



knowledge development:

education, public awarness, training
and information sharing





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Brief

- The foundation for commitment to risk reduction activities is a common understanding of disaster risk. To build this, all stakeholders must participate and voice their opinion. To achieve this, forums, community meetings, and discussion groups are a good place to begin dialogue, i.e., multi-stakeholder coordination and cooperation is critical.
- Building a common understanding first requires a good understanding of the range of problems and needs of different **stakeholders**.
- Disaster risk management relies on many sources of information and in the recently information resources have grown considerably
- Integrating **education, public awareness, training and/or information sharing activities** in all disaster risk reduction interventions is important and in developing a comprehensive program, problems and needs of different stakeholders should be considered.
- Awareness raising could be targeted at selected communities vulnerable to disasters, senior government officials responsible for developing policies, organizations from different sectors and even those involved in education, media and training.
- There are many channels of communication from which the most appropriate for the selected target group must be selected.



Introduction

Effective disaster risk management demands a common understanding of risks by a multi-stakeholder group. Presently, the coordination and cooperation required to make sustainable plans and actions indicates that there is still a long way to go. Common understanding between government level officials down to local-level can be achieved through education and training, and awareness raising. Access to, and the sharing and exchange of information is paramount to ensuring a comprehensive multi-hazard approach is adopted.

This chapter will draw attention to the importance of information sharing and exchange through forming partnerships and collaborations, and building networks. It will define the role of education, training and awareness raising amongst key stakeholders, and highlight the need for targeted skills transfer. It will also provide a strategy for preparing a successful awareness raising program with the goal of creating a common understanding of disaster risks.



Key Words

Capacity Building

Efforts aimed to develop human skills or societal infrastructures within a community or organization needed to reduce the level of risk.

In extended understanding, capacity building also includes development of institutional, financial, political and other resources, such as technology at different levels and sectors of the society. (*UNISDR Volume 2, 2004:2*)

Communication

Communication is a dynamic two-way process consisting of a sender and receiver.



Information Sharing

The exchange of processed data.

The widespread and consistent availability of current and accurate data is crucial for ongoing research, assessing risks, monitoring hazards and mitigation planning. The presence of information sharing forums and the participation of stakeholders in these forums at regional, national and local levels are fundamental to effective disaster risk reduction. Rapid development in information and communications technology has helped to record, disseminate and share information (*ISDR, 2004*).

Knowledge Development

Knowledge development focuses on the processes and the people involved in creating, communicating/sharing and applying knowledge, and in building a common understanding among stakeholders. They include scientists, communities, development workers and policy makers.

Public Awareness

The processes of informing the general population, increasing levels of consciousness about risks and how people can act to reduce their exposure to hazards. This is particularly important for public officials in fulfilling their responsibilities to save lives and property in the event of a disaster.

Public awareness activities foster changes in behaviour leading towards a culture of risk reduction. This involves public information, dissemination, education, radio or television broadcasts, use of printed media, as well as, the establishment of information centres and networks and community and participation actions.

(UNISDR Volume 2, 2004:9)



Knowledge Development Concepts

Building a common understanding

A common understanding of disaster risk provides the foundation for commitment to, and participation in risk reduction activities. This understanding must involve the multiple stakeholders with vested interests in reducing risks. However, the common belief is that people do not understand their risks and therefore need to be educated (*Twigg 2004*). This assumption is not entirely correct as risks are based on perceptions.

In order to build a foundation of common understanding, there must first be a forum for all stakeholders to participate and voice their opinion. Through the process of assessing risks described in Chapter 3, information can be generated and analysed in relation to the specific context of the project area or jurisdiction. Multiple hazards need to be discussed and risks need to be considered in context to peoples every day lives.

An understanding of disaster risk reduction is best achieved by integrating it as a part of daily life experience and professional interests. It must be integrated into daily life experience and professional interests through education, public awareness, training and information sharing. These approaches are ways in which different perceptions of risk can be linked, and complement each other.

Forums, community meetings, committees, and discussion groups are a good place to begin dialogue and encourage participation. These discussions can draw out opinions, build awareness, and increase engagement amongst different groups in society through facilitation of dialogue and communication.

Information sharing and exchange

Disaster risk management relies on many sources of information, from socio-economic data, research on how people have coped in the past, to maps, rainfall data, seismic monitoring, hydro-



meteorological data, to databases of past disaster events. Disaster related information is paramount to the development of good planning to reduce risks in the future. In Asia, the past 10 years has seen a growing number of information resources from data and maps to forums and networks for the sharing, exchange and discussion of disaster related information. New Information and Communications Technologies (ICTs) can now facilitate active discussions and disseminate vital up to date and real-time information.

Information is a vital component to the decision making process. All stakeholders need to have access to this information. However, the difficulty now is what information is necessary and important to which stakeholder for the decisions that need to be made. Common understanding amongst stakeholder groups of a multi hazard situation can help decide what is needed and what is not.

Important data or information for disaster risk reduction are being created but they are either scattered or confined among individual research programs, libraries, government offices or non-government organizations with no common point of access. They are often neither easily accessible nor well targeted for potential users.

One key challenge is to establish a sustainable focal point that can provide easy and consistent access to data and information on hazard and risk issues. Various government departments, international organizations, research centers and non-government organizations all produce data and information relevant to disaster risk reduction. However, the need of individual organizations to have adequate information for their own program interests have motivated them to develop information systems that cannot easily be applied to other settings.

Sharing of information such as databases and specific GIS generated, hazard specific maps are costly to create and therefore, are available at a cost rather than in the public domain. Specialised hardware and software is sometimes necessary to access this information, which limits access and availability.

Information sharing and exchange needs to be practiced rather than spoken about to reach a common goal of disaster risk reduction. Partnerships, networks, collaborations such as those mentioned in previous chapters are good mechanisms for promoting the sharing and exchange of vital information resources. Donors need to understand the importance of helping organisations, agencies and government bodies work together rather than against each other.



Another challenge is the development of a culture of documentation of information, experiences, lessons learned that contribute to a knowledge base.

There have been global and regional initiatives in information sharing which can guide the development of national and local information systems (refer to section on “References and Resources”). At the same time, it is important to build the capacity of users in accessing, using and building on the information resources.

The Internet is a useful tool for accessing, sharing and managing information. The use of email is expanding rapidly. Many organizations now have their own websites. Some have started to develop intranets which can be accessed by the organization’s own staff. Catholic Relief Services and the International Federation of Red Cross and Red Crescent Societies, for example, have intranets where the organization’s regularly used documents, training materials, presentations, reports and standard forms are made accessible.

Electronic *listserves* and newsletters such as ADPC’s *E-news: Disaster Mitigation in Asia* and the Natural Hazards Research and Applications Information Center’s *Disaster Research*, are increasing.

These issues need to be addressed through a comprehensive framework and strategy for disaster risk reduction bearing in mind the potential of advancements in information and communication technologies (the Internet, wireless and mobile technologies, virtual conferencing) to help organize and package information, create and share information.

Information is systematically categorized into the following groups:

- Reference Databases - CRED
- Specialised Resource Centres - ADPC, ADRC, Pacific Disaster Center
- Scientific Hazard Data Centers - monitoring centres
- On-line Networks and Groups - discussion panels, analysis, research



Education, Training and Public Awareness

The process of building awareness through education, training and targeted information dissemination is dynamic and multi-dimensional. The aim is to build a common understanding so stakeholders can act to achieve a common goal. Depending on the target group, appropriate skills, information, tools and techniques are presented in training sessions that will help facilitate development, planning and implementation of risk reduction activities.

Education, training and awareness provide support to overall disaster risk management strategies, particularly legal arrangements, policies, and institutional arrangements. The concept is termed Disaster Risk Communication (DRC). This term encompasses more than just public awareness campaigns, social marketing and education. It is about communicating a message through disseminating information and knowledge about risks to catalyse pro-active decisions, planning and actions of national, provincial and local governments, scientists, civil society groups, local communities etc... DRC targets all stakeholder groups, however, each group will need specialist curriculums targeting their needs.

Education

'Awareness about risks and dangers needs to start in early education before abilities to address them can become part of growing civic and professional'

(UNISDR 2004:236)

Education for disaster risk reduction is a long-term goal. Targeting school aged children and exposing them to information about specific hazards, particularly those occurring in their immediate lives can have a lasting affect on an entire generation. Practicing preparedness planning activities such as earthquake drills, flood evacuation, participation in disaster reduction day activities, games and competitions are practical ways of increasing awareness in children.

Institutionalising disaster risk education in schools and universities through curriculum development can also play an important role in ensuring a generation of aware individuals who have a common understanding of risks in their own communities. Education from elementary school to university can build up a cadre of informed stakeholders for disaster risk reduction.



‘Education for disaster reduction is a transdisciplinary exercise aimed at developing knowledge, skills and values which will empower people of all ages, at all levels, to assume responsibility for building a safer and sustainable future.’

- UNESCO

Creating familiarity about disaster risk reduction can start in school. The incorporation of disaster risk reduction as part of the school curriculum often benefits not only the school children but also the teachers and parents in the community.

Many countries in Asia including Bangladesh, India, Indonesia, Japan, Lao PDR, Nepal, Philippines, Sri Lanka and Vietnam have attempted to introduce issues such as environment, hazards, health and safety issues in the school curriculum – in humanities, geography and science classes, and as extra curricula activities.

However, in reality, the formal curriculum teaches more about hazards than the different components of disaster risk reduction and there remains little research on formal education’s contribution to disaster risk reduction (*Twigg, 2004*).

At the university level, only a few offer courses in disaster risk reduction, most of which are in Europe and the United States of America. However, over the last two decades, there has been increasing incorporation of disaster risk reduction issues in other disciplines such as engineering, environmental management, hydrology and planning. Moreover, studies on disaster-related issues are no longer limited to specific hazards and to structural mitigation. More attention has been devoted to the social and economic conditions of vulnerability. (For a list of universities offering courses in disaster risk reduction, refer to section Resources)



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The potential of e-learning, distance education, open learning or online learning tools that make use of the Internet and multimedia technologies (combining video, sound, animation, text and graphics) should be considered. In a society where everyone is always busy, e-learning provides a more flexible learning environment which puts greater responsibility to learn on the learner. Prerequisites for using such tools include the availability of facilities and skilled professionals and their ease of access to the targeted group.

ADPC pioneered the use of this technology and implemented an EU-funded project in partnership with 15 selected universities / training institutes in Asia to incorporate disaster risk management in their urban planning courses through an Internet-based platform for e-learning.

Training

A systematic process where by specific skills are learnt. There are a number of highly regarded institutions committed to disaster risk reduction training. They have been organizing a variety of training programs for the past 15-20 years. Today, graduates from these programs often constitute the core of disaster professionals in many developing countries around Asia. Training is conducted at regional, national and local levels for different target stakeholder groups. Some are hazard specific, others are sector specific (disasters and health, development, environment, management, planning), or skill specific (risk assessment, community based, participation, advocacy, media).

There are a number of training centers for disaster risk reduction that run international, regional, national and local training courses. The training courses are beginning to attract a wider range of participants from senior government officials to planners to community organization representative. These training courses offer opportunities to initiate a dialogue between the different stakeholders on their experiences and needs. (For a list of training centers offering courses in disaster risk reduction refer Resources)

Effective disaster risk reduction depends on a series of related actions. An understanding of the roles and responsibilities of the different stakeholders and their informed participation in this series of related actions is critical. It is important to develop capacities at all levels and across sectors.

In other words, it is not sufficient to simply train those directly responsible for reducing disaster risks, e.g. civil defense officials, first responders and disaster risk managers. Disaster risk reduction needs to be incorporated as part of the development process and should involve stakeholders such as technicians (e.g. masons), technical professionals (engineers, architects), students and teachers (from elementary to university level), the media, politicians, government officials (mayors, planning authorities, water resources managers, social workers) and non-government representatives.

Training is not limited to formal courses. Informal hands-on skills training e.g. training of Nepali masons in earthquake-resistant building techniques requires a different approach as most masons are illiterate. Training could also be held to develop the capacity of an organization to incorporate disaster risk reduction in their work. For example, the Prince of Songkhla University and the University of Chiang Mai in Thailand shared their skills on risk assessment



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with planners from Lao PDR's Urban Research Institute as part of an ADPC program.

When those trained in disaster risk reduction return to their workplaces, most find that they are constrained in applying their newly acquired knowledge. Some will find their scope of work unchanged, and they will have neither the leeway nor the incentive to try new things and apply their new knowledge on disaster risk reduction. Many will work under similar policies that oftentimes prohibit stakeholders' partnership and community participation. Others will not have access to resource to implement new technologies and approaches.

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 (see *Twigg, 2004: 185* for questions to consider when running training courses or sending staff on other institutions' courses).

Training

Disaster Management Training: Potential manager – government officials, senior public sector staff, non-government organizations. Basic orientation on concepts of disaster management and processes.

Co-ordination and Skills Training: specific government agencies, NGO's and CBO's, volunteer civil society groups, support services such as police, fire and ambulance. Emergency planning and operations, search and rescue, first aid, communications, needs and damage assessments.

Specialised Training: Journalists, politicians, ministers, community leaders, scientists. Aimed to provide information targeted to their particular sector and role in DRM.

(Source: ADB Carter 1991)



Public Awareness

Public awareness is paramount. The aim is to *'promote an informed, alert and self-reliant community, capable of playing its full part in support and in co-operation with government, in all relevant disaster [risk] management matters (ADB Carter 1991).*' The UNISDR advocates in its objective, the importance of public awareness to come to a common understanding of hazards, risks and vulnerability in order to work towards risk reduction. Throughout all aspects of disaster risk management a component of information dissemination and public awareness is essential. The community needs to be informed in order for them to make active decisions in their every day lives to reduce risks.

It is essential for all stakeholders first to be aware of the hazards they are likely to face and the importance that risk reduction holds for their daily lives.

Countries such as Bangladesh and Nepal have annual campaigns for promoting public awareness on disaster risk reduction. The United Nations have designated the second Wednesday of October as the International Day for Natural Disaster Reduction. National events are held worldwide to raise public awareness on disaster risk reduction.

These and other special commemorative events are important for raising awareness but they need to be supplemented with a strategy that builds public awareness on an ongoing basis, sustains public interest and motivates stakeholders to take appropriate actions.

Awareness raising could be targeted at selected communities vulnerable to disasters, senior government officials responsible for developing policies, organizations from different sectors and even those involved in education, media and training.

It is critical to ensure that the chosen channels of communication are most appropriate to the target stakeholders, especially when working with poor and marginalized groups. It is important to consider their literacy rate, languages or dialects used, and even availability of electricity.

Any project activity, whether it is development of an evacuation plan, retrofitting a school or conducting a risk assessment, should be viewed as an awareness raising opportunity.



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Disaster events in neighboring localities are opportunities to raise public awareness on the issues, lessons learned and mitigation strategies for reducing disaster risks.

Always inform and involve the mass media for greater outreach beyond the community.

The mass media such as television, radio and newspaper can contribute to raising awareness and disseminating information. However, media coverage is still largely focused on major disaster events and the immediate dramatic aftermath.

The potential of the mass media to report on pattern of loss and destruction and existing risk reduction practices remains untapped in many countries. Media representatives and journalists need to be included in risk reduction program and targeted as a group for training to encourage reporting on disaster risk reduction before a disaster occurs. The mass media could also assist in issuing warning. Hong Kong has made effective use of television in issuing typhoon warnings.

Mass media communication is most likely to be successful if linked to other actions on the ground (activities?) and if the target groups can get involved (e.g. through community radio stations, audience feedback or competitions) (*Twigg, 2004*).

Knowledge Development Process



Strategy for developing knowledge on disaster risk

Below are some simple questions to consider when planning and implementing a comprehensive strategy for education, public awareness, training and information sharing activities:

- Who?
- What message (s)?
- Through which channels?
- When?
- With what effect?
- Why document?

Who are we trying to reach? Whether in raising awareness, training or establishing networks, we need to specify and define our target group(s). This important question requires us to really understand the people and the environment (physical, economic, social and political) they live in.

What do we want them to know? It is important to have clear objectives. Participation of the target groups in defining objectives and planning activities is important. Their needs may turn out to be different from what was originally envisioned. Furthermore, they could add value to the program by incorporating local knowledge. Always try to create two-way learning processes.

What are the channels of communication? Many media exist for disseminating information. The selection of suitable media is based on the defined objectives, available resources and the result of target group assessment. It is important to consider all forms of media to reach different target groups. Creative forms of media include more traditional forms of communications that have been used through the centuries for passing on information such as storytelling, dance theatre, soap operas and puppet shows. Videos, exhibitions and the Internet are also useful channels for interacting with the target groups.



nepal role play

Channels of communication

- Mass media: television, radio, newspaper, cinema
- Electronic media: website, e-mail, e-mail discussion lists, electronic conferencing, distance learning platform, SMS and MMS
- Audio-visual: video, audio, multi-media, artwork, photograph, slide show, model, map
- Postal: direct mailing
- Telephone: Dial-in conversation
- Face-to-face: meeting, seminar, workshop, conference, march, exhibition, demonstration, training, exchange visit, planning
- Stand-alone print: billboard, poster, banner, warning sign, flood water level marker
- Distributor print: leaflet, pamphlet, brochure, booklet, guideline, case study, newsletter, journal, research paper, report
- Folk media: story, drama, dance, song, puppet, music, street entertainment
- People: community leader, volunteer, project worker, head of women's group



flag-thailand flood



Asian Disaster Preparedness Center
Safer Cities 7
Can Small be Beautiful?
Community Based Flood Mitigation in Bangladesh

Introduction
Flash floods in the memory of Arafat Ali, was the day in 1987 when the banks of the mighty Brahmaputra overflowed and washed away the family home. Only 13 years old at the time, he lost both his parents, and their small piece of land to waters flooding the municipality of Gaisambhita in Bangladesh. He remained homeless until he moved to the village of Gaisambhita to seek work as a rickshaw driver. Arafat eventually married with his migrant savings, he managed to buy a small piece of land by the river Chagari. Land was scarce, and his low income gave him few options to buy land to build his home. This land he could buy with flood prone, and each year, the river overflowed and inundated his small home. One day, opportunity knocked on his door. He heard of a pilot project initiated by the Bangladesh Urban Disaster Mitigation Program (BUDMP). The aim of this project was to build on existing indigenous techniques, and use the collective wisdom of the people to develop a community based flood mitigation strategy. Arafat became an active participant in a homestead raising activity that ensured his home would be safe and dry during the flood seasons. Water must not be stopped if he would be prepared to contribute his labor to raise the level of his home above the highest average flood level and plant banana trees to secure the road. Today his homestead is free of flood and his family safe.

Abstract

Community Participation
Asian Urban Disaster Mitigation Program

Earthquake Preparedness in Schools
A Case Study of Mitigation Efforts in Indonesia

Abstract

This case study focuses on the experiences of implementing earthquake hazard mitigation in public school communities in the Indonesian city of Bandung. The project was carried out as a school retraining program within a community awareness program. This case study also identifies the role of community awareness in the process of disaster preparedness.

When? Timing is very important for reaching a target group that will listen. An action plan needs to be developed. There may be opportunities to draw the interest of target groups. For example, there may be a street festival in which students, teachers and parents could carry banners in a parade, training may be conducted for homeowners on ways to strengthen their houses just before the beginning of the monsoon season, or there may be a global event on sustainable development in which a session on disaster risk reduction will be attended by senior government officials and donor organizations. The occurrence of a major disaster could also be a good time to promote disaster risk reduction.

It is important to establish sustainable information and communication systems and repeat activities, messages and/or training courses. People will forget. Politicians and leaders change. Community needs also change.



see chapter 8

How do we know whether or not our effort was effective? A baseline study and a methodology for evaluation needs to be developed for periodic monitoring and evaluation of program activities (See Chapter 8 Project Implementation, Monitoring and Evaluation).

Have the materials been pre-tested on a focus group? Are the right people being targeted? Are the programs sufficient in scope and frequency to meet needs? Have any gaps been identified? If so, how can they best be filled? And most importantly, are the targeted groups using the knowledge gained to take appropriate actions toward disaster risk reduction? Mechanisms to feedback results of the evaluation to improve program implementation also needs to be in place.

Quality control - Making sure the message is accurate in its technical and social context is essential. Often when translated, slight variations on wording shifts meaning, not just in technical terms but, in what it might mean to a different target group. Keep quality checks on the work in progress as well as after the translation is completed.

Why document? In the effort to build up knowledge on disaster risk reduction and promote replication of initiatives, it is important to document findings, experiences, lessons learned in different forms, for a range of media, and widely disseminate them.

The six key questions above are important for developing any education, public awareness, training and information sharing activities.



Checklists



Any education, public awareness, training and information sharing activities should focus on increased understanding of the problems and their solutions. The ability to be change agents in communities increases when a customized approach is implemented. By gaining a better understanding of the target stakeholders and involving them in the design and planning of strategies, the odds that they will take action to save lives, reduce property and business losses and ensure social and economic sustainability increases.

Developing strategies

To develop strategies for promoting understanding and appropriate actions for disaster risk reduction, consider the following eleven steps:

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

(Burke, A., 1999, Communications & Development: A Practical Guide, London: DFID in Twigg, 2004: 169)

Planning and Implementation

Consider the following nine principles:

1. Involve stakeholders
2. Customize for target group(s) - use **cultural indicators** (see Box 6.1)
3. Allow stakeholders to take ownership of the chosen approaches, tools and messages
4. Incorporate local perspectives



5. Create two-way communications
6. Involve leaders
7. Speak with one voice (particularly if partners are involved)
8. Evaluate and measure performance
- 9 Repeat, repeat, repeat

(Adapted from Frew, 2003)

Box 6.1

Cultural indicators

Answers to the following questions will be useful when developing strategies:

- What are the *languages* used within the community? What are the differences in dialect, regional tone?
- Do the different groups in the community perceive *time* the same way or differently? Do some act more rapidly than others?
- Which *religions* are reflected in the community? How do these beliefs impact the way an individual perceives the message content, the timing of its delivery and the proposed approaches?
- What is the *ethnic makeup* of the community? Are there different groups that you will reach out to? How will this impact your use of languages, images and other important messaging?
- What is the level of *group identification* or “group thinking”? Do the groups in the community think and make decisions individually or as a group? Do some decide as an “I” or do they prefer to make decisions as “we”?
- Has the population of the community been affected by *migration* patterns—coming into the city, leaving the city or in between sections and neighborhoods of the city?
- What is the general relationship with, and use of *new technologies* of the community or segments of the community? Do they trust it or have access to it?
- Are there major differences in the *thinking patterns* between the different ages and generations reflected in the community? How will this affect your approaches to reach them? In the type of images used?
- What different levels of *formality* will be needed in your communications to appeal to certain ranks or castes within the community?



- How do the different segments of the community *embrace change* or push against it, new approaches versus putting down older, traditional ways? Can you identify differences in age group and educational levels? Who will have the most influence in embracing your message? Is there a particular avenue that allows better introduction that might assist you in your outreach efforts?
- Who are the respected *champions* of the community—both formally, such as through established leadership positions, and informally in the roles of “wise men and women”? Who are most active in disaster risk reduction and safety?
- What is the level of *cultural assimilation or integration*? Which groups have migrated to new areas or regions and assimilated (adopting) local values and behaviors, and which have maintained their own traditions?
- How has *globalization* impacted the community? Is it impacting their style of living and decision making with new ways and traditions beyond the local community? Has the local community influence extended outside of the community to the country or internationally?
- Does the community face *historical conflicts*, such as religious differences, national wars or international or cross-border conflicts that will impact individual or group decisions on risk reduction issues?
- What local or national *traditions*, such as dance, song, street theatre, or shadow puppets, are celebrated locally that can be utilized in the strategy?
- What *community networks* exist in the community that would be particularly effective in getting the word out or in adopting new risk reducing efforts?
- Which *media* has worked most successfully in the community to reach different audiences?
- Other questions?

(Frew, 2003)



Case Studies for Knowledge Development



ADPC: Focus on Training

ADPC facilitates a range of training courses and workshops each year. The type of course is dependent on needs and requests. The course focuses on a number of different stakeholder groups, hazard types, key sectors and skills. Most collaborate the expertise of other specialized organizations both in the region and internationally. There are a number of organizations in the region specializing in training such as; International Institute for Disaster Risk Management in the Philippines, Disaster Management Center at the University of Wisconsin in Madison, USA, and FEMA. There are also sub-regional organizations such as; Bangladesh Disaster Preparedness Center, Dhaka, Center on Integrated Rural Development for Asia and the Pacific, Dhaka, International Centre of Mountain Development, Kathmandu. (See Resources at the end of this chapter)



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Each program or project will hold individual specialized courses, trainings and forums for government level officials, project partners and key stakeholders to facilitate a common understanding of risks. For example, the Thailand Urban Disaster Mitigation Project (TUDMP) conducted a Round Table discussion for Provincial Governors of Thailand to catalyse the discussion of risks in their own jurisdictions. The project also conducted training in volunteer search and rescue, and first aid for emergency volunteer services in the project site Had Yai. Community leaders in selected vulnerable areas were invited to attend disaster management training to introduce them to basic DRM concepts.

The efforts of this training resulted in the formation of key community organizations dedicated to discussing and acting in their own local areas.





ADPC: Focus on Public Awareness



It is important to identify **who** the key stakeholders are. Involving different stakeholders in planned activities for reducing disaster risks can lead to building a common understanding among stakeholders.

There are numerous **channels** of communication for sending, receiving and sharing information. Selecting the appropriate mix requires a good understanding of the target group.

Vietnamese Boat People

A pilot campaign targeted at the boat people in central Vietnam was developed by ADPC in collaboration with Vietnam's Flood and Storm Control Department, and supported by DANIDA.

Following detailed questionnaire surveys and workshops with the boat people, government officials at different levels and non-government representatives, it was agreed that the project would focus on enhancing boat people's understanding of warning signals for flood and storm, and on developing an evacuation plan.

One of the chosen media for communicating with the people was through folk songs. The boat people enjoy singing. Songs have rhymes and rhythms which make them easy to recall. A song-writing contest for families attracted over 100 entries. Due to strong family ties among the boat people the contest was directed at families rather than individuals. Two families were awarded with color television sets for best songs. The songs were played in the commune broadcasting system several times a day.

(ADPC, 2003; NDM-P, 2003)

Bangladesh Community Based Flood Preparedness

A partnership between ADPC (as part of the AUDMP), CARE-Bangladesh and local partner organizations Gano Unnaya Kendra in Gaibandha and Associated Rural Development in Tongi, developed a strategic campaign to attempt to instill a culture of self-reliance and flood preparedness. In combination with demonstration house-raising, drainage construction, road raising and the development of municipal contingency plans, the public awareness campaign aimed to pass on household tips to better prepare for annual floods.

The campaign used numerous tactics and communication channels to bring home the preparedness messages. The most creative was

a snakes and ladders game used at primary school level to spread awareness at an early age. Here are some more examples:



- Using rickshaws for their familiarity, mobility, geographic reach, and uniqueness, placards were placed on the back with action messages suggesting useful household activities to prepare for floods.
- Art and essay writing competitions at primary and secondary schools with prize incentives was used to promote early vigilance and common understanding about flood risks.
- Drama's and folk songs were performed in public places to reach out to illiterate people.
- Murals and billboards, posters and brochures were distributed.
- Advertisements in movie houses were commissioned to spread the message.

(*Safer Cities 8, 2004*)



Nepal

Nepal

An Integrated Awareness Program

It is important that education, public awareness, training and information sharing activities are well-integrated in disaster risk reduction programs.

The last major earthquake that shook Kathmandu Valley was 1934 and many residents today are not aware of the devastating impact of an earthquake. Should an earthquake like the one that occurred in 1934 hit Kathmandu Valley again, the destruction would be unimaginable. For example, it is estimated that 66 per cent or over 400 public schools will collapse. Take a moment to consider the implications should an earthquake occur on a school day.

One way of reducing risks is to undergo a massive retrofitting or reconstruction project for all the 400 public schools. Alternatively, one could turn the reconstruction process into an educational exercise.

Nepal's National Society for Earthquake Technology (NSET) under the Kathmandu Valley Earthquake Risk Management Project (KVERMP) initiated a school earthquake safety program (SESP) that involved the entire community.

NSET's action plan for Kathmandu Valley provides one possible framework to reduce earthquake risk. Targeting different levels and sectors, it includes a combination of:

Education

- School children learned about earthquake safety in schools, practiced earthquake drills and took home an earthquake kit developed for parents.
- Engineering students worked over their summer vacation with NSET in conducting an assessment of the vulnerability of schools to earthquake. Through this experience they learned different aspects of safer construction in earthquake-prone areas which were not included in their engineering curriculum.



Public Awareness

- Community participation in planning and building safer schools raised awareness and increased community understanding on the concept of earthquake safety.
- Earthquake Safety Day (ESD), an annual event held every 15 January since 1999 in memory of the devastating earthquake that struck Kathmandu Valley on 15 January 1934, comprised a range of awareness raising activities over a one-week period. Activities ranged from exhibitions, interviews on radio and television, art competitions for school children to rallies. It continues to be organized by the ESD National Committee, chaired by the Minister of Science and Technology.
- Following the Gujarat Earthquake in January 2001, NSET took the opportunity to remind the general public in Nepal, the importance of earthquake safety. A range of public awareness activities were organized and materials produced including leaflets, posters and calendars.



Training

- Masons' capacity was built through on-the-job training and hands-on demonstrations. In the aftermath of the Gujarat Earthquake in January 2001, Nepali masons trained local masons of Patanka Village in Gujarat.
- During ESD in 2002, masons from Gujarat attended the event and visited the schools that were retrofitted by Nepali masons in their hometowns. This two-way exchange between Nepal and India proved extremely valuable to local masons, families, children and teachers in the villages.
- NSET provided a series of journalist training, inviting expertise from other countries to share experiences on disaster risk reduction.



Information Sharing

- NSET is widely sharing their experiences and lessons learned in international conferences and training workshops. NSET's work is well-recognized and documented by regional and international organizations including ADPC, ADRC, Duryog Nivaran South Asian Network for Disaster Management, and UN ISDR.

Documentation

- The experience of masons training was documented in two significant outputs: (1) a manual entitled "Protection of Educational Buildings Against Earthquake: A Manual for Designers and Builders," developed by NSET in collaboration with UNESCO; and (2) a curriculum for masons training on earthquake-resistant construction produced by NSET based on the curriculum developed by the Royal Nepal Government's Department of Housing and Building Construction. The resources developed are used in training courses organized by NSET.
- Case studies of the experience and lessons learned have also been documented by ADPC as part of their Safer Cities case study series and made available in print and on the website.
- Over the past six years in Kathmandu Valley, a growing group of trained masons have started strengthening and rebuilding schools and public buildings with the help of the community. At the same time, homeowners have been hiring these trained masons, at higher than normal rates, to strengthen their houses. Homeowners have also been preparing their families for earthquake by following an earthquake preparedness kit distributed by their children's schools.

(Apikul, 2003)



Indonesia

Indonesia

Sustainability and Replication

When planning and implementing any activities, its **sustainability** and **replicability** must be considered. In the Indonesian case study, the endorsement of the Ministry of Education to promote earthquake safety in schools led to its sustainability and replication nationwide.

In Indonesia, a component of the Indonesian Urban Disaster Mitigation Project started with awareness raising in schools. Through the engagement of the Ministry of Education in this



process, the Ministry soon incorporated earthquake safety in schools' extra-curricular activity nationwide.

A training for trainers program has been developed for selected future instructors of provincial teachers training centers in earthquake prone areas in Indonesia. Teachers are then trained at these training centers to teach students earthquake safety, including the conduct of drills at schools.

Teaching materials and technical assistance was provided by the Institute of Technology, Bandung as part of ADPC's Asian Urban Disaster Mitigation Program.

(Yakupitiyage, 2004)

Cambodia

Monitoring, evaluation and review

The Cambodian case study below shares Cambodian Red Cross system for maximizing the impact of their training and for **monitoring** progress of trainees.

One of the components of Cambodian Red Cross (CRC) Community-Based Disaster Preparedness Program (CBDP) is the training of Red Cross Volunteers (RCVs) in a range of risk reduction skills – from risk assessment, flood preparedness and mitigation, community-based first aid to leadership and community organizing.

CRC recognized that training itself is not sufficient. CRC considered training as a first step in establishing a long-term relationship with the RCVs and community members. Continuing support and future training for RCVs have been incorporated in CRC's masterplan. It includes refresher courses that would allow existing RCVs to get together, clarify concepts on and practices of flood preparedness and mitigation; and learn from each other's experiences.

Between training sessions, CRC's training staff organized regular group meetings and site visits to support the RCVs as they worked in their respective communities. The meetings and visits allowed the RCVs to exchange experiences in the practical application of their training. At the same time, these enabled CRC staff to monitor progress in the communities and troubleshoot individual problems.

(Apikul, 2002)



Cambodia



India

ICTs for Disaster Reduction

Advancement in **information and communications technology (ICTs)** is making it easier to collect, access, analyze and share information. The Internet has become a key source for information and learning. Moreover, mobile and wireless technologies are becoming increasingly cheaper and accessible, and are viable options for communications.

However, it is important to make sure that the targeted stakeholders have the necessary hardware (e.g. computers, mobile phones, network infrastructure), software, training and support system.

India has developed a nationwide Internet-based network for more effective disaster response.

When cyclones, earthquakes or other calamities next strike in India, district officials in many areas can go online and quickly mobilize support for evacuation, search and rescue, medical aid and other relief priorities.

The Indian Disaster Resource Network (IDRN) <<http://idrn.gov.in>> is part of the nationwide Disaster Risk Management Program. It is a joint initiative by the Government and UNDP that aims to reduce the vulnerability of communities in 169 districts in 17 States most at risk.

IDRN is a nationwide web-based inventory of essential resources for disaster response. The IDRN lists out the equipment and the resources by type and by the functions it performs and it gives the contact address and telephone numbers of the controlling officers-in-charge of the said resources so that the equipment can be promptly mobilized. IDRN is accessible to emergency officers, district collectors, relief commissioners and other disaster managers at various levels of government.

National UN Volunteers helped design and develop the IDRN web-based application, providing technical support to the Government at district and state levels. They now assist relief commissioners and district authorities, in coordination with Government departments and public sector partners, in updating and maintaining smooth operation of the network.

(India Disaster Resource Network Brochure, undated; MHA, 2004; MHA, undated; UNDP, 2003)



Lessons Learned from ADPC



ADPC's Asian Urban Disaster Mitigation Program (AUDMP) started in 1995 when disaster risk reduction was just a concept. The regional program with projects in nine countries aimed to provide working examples of risk reduction measures for Asia. The AUDMP approach provides some lessons learned on education, public awareness, training and information sharing that could be applied to other programs at regional, national and local levels.

<http://www.adpc.net/audmp/default.html> provides more information on AUDMP

To develop a comprehensive framework and strategy for building a common understanding of disaster risk reduction:

Requires a clear understanding of local perspectives

Extensive training was provided in different forms to equip stakeholders with the understanding and technical skills to reduce disaster risks. A series of regional course curricula were developed and delivered to potential trainers at the national level. The curricula were then adapted to suit national needs, translated to the local language and delivered by national trainers.

Needs to be sustainable

In many cases, the training courses could only be held once with support from ADPC funds and technical assistance. In Sri Lanka, however, the Center for Housing, Planning and Building, a training and research center under the Ministry of Housing and Plantation Infrastructure, has been able to *sustain* the activities. The center receives an annual budget to conduct training for national, provincial and local level public and private sector agencies. They are able to conduct regular disaster risk management courses, as well as incorporate disaster risk reduction issues in other regular courses on urban development planning, housing development and construction management.

Calls for multi-stakeholder participation and partnerships in planning, implementation and evaluation

Education programs in schools were implemented in Bangladesh, Indonesia, Lao PDR, Nepal and Sri Lanka. In Lao PDR, the development of teaching materials and teachers' guidelines for



educating primary school students on disaster risk reduction was led by the National Disaster Management Organization (NDMO) and the National Research Institute of Educational Science (NRIES) in consultation with curriculum development specialists, representatives of teacher trainers, school directors, teachers, students, road safety department and the fire brigade. These teaching materials are in the process of being incorporated into the national curriculum.

Entails network for local, national, regional and international sharing

It is part of AUDMP's strategy to facilitate learning and promote replication of good practices worldwide. AUDMP assisted in the documentation of information and experiences for different audiences (in case studies, working papers, training materials and videos) and in the sharing of knowledge through different forums (in conferences, workshops, training courses, the Internet and e-mail discussion list).



Discussion Questions



- Are disaster risk reduction knowledge development programs for targeted groups incorporated as part of policies and plans?
- Have disaster risk reduction modules been incorporated in the regular programs of schools, universities, institutes of public administration, defense academies, etc?
- Are you dependent upon courses conducted outside the country? If so, do they meet your needs?
- Have the teachers, trainers, educators been trained and provided with updated materials to deliver the courses?
- To what extent is the media involved in promoting disaster risk reduction by featuring regular news on disaster risk reduction initiatives and translating disaster warnings into layman's language?
- Is information on disaster risk reduction current, accurate, consistent, widely available and targeted at users within the country and to other countries in the region?
- Do you systematically document and disseminate/make available the processes, costs and benefits, and lessons learned of the disaster risk reduction project using different media?
- Do you promote cross-sectoral communication within your organization and\ with target groups you work with?



Challenges

We have come a long way but much still needs to be done to develop a “culture” for disaster risk reduction. The wide range of stakeholders that deal with different dimensions of disaster risk reduction is obvious throughout the Primer. One important challenge is to stimulate and develop ways to link the different stakeholders and the different dimensions of disaster risk reduction.

Education, public awareness raising, training and information sharing are approaches that can be used to reduce disaster risks. To benefit from such approaches, a comprehensive strategic framework that considers the problems, needs and development objectives of the target stakeholder(s) is required. For these approaches to be effective they need to be incorporated in disaster risk reduction policies and plans that appreciate the multi-stakeholder, multi-disciplinary nature of disaster risk reduction. At the same time, disaster risk reduction education, public awareness raising, training and information sharing need to be integrated in development policies and plans of different sectors.

For example, disaster risk reduction in university courses and academic research needs to be multi-disciplinary in nature and supported by a multi-disciplinary group of professors and researchers. At the same time, other disciplines such as environmental management, planning, architecture, public administration and development studies need to integrate disaster risk reduction as part of their courses to undergraduates and postgraduates.

Often, education, public awareness raising, training and information sharing activities take time to set up and sustain. The challenge is to be able to sustain efforts and keep important stakeholders actively interested and engaged in the efforts. The right people need to be brought together. A well-targeted initiative from which all partners can benefit must be designed and implemented. When it works, these approaches could bring together more opportunities, partners and resources to meet the complex challenges of risk reduction.

Another challenge is to make these opportunities, partners and resources accessible. There is a need for closely linked national, regional and international information centers to identify, expand, order, synthesize, translate (to different languages) and disseminate information. At the same time, strategies to reduce gender, age and economic barriers to the use of new information and communication technologies need to be promoted.



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<http://www.undp.org/dpa/frontpagearchive/2003/september/15sep03/index.html>

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Yakupitiyage, T., 2004, **Safer Cities 10: Creating Earthquake Preparedness in Schools**, Bangkok: Asian Disaster Preparedness Center.



Resources



General

Abarquez I. and Murshed Z. (ADPC 2004): Community Based Disaster Risk Management – field practitioner's handbook,

ADPC (2002): Regional Workshop on Best Practices in Disaster Mitigation – Lessons Learned from the Asian Urban Disaster Mitigation Program and other initiatives

ADPC's Safer Cities Case Study Series

<http://www.adpc.net/audmp/library.html>

Safer Cities 1: Community-Based Initiatives in Katmandu Valley, *Pioneers in earthquake mitigation and preparedness*, January 2002.

Safer Cities 2: Coping with Flood in Cambodian Communities, *Enhancing community solidarity through capacity building* June 2002.

Safer Cities 3: Mitigation Flood Risk in Cambodian Communities, *Empowering communities to manage disaster risk*, July 2002.

Safer Cities 4: The School Earthquake Safety Program in Kathmandu Valley - *Building safer communities through schools*, January 2003

Safer Cities 5: Community-Based Disaster Risk Reduction in Central Sri Lanka, June 2003.

Safer Cities 6: Promotion of Disaster Mitigation in Sri Lanka, *Piloting disaster risk communication through empirical approach*, October 2003.

Safer Cities 7: Can Small Be Beautiful? Community-Based Flood Mitigation in Bangladesh, *Community based flood mitigation in Bangladesh*, February 2004.

Safer Cities 8: Channels of Commutation – a Challenge, *Public awareness for flood preparedness in Bangladesh*, March 2004

Safer Cities 9: Reducing Fire Threats to Homes: *Piloting Community-based Fire Risk Assessment in Ban Hatsady Village*, July 2004

Safer Cities 10: Creating Earthquake Preparedness in Schools
A Case Study of Mitigation Efforts in Indonesia, April 1004

ADPC, 2002: Developing Effective Disaster Risk Communication Strategies in Vietnam: Understanding People's Perception and Behavior, Report by Asian Disaster Preparedness Center (ADPC), October 2002.

<http://www.adpc.net/drp-clv/vietnam/files/research/Vietnam%20Research.pdf>

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<http://www.adpc.net>

Rodraksa, N., 2003: Safer Cities 6: Promotion of Disaster Mitigation in Sri Lanka, Bangkok: Asian Disaster Preparedness Center.

http://www.adpc.net/audmp/library/safer_cities/7.pdf

United Nations International Strategy for Disaster Reduction

<http://www.unisdr.org>



Education

American Red Cross Masters of Disaster Curriculum for Disaster Safety
<http://www.redcross.org/disaster/masters/intro.html>

A range of disaster risk reduction courses is delivered by Overseas Development Group, University of East Anglia, UK
<http://www.odg.uea.ac.uk>

Bachelor of Science in Disaster Risk Management, University of Portsmouth, UK
<http://www.port.ac.uk/edam>

Benfield Hazard Research Center, University College London, UK
<http://www.benfieldhrc.org>

CASITA - A program of ADPC in partnership with 15 Asian universities / training institutes to build capacity using Information Technology Applications
<http://www.adpc.net/casita/default.html>

Participating universities / training institutes include:

Asian Institute of Technology, Thailand
Bangladesh University of Engineering and Technology, Bangladesh
Center for Environmental Planning and Technology, India
Chiang Mai University, Thailand
Gadjah Mada University, Indonesia
Hanoi Architectural University, Vietnam
Indian Institute of Remote Sensing, India
Institut Teknologi, Indonesia
Kathmandu University, Nepal
Khulna University, Bangladesh
University of Moratuwa, Sri Lanka
University of Peshawar, Pakistan
University of Philippines, Philippines
University of Ruhuna, Sri Lanka
Urban Research Institute, Lao PDR

Certificate in Disaster Management, Indira Gandhi National Open University, India
http://www.ignou.ac.in/academic_programmes.htm#areaspeawa

Masters of Science Course in Disaster Management, Cranfield University, UK
<http://www.rmcs.cranfield.ac.uk/dmc>

Master of Science in Disaster Management and Sustainable Development, University of Northumbria, UK
http://online.northumbria.ac.uk/geography_research/ddc/msc.htm

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<http://www.education.noaa.gov>

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<http://www.duryognivaran.org>

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Training

Asian Disaster Preparedness Center, Bangkok
<http://www.adpc.net>

Courses currently being held in ADPC include:

Hazard-related courses	Disaster risk management courses	Sector-specific courses
Earthquake Vulnerability Reduction for Cities	Climate Forecasting and Applications	Land-Use Planning and Risk Management
Flood Risk Management	Community-Based Disaster Risk Management	Hospital Preparedness for Emergencies
Technological Risk Management	Disaster Risk Communication	Medical First Responders
Urban Fire Risk Management	Disaster Risk Management	Public Health in Complex Emergencies
	Urban Disaster Mitigation	Training for Instructors

Disaster Management Center at the University of Wisconsin, USA
<http://dmc.engr.wisc.edu>

Disaster Mitigation Institute, India
<http://www.soutasiadisasters.net>

International Institute for Disaster Risk Management, Philippines
<http://www.idrmhome.org>

Training centers with subregional or national focus
 (Extracted from ISDR, 2004: 240)

- Bangladesh Disaster Preparedness Center, Dhaka, Bangladesh
- Center on Integrated Rural Development for Asia and the Pacific, Dhaka, Bangladesh
- International Center of Integrated Mountain Development, Kathmandu, Nepal



- National Center for Disaster Management at the Indian Institute of Public Administration, New Delhi, India
- National Institute of Rural Development, Hyderabad, India
- Uttaranchal Disaster Mitigation and Management Center, Dehra Doon, India

United Nations Disaster Management Training Program

<http://www.undmtp.org>

Information Sharing

ASEAN Committee on Disaster Management

<http://www.acdm.net>

Asian Disaster Reduction Center

<http://www.adrc.or.jp>

Caribbean Disaster Information Network

<http://wwwcardin.uwimona.edu.jm:1104/home.htm>

Duryog Nivaran South Asian Disaster Management Network

<http://www.duryognivaran.org>

Gender and Disaster Network

http://online.northumbria.ac.uk/geography_research/gdn/index.html

**International Federation of Red Cross and Red Crescent Societies' World
Disaster Reports**

<http://www.ifrc.org/publicat/wdr/index.asp>

Latin America Network for the Social Study of Disaster Prevention

<http://www.desenredando.org>

**MekongInfo: Regional Information System on Participatory Natural
Resource Management**

<http://www.mekonginfo.org>

Natural-Hazards-Disasters email discussion group

<http://www.jiscmail.ac.uk/lists/natural-hazards-disasters.html>

**Natural Hazards Research and Applications Information Center, University
of Colorado, USA**

<http://www.colorado.edu/hazards>

Radical Interpretations of Disaster Experience

http://online.northumbria.ac.uk/geography_research/radix

Regional Disaster Information Center

http://www.crid.or.cr/crid/ing/index_ing.html

Relief Web

<http://www.reliefweb.int>