citadels of expertise that tend to dominate the disaster community’.⁵

12.3 Models of accountability

Many methods have been used to make risk and disaster managers more accountable to vulnerable people. These vary greatly in approach, from the collaborative to the confrontational. The choice of methods in a given situation must be determined by local circumstances and contexts. The descriptions that follow indicate some of the options available, and comment on their application. The methods are grouped under two main headings:

1. Giving victims a voice. This section surveys ways of allowing vulnerable people to get their points of view across (there is more on this in Chapter 8).
2. Enforcing accountability. This discussion concentrates on methods of pushing decision-makers and practitioners to improve their policies and ways of working.

This coverage is not comprehensive. There is room for much more research on the subject, especially to identify the most effective approaches.

12.3.1 Giving victims a voice

For all the advances in participatory approaches discussed in Chapter 8, the voices of disaster victims and those at risk are often not listened to, valued or

understood. However, a number of innovative techniques are being used to give disaster victims a voice, and so help disaster agencies make their interventions more appropriate.

Auditing disaster response

Some innovations in accountability take the form of an auditing process. Case Study 12.1 is a well-known example.

Case Study 12.1

Social audit after Hurricane Mitch

Nicaragua was badly affected by Hurricane Mitch in October 1998. In February 1999, a coalition of over 320 non-governmental and social organisations carried out a 'social audit' in order to incorporate communities' points of view into reconstruction planning.

The methods used to collect information included reviewing institutional documents, household surveys, interviews of key informants and discussion groups. The audit surveyed more than 10,000 homes in 16 municipalities affected by Mitch. Community leaders, mayors and leaders of other local organisations were also interviewed.

The audit provided evidence of the extent and nature of the losses suffered (both economic and psychological), but was particularly valuable in allowing victims to

express their views about the aid they had received. It covered such questions as:

- the coverage of aid (percentage of victims who had received it);
- the value of different items;
- which organisations had helped most;
- the orderliness of aid distribution;
- equity in distribution;
- coordination with external organisations; and
- how far victims' views were taken into account.

Social Audit for the Emergency and Reconstruction Phase 1 (Managua: Coordinadora Civil para la Emergencia y la Reconstrucción de Nicaragua [Civil Coordinator for the Emergency and Reconstruction of Nicaragua], 1999).

Life stories

The life story approach is a standard technique in participatory learning and action. There are many variations on the model. For example, in western India, women affected by disasters – principally drought – have been helped to write their own life stories, which set the disaster event in context as well as revealing their vulnerability and capacities (see also Case Study 6.1, page 83).⁶ Videos have been produced for global TV networks that let those affected by disasters and vulnerability present their own points of view.⁷

Methods such as life stories and participatory vulnerability analysis should help to make external actors in disaster reduction more responsive to people's needs before disaster strikes, but they do not guarantee it. For this, more sustained mechanisms are needed.

Victims as consumers?

There is scope for experimenting with other methods that allow vulnerable people to express their views and preferences. The notion of disaster victims as consumers (Case Study 12.2) may be one step in this direction.

Standards, charters and codes of conduct

An encouraging trend is the development of codes of conduct and sets of common standards. Several have emerged during the 1990s, mainly among NGOs working in emergency relief and stimulated largely by problems arising from the proliferation of conflicts and associated complex emergencies. The best known are the International Red Cross and Red Crescent Movement/NGO Code of Conduct (drawn up in 1994: a broad statement of principles), the People in Aid Code (1997: setting standards of good practice in the management and support of aid personnel) and the Sphere Project (1998: minimum quality standards in disaster response). Others have addressed practice in particular emergencies. Sphere and People in Aid are multi-agency initiatives.

By laying down common standards and regulatory frameworks, the codes and standards are explicitly intended to make their signatories more accountable. The Red Cross Code of Conduct states: 'We hold ourselves accountable to both those we seek to assist and those from whom we accept resources'.⁸ Those adopting Sphere's Humanitarian Charter 'expect to be held accountable to this commitment and undertake to develop systems for accountability within our respective agencies, consortia and federations. We acknowledge that our fundamental accountability must be to those we seek to assist'.⁹

Case Study 12.2

A 'Flood Aid Fair'

After severe floods in 1997, a 'Flood Aid Fair' was held in Raciborz in Poland, as part of a larger assistance and reconstruction programme funded by USAID. The fair was planned in response to problems arising during the reconstruction period, when aid was being distributed in an inequitable and inefficient manner because victims of the floods did not have access to information about sources of aid (supplied by donors, the government and commercial firms). The fair's aims were to stimulate an intensive exchange of information between donors and victims, and to promote market responses to the demand for goods and services created by the flood.

The fair was modelled on commercial trade fairs. There were 146 exhibitors: food aid organisations, government institutions, municipal associations, consulting firms, building materials firms, new-technology firms, financial institutions and others. The event

lasted only eight hours, but was attended by more than 4,000 people: homeowners and representatives of NGOs, municipalities, regional development agencies, commercial firms and government.

The exchange of information appears to have resulted in additional resources becoming available for flood victims, such as product discounts, information about credit and access to technologies. It also exposed gaps in available resources, helped to build capacity among indigenous organisations and strengthen relationships between different actors involved in the reconstruction effort, and led to the creation of a multimedia flood aid information system.

M. Mikelsons and K. Chmura, 'The Flood Aid Fair in Poland: A Method to Promote Information Exchange', *Natural Hazards Observer*, XXIII(1), 1998, www.colorado.edu/hazards/o/sept098/sept098.htm.

Some of these initiatives are in their infancy. There are practical obstacles to overcome, concerning implementation and particularly compliance. Agencies may sign up to codes as a token gesture to keep donors happy, while continuing to operate just as before. A few organisations remain critical, for reasons related

mainly to the protection of humanitarian principles, and have chosen to distance themselves from such developments. Nevertheless, the codes and standards represent an important step forward and in the long term they may provide an opportunity to promote pre-disaster mitigation and preparedness activities.

Transparency in monitoring and evaluation

Transparency in monitoring and evaluation is a key element in making operational agencies more accountable. It can be achieved by making reports and evaluations public. The need for improved and open monitoring and evaluation has been widely acknowledged in development circles only since the early 1990s and in humanitarian assistance circles since the Great Lakes crisis of 1994–95 – and there is continuing resistance within many agencies to making such material available to the public or other professionals.

Sometimes, such resistance has a reasonable basis – for instance, the need to protect operational activities or vulnerable people against military or political interference. However, in many cases marketing and public relations considerations prevent publication of material that may reveal weaknesses or incompetence. Lack of transparency means that agencies are unable to learn lessons from each other and are frequently reinventing the wheel.

Initiatives to promote improved monitoring and evaluation and greater transparency have been confined largely to the development and humanitarian assistance sectors. In the area of disaster mitigation and preparedness, monitoring and evaluation have generally been neglected (see Chapter 18).

Research and advocacy on good practice

This area remains neglected, at least by NGOs. Much of the advocacy to date has been generalised, addressing broad issues and without a solid research base. Operational agencies need more than general statements if they are to improve their approaches: they need practical guidance, based on experience.

HelpAge International's guidelines for best practice on supporting older people in disasters provide a model approach for this. With funding from the UN High Commissioner for Refugees and the European Community Humanitarian Office, HelpAge researched older people's needs during disasters and how humanitarian aid agencies perceived those needs, and found significant differences between the two viewpoints. A concise report, containing the research findings and the guidelines, has been widely distributed and publicised.¹⁰

Networks

The growing number of networks, especially involving NGOs and researchers, has also provided a platform for research and advocacy on policy and practical issues (see Chapter 5.2.5, page 72). Objective and in-depth evaluations of the impact of such efforts would be useful.

12.3.2 Enforcing accountability

The initiatives described above are voluntary: those who subscribe to or take part in them wish to make themselves more accountable. But what happens when key actors in disaster management are not interested in accountability or even dialogue? In such circumstances, more forceful or even confrontational approaches may be adopted.

Bringing pressure to bear on the political system

In democratic states, accountability is best established through the political system and structures. Vulnerable people can hold their elected representatives to account through the electoral process and other means. The political system is multi-layered, allowing people to influence decision-makers at different levels. But even in democratic states, risk reduction is rarely a priority for politicians unless either the risk is perceived as immediate (and therefore a potential threat politically, if action is not taken) or pressure can be brought to bear by lobbying or influencing public opinion.

Over many years, disaster workers have been engaged in activities that bring pressure to bear on governments and politicians. The long and intense campaign by many local and international NGOs and researchers against the Flood Action Plan in Bangladesh is one of the best-known examples (see Chapter 10.2.5, page 155).

‘Report cards’ on the quality of government performance have been used in some cities in India to support lobbying for improvements to infrastructure and public services. This method has also been piloted in relief operations, where disaster victims evaluate the performance of the agencies that come to help them.¹¹ Other methods being explored in India involve scrutinising government relief codes and budgets, to bring issues of cost effectiveness and accountability into the open and expose weaknesses in planning and gaps between plans and practice.¹²

More direct action to bring government officials and victims together has

Case Study 12.3

Facing the people

Following sea floods at Dhandhuka on the coast of Gujarat in 1993, local NGOs launched a community-based process to plan more effective disaster mitigation. This involved a series of planning sessions in the affected villages.

Officials from several state government departments took part in the meetings. They included the Minister of Health, who came to several meetings – unusual for someone of that rank. Although the officials took part in the debates, they did not exercise any control over the process, which appears to have been harmonious and collaborative, and led to government commitments to carry out a range of recovery and mitigation measures.

By contrast, after the Kobe earthquake in January 1995 Japanese government officials appeared on a national television programme where they faced a chorus of complaints that they were not doing enough to provide food, emergency shelter, medicine and money for reconstruction. The Governor of Hyogo Prefecture, of which Kobe is the capital, was obliged to admit that the authorities had been slow and lacked coordination.

M. R. Bhatt, 'Participation, Planning and Mitigation in Dhandhuka', *Appropriate Technology*, vol. 22, no. 4, 1996, pp. 12–15; *The Guardian*, 30 January 1995.

been attempted. Sometimes this is harmonious, at other times confrontational (e.g. Case Study 12.3).

Effective advocacy in this field requires good information on hazards, risk and vulnerability. As noted in Chapter 4, in many cases such information may not have been collected, or if collected is inadequate or not available to the public. For example, hazard maps may be out of date or deemed to be confidential for military or other reasons. Statistics on the impact of previous disasters are often unreliable and almost never disaggregated by age, gender and other socio-economic features. Data on vulnerability are likely to be restricted to physical vulnerability (buildings and infrastructure) rather than covering communities. If information has been gathered by private organisa-

Case Study 12.4**Raising public awareness of man-made hazards**

Friends of the Earth UK, an environmental education and campaigning organisation, runs a website called Factory Watch to raise public awareness of industrial hazards and encourage campaigning against pollution in the UK. The website is at: www.foe.org.uk/campaigns/industry_and_pollution/factorywatch. Visitors to the site type in their postcode, and can then see a list of major industrial plants in their

district, with official figures for the types and amounts of pollutants released by these factories. Factory Watch gives the name of the Member of Parliament (MP) for the district concerned, and will create letters for electors to send to their MP. The site also provides more general advice and information on campaigning against polluting factories.

tions such as insurers, it will be considered commercially confidential. Access to relevant information is an essential element in improved accountability.

Accountability by proxy

Disaster agencies are rarely directly accountable to disaster victims or potential victims. Although in the case of government agencies a degree of accountability can be achieved indirectly through the democratic process, the vulnerable and powerless – who make up the bulk of disaster victims in much of the world – are often not strong enough to call such agencies to account. They have to rely on others with more power and influence to speak out on their behalf. This can be called ‘accountability by proxy’.

NGOs or other disaster professionals may take it upon themselves to speak out on behalf of disaster victims. This is a role that they have been encouraged to adopt, but the nature and extent of their involvement in advocacy of this kind has not been studied. They may believe that there is a need to become involved in such work, and may be able to argue with justification that they have a responsibility to do so on behalf of those whose voices are not heard by decision-makers. However, they do not necessarily have a

mandate for this role (community associations and other membership-based organisations, on the other hand, can speak with some legitimacy). The issue is particularly important to NGOs, who are always vulnerable to challenge from elected authorities on this count. All non-state actors considering involvement in processes of this kind need to think about this carefully.

The media form an important proxy group, although their role in promoting disaster reduction is the subject of some debate.¹³ Sometimes they are clearly beneficial, for example in highlighting the failure of official relief services to reach those most in need, and in disseminating forecasts and warnings.

However, the media tend to take a stereotyped view of disasters. They are only interested when a disaster takes place, they prefer stories of human tragedy to human ingenuity, and they like to find people or organisations to blame for the disaster rather than considering the real causes of vulnerability. They are also often influenced by other agendas: their own and those of other interest groups. They are unreliable allies.

There has been much talk about educating the media to cover disasters in a more balanced and responsible manner, but the commercial pressures of international news-gathering are so great that such moves can make only slow headway. Significant, sustained efforts are needed to change media attitudes. Few NGOs are likely to have the resources to undertake this.

Alternative news services run by non-profit organisations can take a more principled and strategic approach to the subject, but their outreach is likely to be limited in comparison to that of the commercial media sector.

Litigation

In an editorial soon after the January 2001 earthquake in Gujarat, the London *Times* newspaper commented: 'Whatever the population pressures in India, Turkey or China, disregarding the seismic risk is tantamount to man-slaughter'.¹⁴ The law provides a potentially valuable tool for enforcing accountability. Legal action is obviously of value in gaining redress after a disaster, for example to ensure that victims are treated fairly in the allocation of relief resources, and to secure compensation from those whose actions have led to disasters (notably in industrial or environmental accidents).

It is not clear how effective legal action can be as an instrument to ensure greater safety by reducing a potential risk. However, this may be possible through what is known as 'public interest litigation' – i.e. seeking to remedy

Case Study 12.5

Communities using the law

Following the Loma Prieta earthquake in the San Francisco/Oakland area of California in 1989, several community-based organisations complained that disaster recovery plans did not take account of the special problems faced by poor and vulnerable communities. A variety of methods was used to force reconsideration of those plans. One was to invoke the law. When it was learned that the American Red Cross intended to transfer unspent contributions for the disaster to its

national disaster fund, a lawsuit was threatened. In the face of this, and the loss of community trust, the Red Cross revised its plan and created a substantial fund for local planning, community organisation and training.

B. Wallrich, 'The Evolving Role of Community-Based Organisations in Disaster Recovery', *Natural Hazards Observer*, XXXI(2), 1996, www.colorado.edu/hazards/o/nov096.html#CBOs.

an actual or potential public grievance through the courts. In some countries, this has been used to tackle issues such as human rights, environmental destruction, the handling of hazardous substances, pollution and the social and environmental consequences of development projects.¹⁵

The extent to which the law has been invoked to enforce accountability and raise standards is unknown. Further research in this area would be valuable. Clearly, the law is a potentially formidable tool, and it is probable that the number of lawsuits brought by disaster victims and those who feel that they are being exposed to hazards will increase. This has serious implications for disaster managers and operational agencies, who may be deemed legally liable for their action – or inaction.

However, legal action may also be an obstacle to more sustained, comprehensive disaster reduction because its adversarial nature can undermine opportunities for collective efforts.

Accountability and rights

The subject of rights occupies an important place in the debate about accountability. Many organisations working in international aid and develop-

ment are committing themselves to a 'rights-based' approach. Conceptually, this is an important step, but for many field-workers the practical value of rights-based thinking has yet to be proved.

The rights-based approach tends to encompass both human rights (i.e. those that are internationally accepted through international agreements) and other rights that an agency believes should be accepted as human rights. In such contexts, the language of rights may be used vaguely, with a risk of confusion.

Those advocating rights-based approaches to development tend to avoid definitions and instead focus on frameworks for analysis, discussion and action. Terms such as 'basic rights' and 'equal rights' are often used in the development context to cover issues of access to aid and participation in decision-making.

Security against disasters is not generally regarded as a right, although it is addressed in some international codes, usually indirectly. The idea of a 'right to safety' is being discussed. This appears to be consistent with international human rights agreements, but poses the following problems in practice:

- Safety is difficult to define, since notions of acceptable risk and security levels are relative and often subjective.
- Decisions about risk and safety may have to be taken where the precise nature, magnitude and extent of a hazard or risk are unclear or disputed.
- The concept of a right to safety is likely to be challenged by those who fear it will increase their own liability (e.g. government and the private sector).

The 'right to safety' also raises the question of who is ultimately responsible for ensuring the safety of the public and mitigating hazards (natural as well as man-made). There is no simple or clear answer to this.

Threats and dangers

Lobbying is difficult and requires sustained effort. Many calls for change go unheard. Residents of the Santa Tecla district of San Salvador, many of whom lost their lives and houses to earthquake-induced hillside collapse in January 2001, had previously tried unsuccessfully to stop deforestation and development on the slopes above their homes.¹⁶

In some countries, advocacy can prove dangerous for those involved, especially if they challenge powerful vested interests. For example, Afro-Honduran

Garifuna communities on the north coast of Honduras have failed to stop the erosion of their traditional land-use practices by commercial plantations and road construction – changes that have destroyed rainforest cover, affected watersheds and apparently led to much greater vulnerability to flooding. Moreover, their campaigns, which have challenged the landowners who sponsor and benefit from the changes, have been met by threats, violence and arson.¹⁷

12.4 Chapter summary

- Every country should have an appropriate national policy, legislative framework and administrative structures for risk reduction. This is government's responsibility.
- The effectiveness of such measures is weakened by insufficient capacity to implement them and socio-economic pressures that increase vulnerability.
- Non-state actors can play an important role by lobbying for better policies and regulations and for stronger enforcement. They can also press organisations of all kinds to be more accountable to vulnerable people.
- There are many methods of accountability. These are of two main kinds: giving victims a voice, and enforcing accountability.
- Many of the methods are new and need further evaluation, but there are signs that some can be very effective.

Notes

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