



UNESCO Bangkok
The Asia-Pacific Programme of Educational
Innovation for Development
Education for Sustainable Development



Natural Disaster Preparedness and Education for Sustainable Development



“

Anticipating, educating and informing are the keys to reducing the deadly effect of such natural disasters. Unfortunately such activities have not been given priority.

”

UNESCO Director-General Koïchiro Matsuura, 3 January 2005

Natural Disaster Preparedness and Education for Sustainable Development



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Alia Lesmana

Lubna Moosa (Insight Consultancy Service)

UNDP Bangladesh

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Nikolaos Vasilikoudis a.k.a Lucretious

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Foreword

The earthquake and subsequent tsunami on 26 December 2004 devastated communities in coastal regions, primarily in Indonesia, the Maldives, Sri Lanka, India and Thailand. Nineteen months later, Indonesia experienced a second tsunami which destroyed villages and livelihoods. The governments of disaster affected countries have called for strengthened disaster preparedness to prevent such debilitating outcomes in the future.

In the wake of the 2004 tsunami, numerous assessment teams began gathering information on its impact on communities and the environment. The focus of activity in Thailand and other countries directly after the disaster was naturally on relief. However, the implementation of many activities was undertaken only with short-term needs in mind while problems of longer-term social, environmental and economic unsustainability were already becoming evident. The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (adopted at the World Conference on Disaster Reduction, 18-22 January 2005, Kobe, Hyogo, Japan) identifies education, coupled with sustainable management and planning, as the only effective long-term solution to prepare for, and alleviate, future tsunamis and other natural disasters.

Significantly, the disaster has served to highlight the importance of local and traditional knowledge in the region. There are accounts in Thailand, for example, of sea gypsy communities that escaped the tsunami based on such knowledge (Rungmanee & Cruz, 2005). These and other traditional approaches should be seriously considered and utilized in future education initiatives for disaster preparedness.

Sustainable development is undermined by the occurrence or threat of disasters. The Director General of UNESCO, Mr. Koïchiro Matsuura, highlighted the significant role of education in improving the capacity of individuals and communities to reduce the risk of disasters: "anticipating, educating and informing are the keys to reducing the deadly effect of such natural disasters" (3 January 2005, UNESCO Press Release).

Furthermore, UNESCO has identified education for natural disaster preparedness as a core issue to be addressed under the Decade of Education for Sustainable Development (DESD). ESD is a most appropriate framework for natural disaster preparedness in three important ways:

- ESD is interdisciplinary and holistic. Therefore, important consideration is given to the impacts on, and relationship between, society, the environment, economy and culture;
- ESD promotes critical thinking and problem solving that is essential to the empowerment of stakeholder groups threatened or affected by natural disasters; and
- ESD seeks to be locally relevant, acknowledging that languages and cultures say and understand things differently, and addresses both local as well as global issues.

This publication draws together the work completed under the "Educational Materials for Education for Natural Disaster Preparedness in Asia-Pacific in the Context of Education for Sustainable Development" project. *Natural Disaster Preparedness and*

Education for Sustainable Development was produced by the UNESCO Asia and Pacific Regional Bureau for Education and financed by the Japanese Funds-in-Trust of the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Government of Japan as well as the public donations raised by the citizens of Switzerland and contributed to UNESO Bangkok by the Swiss National Commission for UNESCO.

Natural Disaster Preparedness and Education for Sustainable Development provides details of the development of culturally appropriate and locally relevant educational material for natural disaster preparedness that targets key stakeholder groups and integrates Education for Sustainable Development (ESD) principles and strategies. It is expected to develop and strengthen a regional network to implement and further ESD initiatives throughout the region by promoting education for natural disaster preparedness as well as ESD. This will underpin an identified key area of the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters.

Suitable indicators for measuring the long-term impact of the project must be identified and may be distinctive to particular stakeholder groups targeted in the project. The impact of this project will be evident from the extent to which disaster prevention, recognition and preparedness within the framework of ESD are integrated into the policies and practices of targeted stakeholder groups. Guidelines and recommendations for the evaluation of ESD projects are contained within UNESCO's International Implementation Scheme (IIS) for the Decade, which will be used to inform the long-term evaluation of this project.

The publication articulates the lessons learned by the four in-country project teams (i.e., the Maldives, Thailand, Indonesia and India) and two collaborating organizations (i.e., Asia/Pacific Cultural Centre for UNESCO and Bangladesh Red Crescent Society) in developing materials in collaboration with community groups in the Asia-Pacific region. It provides insights into effective techniques to develop locally relevant educational materials, and highlights some of the challenges in that field.

Ideally, this undertaking will assist in setting a strategic agenda in the Asia-Pacific region to ensure education for natural disaster preparedness is firmly entrenched in all educational contexts in the long-term. It is with great anticipation that we hope this publication will serve to inform, guide and inspire natural disaster preparedness and mitigation initiatives throughout the Asia-Pacific region.



Sheldon Shaeffer

Director
UNESCO Asia and Pacific Regional Bureau for
Education, Bangkok, Thailand

Asian Disaster Preparedness Center

The Asian Disaster Preparedness Center (ADPC), established in 1986, is a regional, inter-governmental, non-profit organization based in Bangkok, Thailand. Its mandate is to promote safer communities and sustainable development through the reduction of the impact of disasters in response to the needs of countries and communities in Asia and the Pacific. It does this by raising awareness, helping to establish and strengthen sustainable institutional mechanisms, enhancing knowledge and skills, and facilitating the exchange of information, experience and expertise.

ADPC develops and implements disaster risk management programmes and projects by providing technical and professional services in formulating national disaster management policies. It facilitates the development of institutional mechanisms to support disaster risk reduction, capacity building of disaster management institutions, programme design for comprehensive disaster risk management, post-disaster assessment, public health and emergency management, land-use planning, disaster-resistant construction, and the planning of immediate relief response and subsequent rehabilitation activities.

It is time that disaster experts and practitioners take a more proactive approach to disaster management. In its twenty years, ADPC has responded dynamically to the paradigm shift in disaster management, readily and actively adjusting its operational strengths to address evolving developments, and structuring its technical focus on disaster risk management.

This vigorous and comprehensive approach is further reinforced by ensuring a more prepared and aware community through education and awareness-raising initiatives with schools and colleges. This is complemented by ADPC's significant contribution to education sectors in countries of the region, to name a few:

- The School Earthquake Safety Programme in Kathmandu Valley, Nepal
- Creating Earthquake Preparedness in Schools in Indonesia
- Towards Technological Hazard Risk Reduction in Ahmedabad, India
- Mine Risk Education Program in Thailand
- Curriculum Development in Lao PDR
- Capacity-building in Asia using Information Technology Applications (CASITA)
- Mainstreaming Disaster Risk Management into Development (MDRD) in Asia
- Flood Emergency Management Strengthening in Lower Mekong Basin Countries
- Programme for Hydro-Meteorological Disaster Mitigation in Secondary Cities in Asia

ADPC through this current partnership with UNESCO strives to promote a culture of preparedness and prevention by promoting and supporting the mainstreaming of education of disaster risk reduction. Cultural approaches and paradigms must be taught early to have real success. This project has shared innovative and stimulating educational materials and programmes for schools by linking risk reduction curricula to public awareness programmes. Several other initiatives such as educational presentations, displays and bulletin boards, print and electronic media, radio and television, and any other medium in which disaster safety is communicated to educate and raise awareness about specific hazards can be opportunities for new partnerships and projects that encourage and educate

children to be a proactive force in reducing risk in their communities. An ideal vision is that education be made an integral part of long-term development strategy in disaster risk management.

ADPC is appreciative and pledges its commitment to UNESCO's challenge to communicate, disseminate information for education, and collate the production of relevant educational materials in disaster prevention and preparedness that integrate important principles of ESD. Let us work together towards a common goal of a more educated and prepared community in disaster risk reduction.

A handwritten signature in black ink, appearing to read "Bhichit Rattakul". The signature is fluid and cursive, with the first name being more prominent.

Bhichit Rattakul

Executive Director
Asian Disaster Preparedness Center

Introduction

The “Educational Materials for Education for Natural Disaster Preparedness in Asia-Pacific in the Context of Education for Sustainable Development” project has brought together in-country teams, collaborating organizations, UNESCO and the Asian Disaster Preparedness Center (ADPC) to develop natural disaster preparedness educational materials for the Asia-Pacific region.

This regional project focused on gathering, developing and disseminating information from key stakeholders in the Asia-Pacific countries most affected by the Indian Ocean tsunami. This included briefings in Bangkok, Thailand, Jakarta, Indonesia and New Delhi, India with staff from UNESCO and UN partner agencies as well as key stakeholders in Indonesia, India, the Maldives, Sri Lanka and Thailand.

The goal of this project was to develop the preparedness of local marginalized stakeholder groups towards natural disaster prevention, recognition and preparedness. UNESCO Bangkok aimed to employ ESD as a framework to engage new partners in order to facilitate holistic and critical thinking as well as problem-solving in local communities threatened or affected by natural disasters. The project focused on improving planning for relief and recovery using a bottom-up approach that highlights the importance of coordination and communication among stakeholder groups at all levels.

The principle objectives of this initiative were:

1. Communication and dissemination of information to inform education and policy formulation for natural disaster prevention, recognition and preparedness; and
2. Production of locally relevant educational materials in natural disaster prevention, recognition and preparedness that integrate important principles of ESD and are adaptable to different sectors and stakeholders.

The research methodology used to conduct the analysis of existing materials included consultation both with Ministries of Education and with carefully selected key environmental organizations with knowledge and expertise in education for sustainable development in Bangladesh, Indonesia, India, the Maldives, Sri Lanka, and Thailand as well as in other natural disaster prone countries of the region such as Japan. Organizations and individuals who contributed to the project were already involved in disaster reduction education, post-tsunami management and assessment at the local level, and were in a position to identify which potential natural disasters could occur (e.g., floods, tsunamis, earthquakes, fires, typhoons, etc.), what effect they have and how damage can be minimized.

In developing their projects, the teams learned that:

- Collaboration and Consultation – are essential to correctly identify needs and gaps, learn about a community’s preferred learning styles and develop ongoing support for their projects.
- Affected Communities are Keen to Help – natural disaster affected communities want to be involved in projects that will lessen the impact of future natural disasters. They must be viewed as a valuable resource rather than passive recipients of donor aid.

- Language Barriers – it is important to use local languages effectively in order to deliver natural disaster preparedness messages. However in doing so, the universality of the project may be lost. A lack of natural disaster preparedness terminology in local languages inhibits effective natural disaster preparedness communication.
- Culture and Religion – require sensitivity in order to develop innovative approaches that can build upon local culture and religion and promote communication and understanding where certain cultural beliefs and practices may present obstacles to natural disaster preparedness.
- Government/Programmatic Support – is important to develop sustainable, ongoing commitment to local stakeholder initiatives. This can be at the national or local government levels and can include policy, financial or coordination efforts.

The project used a three tier-collaborative model to develop activities. The international community provided funding, coordination and expertise to in-country national teams who collaborated with local communities to identify needs and develop appropriate approaches to fill those gaps. The teams developed a wide range of products, from a board game to policy documents, in response to the context specific issues that they identified through country workshops. This variety is indicative of the teams' abilities to identify the needs of their target community and to develop creative educational innovation for natural disaster preparedness.

The teams came together to discuss their completed projects with regional agencies at a workshop on 1 June 2006 in Bangkok, Thailand. Through presentation sessions and group discussions, they were able to share their experiences with disaster and education practitioners in the region. The key conclusions drawn regarded the role of collaboration in identifying needs, various community learning preferences, and engendering support within the community to build commitment for long-term educational support.



Derek Elias

Programme Specialist

Education for Sustainable Development

Technical and Vocational Education and Training

UNESCO Asia and Pacific Regional Bureau for

Education, Bangkok, Thailand

Country Reports

The following six reports outline the experiences of the four in-country ESD development teams (implementers of the *Education for Natural Disaster Preparedness in Asia-Pacific in the Context of Education for Sustainable Development* project) and two collaborating organizations working in the field of ESD in natural disaster preparedness.

The in-country teams were:

- Maldives – Maldives National Commission for UNESCO, Ministry of Education – *School Disaster Risk Management Policy*
- Thailand – Thailand Environment Institute (TEI), Nonthaburi, Thailand – *Landslide Education Video*
- Indonesia – Institute for Educational Studies And Development, Brawijaya University – *Disaster Master: Natural Disaster Preparedness Game, and Folding Pictures Kit*
- India – University of Madras – *Community Based Disaster Preparedness Study*

The two collaborating organizations were:

- Bangladesh Red Crescent Society – *Cyclone Preparedness Programme*
- Asia/Pacific Cultural Centre for UNESCO (ACCU) – *PLANET 4 Educational Material on Natural Disasters*

The reports below provide information on the activities undertaken by the teams, lessons that they have learned, beneficiaries of their activities, and the way forward for ESD in natural disaster preparedness. A summary of the lessons learned and conclusions drawn from this project is included later in this publication.



Maldives Country Report

Maldives National Commission for UNESCO, Ministry of Education

Introduction

The Maldives is an archipelago of 1,200 islands of which 200 are inhabited. In the past, the Maldives had been exposed to moderate levels of natural disasters and had an ad hoc emergency response system until the tsunami of 2004.

The Indian Ocean Tsunami of 26 December 2004, the worst natural disaster in the history of the Maldives, affected the entire country. All but nine islands were flooded and 13 islands were totally evacuated. The disaster claimed 82 lives, left 26 people missing and displaced over 15,000 people (about 5.5 per cent of the population). The tragedy shattered the livelihoods of a third of the population causing widespread trauma and distress.

This tragedy awakened the country to the need for national level strategies for disaster prevention, recognition and preparedness. It re-emphasized the inherent vulnerability of the country to environmental disasters and created new urgencies in setting up stronger mitigation measures.

In 2005, the Cabinet recommended that a formal structure for disaster management be established for the first time and consequently the National Disaster Management Centre (NDMC) was made a permanent organ of the Government. Since then, the Government has formulated a Draft National Disaster Management Policy, and it envisages that every ministry, department and public corporation must prepare its own disaster management plan.

In line with the national disaster preparedness policies, the Ministry of Education of Maldives aims to establish a disaster preparedness policy for island schools.

The current project, funded by the Japanese Funds-in-Trust through UNESCO Bangkok and the ADPC, availed the services of local consultants for the Maldives to prepare a preliminary document that covers the necessary background material required to formulate a comprehensive disaster preparedness policy for island schools.



- ▲ The observed modes of transportation to schools were walking, bicycles or privately operated buses.



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Photo Captions:

- 1-2: The tsunami of 2004 passing through an island.
- 3: A school just 10 metres from shore destroyed by the tsunami.
- 4: High tide flooding a school near the shore.

Activities

Schools as Gateways for Education for Natural Disaster Preparedness

The Maldives has a young population; close to 45 per cent of the population is under 18 years old with a great majority enrolled in schools. According to the 2005 official statistics, there were 102,073 students enrolled in 334 schools across the Maldives and 5,616 teachers teaching students in those schools. Thus, more than 40 per cent of the total population (270,101) is directly engaged in the schools on any given school day.

In addition, schools have a strong bond with the community through the active engagement of the Parent-Teacher Associations (PTAs) in school affairs.

Moreover, with the very limited public infrastructure on the islands, schools are not only a place for the students: they also serve as the islands' multi-purpose convention centres where community activities, meetings and public events are held.

The Maldives, being a country with a population of less than 300,000 living on some 200 tiny islands, is characterized by closely-knit island communities. Schools are an important cornerstone of their daily life.

Thus, because of the strong link between schools and the wider community, schools can be an ideal starting point for the formulation and implementation of disaster preparedness policies, dissemination of disaster preparedness information and establishing emergency procedures.

Identifying Priorities

Initial consultative meetings were held with the officials of the Ministry of Education. It was decided that the first step towards disaster preparedness education through schools would be to formulate a disaster preparedness policy for schools.

It was also decided that UNESCO's assistance be used to recruit two local consultants to conduct a school vulnerability assessment and produce a preliminary report which would serve as a basis for developing a policy framework for disaster preparedness. UNESCO's assistance was used to develop a policy guideline for the Ministry of Education of Maldives with the help of Care Society (a local NGO) and Insight Consultancy Service (ICS; a local consultancy firm).

Development Process

The project team did commendable work through consultation and feedback from the relevant stakeholders including the Ministry of Education, National Disaster Management Centre, international NGOs, and parents, teachers, school administrators and students from selected schools.

The archipelagic nature of the country makes inter-island transportation and logistics difficult and expensive. Therefore, the project team was able to visit only a handful of schools within the available time and budget and was unable to conduct a thorough assessment of the vulnerability of each school across all of the inhabited atolls. However it did manage to gain a good impression of many of the potential risks facing schools in the Maldives.

Following the tsunami of 2004, disaster preparedness is on everyone's priority agenda and thus, the team received full cooperation from all stakeholders.

Lessons Learned

A low probability of hazard occurrence yet high vulnerability due to the geographical, topographical and socio-economic factors of the islands exposes the Maldives to a moderate level of risk overall. Hence, it is critical that specific policies and measures are implemented to reduce the level of vulnerability in order to avoid a disproportionate scale of losses and damage.

The most important lesson learned from the consultations and feedback for material development was that education for disaster preparedness is an endless

process that requires a constant collaborative effort from all parties concerned. The project team had discussions with officials from the government sector, NGOs, island chiefs, school administrators and teachers. Meetings at the islands were conducted in a relaxed environment at a time and a place convenient to the respondents.

Following the 2004 tsunami that shocked the entire country, people are eager to learn about the potential for disasters and how to prepare themselves for such occurrences. The term Disaster Preparedness (DP) itself was new to Maldivians who only started hearing such terms as mitigation, risk reduction and disaster preparedness after the tsunami. When the project team was carrying out their work in the islands, there were requests for DP workshops. After the tsunami, DP was incorporated into every possible project carried out by the Government, NGOs and community-based organizations (CBOs). The Government has established a permanent National Disaster Management Centre and the United Nations has established the International Strategy for Disaster Reduction (ISDR) to build on partnerships and take a global approach to disaster reduction.

Overcoming the language barrier posed a difficult challenge as most of the DP terminologies did not have equivalent terms in the local Divehi language. As a result the team members had to go into long explanations to communicate their messages. As DP involves scientific and specific terminologies, this is a challenge for any party who wishes to produce local materials. Standard local terms may have to be developed and used by all parties involved in disaster preparedness to minimize message confusion and facilitate effective communication with the public.

Maldivians have strong religious faith. This may be the reason why some respondents argued that a natural disaster is an act of God and however much we try, we cannot prepare for it. It was difficult to convince them that in preparing for disasters, people may be acting with the will of God rather than against it. Others are still in denial of disasters and believe that a large-scale disaster such as the tsunami will not happen again. Thus, educational initiatives should address not only how people should prepare for natural disasters but also why they should be prepared for them.

Project Beneficiaries

The directive for a policy framework produced through the project serves as an important reference for anyone who wishes to produce disaster preparedness and education materials in the Maldivian context. The report, *Formulating a Disaster Preparedness Policy for Schools in Maldives: Reduce, Ready, Respond and Recover*, points out the risks and inherent vulnerabilities of the country by first conducting a situational analysis through examining hazards, situations in schools, the organizational framework for disaster management at the national level, and expected outcomes/outputs from ongoing complementary projects/programmes by intergovernmental organizations and NGOs. Key recommendations are then given for each of the basic components identified for a policy framework which are based on the need to: 1) make disaster reduction a priority; 2) know the risks and be prepared to take action; 3) reduce the risk; 4) be ready to act; 5) be responsive; and 6) plan for recovery. Two cross-cutting components, stakeholder engagement and capacity-building, link the six basic components. The roles and responsibilities of stakeholders; training, education and awareness needs; as well as recommendations on how to raise the understanding of risks, reducing risks, preparedness, response and recovery through formal and informal education are elaborated upon.

The document highlights the current situation at schools pointing to the fact that children are very vulnerable to disasters. By making schools a safer environment, island communities can substantially reduce risk and loss arising from disasters.

The project has produced an important guideline and reference for the Ministry of Education. The Ministry is currently in the process of drafting an Education Act, and the project has highlighted the importance of reflecting school safety issues in the Act. It also gives impetus and direction for incorporating education for disaster preparedness into the school curriculum and co-curricular activities.

The Way Forward

The policy document is currently being circulated through the relevant departments of the Ministry of Education (Policy Planning, School Supervision, School Administration, Physical Facilities Development, and Curriculum Department) for their consideration and feedback. The document will then be used as the basis for developing a disaster preparedness policy for schools.

Based on the policy document, individual schools will be asked to develop school-specific safety policies and procedures.

The Ministry of Education will follow up to explore how the suggestions made in the ICS report can be incorporated into school curriculum and student activities, and consider the safety measures that should be incorporated into physical planning and infrastructure of schools.

The National Disaster Management Centre, Island Offices and CBOs will need to be consulted to decide and agree on the specific role of schools in disaster management and community education for disaster preparedness.

In order to realize the next steps, it will be imperative that funding follows from the regular government budget and donor agencies for the implementation of the planned programmes and activities.

Annex: Photographic Summary of Existing School Disaster Risk

The Vision Statement of Haa Dhaal Atoll Education Centre, HDh.Kulhudhuffushi

To promote a safe, nurturing environment that emphasizes respect, responsibility and self-discipline by promoting individual self esteem and fostering positive behaviour and attitudes. Every individual in the school is considered a unique person of value, with the collaboration of the community in the Islamic culture in accordance with the challenging world.



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Photo Captions:

- 1: Ameer Ameen Pre-School, HDh.Kulhudhuffushi has high walls and one exit for the children.
- 2: Ameer Ameen Pre-School, HDh.Kulhudhuffushi – Playground
- 3-4: Haa Dhaal Atoll Education Centre, HDh.Kulhudhuffushi – High voltage substation located within school premises.



© Insight Consultancy Service / Lubna Moosa

Photo Captions:

- 1: Nolvivanfaru School, HDh.Nolvivanfaru – New classroom being built.
- 2: Nolvivanfaru School, HDh.Nolvivanfaru – Public announcement system and fire extinguishers placed outside the office.
- 3-4: Haa Dhaal Atoll Education Centre (left) and Laam Atholhu Madhrasa, L.Maabaidhoo (right) have two and three storey classrooms with only a single staircase on one side to exit.
- 5-6: Laamu Atholhu Madhrasa, Maabaidhoo – Children studying in pre-school classrooms. These rooms get flooded during rainfall as the ground level of the school is lower than that of the surrounding area.



1



2



3



4



5



6

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Photo Captions:

- 1: This new pre-school being built in L.Fonadhoo is slightly below ground level.
- 2: Classrooms separated by standing wooden partitions – Mathimaradhoo School, L.Gan.
- 3: Classrooms separated by standing wooden partitions – reported to have fallen down on the children during high winds – Mukurimagu School, L.Gan.
- 4: Mukurimagu School, L.Gan is located about 15m from the shoreline. Boundary walls of the school collapsed due to the impact of the tsunami. The children are fully exposed to the coast.
- 5: The toilets of Mukurimagu School, L.Gan were damaged during the tsunami and cannot be used now.
- 6: New classrooms being built at Mukurimagu School, L.Gan.



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Photo Captions:

1-2: Generally two types of classrooms are found in schools. Type 1 (Nolhivaram School, HGh.Nolhivaram) has a single exit door, glass windows and is closed off with less ventilation. The children are more protected from strong winds and rain. Type 2 classrooms are open usually with two exit doors and low walls for easy evacuation in case of an emergency. However, the children are exposed to winds and rainfall.

3: Laamu Atholhu Madhrasa, L.Maabaidhoo – electric bell and manual bell outside staff room.

4: Elevated dias for assembly – Haa Dhaal Atoll Education Centre, HDh.Kulhudhuffushi.

5-6: Fire extinguishers were seen in all schools placed in two or three locations. In some cases, instructions were placed near the extinguishers. However, all schools reported that the school staff are not trained to use them.



Thailand Country Report

Thailand Environment Institute (TEI), Nonthaburi, Thailand

Introduction

A Consultative Meeting on Education for Natural Disaster Preparedness in Thailand in the Context of Education for Sustainable Development (ESD) was held at UNESCO Bangkok in October 2005. Twenty four representatives of Thai public agencies and civil society organizations attended the meeting. Attendees included the Meteorological Department; the Department of Labour, Protection and Welfare; the Department of Disaster Prevention and Mitigation; the Ministry of Education (Office of the Permanent Secretary for Education, Office of Basic Education Commission, Office of the Higher Education Commission, Office of the Vocational Education Commission, and Office of Non-Formal Education Commission); the Ministry of Natural Resources and Environment (Department of Mineral Resources, Department of Marine and Coastal Resources, and Department of Environmental Promotion); Mahidol University; and representatives from Chiang Dao District.

Key recommendations from the meeting included the need for adequate access to localized disaster preparedness educational materials for local leaders and communities to use in disaster risk training in disaster prone areas. It was concluded that a major seasonal disaster facing Thai citizens in specific areas is landslides. Landslides or mudslides are serious geological hazards that occur in 15 northern provinces as well as in an additional 36 provinces around the country.

Supported by the Japanese Funds-in-Trust through UNESCO Bangkok, the *Education for Natural Disaster Preparedness in Asia-Pacific in the Context of ESD* project employed ESD as a framework to facilitate the production of Thailand-specific educational materials for local communities threatened or affected by landslides. It was designed to cater more effectively for the delivery of awareness and action messages, tailored to the needs and learning styles of the local people. The project focused on the northern region of Thailand that is particularly vulnerable to landslides. Based on local culture and community learning styles, video was selected as the best communication option to deliver landslide awareness messages to enhance disaster education in the target area as it is a medium readily available to the local people and one that can reach many people with different educational backgrounds.¹

Video production focused on the following key points:

Awareness Messages	Action Messages
<ul style="list-style-type: none">• Why talk about landslides?• What are landslides?• What causes them (with specific reference to the northern geological setting)?• How do landslides affect you?• How can I protect myself, my family, and my community from landslides?• What is the best source of information in a landslide situation? Who is the person in charge of landslide preparedness in my community?	<ul style="list-style-type: none">• Be prepared for a landslide• What to do during severe storms and heavy rainfall which can trigger landslides?• What to do if I suspect imminent landslide danger?• What to do during a landslide?• What to do after a landslide?

In Thailand, landslides usually occur in mountainous areas and are triggered by heavy rains. The northern region of the country is a mountainous region and generally susceptible to landslides and mud/debris flows. Chiang Dao District, located about 67 kilometres to the north of Chiang Mai Province, is prone to landslides. In fact, the district experienced a major landslide in 1978, when it was hit by a storm that caused heavy rainfall. The 1978 landslide was the worst in living memory for the people of Mae Na sub-district. The video tells their story and presents some lessons learned by the local people about landslide hazards and how to prepare for them as well as reduce their risk.

¹ The institute would like to express its sincere gratitude to many contributors to the production of the video. They include Promma Kengkla, Khamnan Tambon (Head of Sub-district) Mae Na, Chiang Dao District and the people of the Mae Na Sub-district; Somjai Yen Sa-bye, Department of Mineral Resources; Songwat Asawanon; Thanee Nunman; and Chitraporn Suthikunchon.

Activities

Scripting Process

The project was designed to produce an informational video to achieve the above-mentioned objectives for people living in landslide-prone areas in the northern region of Thailand. A video script was drafted aiming to tell the story of landslide hazards and preparedness in Chiang Dao District in particular. The structure included an introduction, facts and features, testimonials, call-to-action and conclusion. It was expected that in the closing stage, viewers would remember two key points: “always stay alert” and “be aware of exposure to landslide risks”.

The production team developed the script content, concept and terminology by conducting an online landslide research investigation. They also gained additional knowledge and technical information from a series of consultations with an expert (Somjai Yen Sa-bye) from the Public Participation and Networking Section, Environmental Geology Division, Department of Mineral Resources. The time spent developing the draft ready-to-shoot script was approximately one month (January 2006). The final script was reviewed and edited during the following two months by UNESCO Bangkok and the Asian Disaster Preparedness Center (ADPC).

Video Production

In February 2006, a series of discussions and consultation, hosted by Khamnan Promma Kengkla (Head of the Mae Na Sub-district of Chiang Dao District), were conducted with key leaders and experts in the local area to prepare and agree on the video production details. The people of Chiang Dao District contributed substantially to the production of video material which was edited down to 27 minutes. The video was launched by UNESCO Bangkok and the Thailand Environment Institute on 27 October 2006 with addresses delivered by Sheldon Shaeffer, the Director of UNESCO Bangkok; Jun Yamada, Economic Affairs Minister of the Embassy of Japan in Thailand; Vilas Rujiwattanathong, Vice Governor of Chiang Mai Province; Churairat Sanboonnum, Deputy Secretary General of the Thailand National Commission for UNESCO, and Sanit Aksornkoae, President of the Thailand Environment Institute.

Lessons Learned

Effective Background Preparation

The video production had two central goals: 1. to inform, 2. to persuade or motivate. For these reasons, it was important to identify precisely what was to be said and how it was to be communicated. An informative video requires extensive pre-production arrangements, planning and knowledge including online research or expert consultation. A carefully prepared script will result in a smooth running production with few, if any, wasted resources or effort.

Production Planning

The most important step of the video production was to clearly define the goals and purposes of the production. Other steps include identification of the target audience, reviewing other productions to avoid repetition, the scripting process, bringing on board the production team, selection of specific sites and locations for shooting, scheduling field surveys and interviews, and making arrangements for shooting. Notwithstanding changes occurring along the way that may cause the production team to miss a critical deadline, carefully planned steps guide the team in developing an effective video presentation.

Effective Communication

Emphasizing continuous contact and information sharing with the actors and potential audience, as well as providing and asking for feedback on the material, is of paramount importance because it adds structural and creative input to ensure the product meets its target audience's needs. Whereas a disaster education video is potentially a powerful tool for improving safety by showing people the proper way to undertake activities, establishing contact or communication with the target audience can effectively deliver a clear vision as to the purpose and use of the material. The use of local dialect and contacts builds relationships with the community and has proved invaluable in the success of the project.

Partnerships

It was observed that the local people in disaster affected areas were very enthusiastic to get involved in the production of the video. The production team also benefited greatly from seeking the right partners at both national and local levels to ensure effective production. Being a member of the target community was found to aid in forming relationships and understanding the community's needs.

Learning Opportunity for the Production Team

Having individual or freelance film directors/narrators/production personnel involved with the project can be very rewarding. During the production process, they gained unique experience in community engagement and natural disaster awareness work that would otherwise be closed to them. Participants can make a great contribution to the material and can understand how to facilitate the further distribution of both the knowledge and the video material.

Community Meetings

Community meetings, at which the video is planned to be shown in the future, were arranged in the north of Thailand to disseminate the video's message to community leaders and disaster practitioners. It was learned that the messages from the video can be incorporated into community activities to reduce villagers' vulnerability to landslides. Copies of the video will be made on VCD for distribution in affected areas.

The Way Forward

Community Feedback- Recommendations

After watching the finished product, Khamnan Promma Kengkla (Head of the Mae Na Sub-district, Chiang Dao District) compiled the following feedback and suggestions:

1. Community radio is still the most effective way to send both emergency warnings and disaster education information to rural residents as it is readily available in almost every household. A disadvantage is that it provides no visual cues. A videotape (or VCD, DVD) conveys visual information and is easy to access – transmission media is available both in individual households and in public places or social gatherings such as religious or wedding ceremonies. However, visual material can be used only at designated times or on specific occasions, thus they may be too slow in delivering emergency messages.
2. The material can be used in all northern provinces where some local dialect is spoken. Duplication and distribution of the video material to people living in landslide-prone areas is highly recommended. All local authorities and communities should have a copy. A launch of the video is recommended at both local and provincial levels.
3. Of note is that the local administrative organizations (LAOs, i.e., municipality, Provincial Administrative Organization, *Tambon* (sub-district) Administrative Organization) are interested in providing further support to similar projects. Budgets can be requested through the development and submission of proposals to LAOs as appropriate. The most crucial point is that they have a clear understanding of the material and what it is supposed to accomplish.



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Indonesia Country Report

Institute for Educational Studies and Development, Brawijaya University

Introduction

"...The devastating earthquake and tsunami which occurred on the 26th of December, 2004 in Aceh robbed the rights for Acehese children to have an appropriate education..."
(Hendrawan Soetanto)

"...One and a half years ago, we had a gigantic earthquake in Aceh, but we lost another 6,234 people when the earthquake happened on 27 May 2006 in Yogyakarta. Did we learn from such disasters?..." (Department of Social Affairs, Republic of Indonesia, 1 June 2006)

Indonesia is very susceptible to natural disasters such as earthquakes, tsunamis, volcanic eruptions, floods and hurricanes. About 13 per cent of the world's active volcanoes lie along the Indonesian archipelago with the potential to generate multiple hazards of different magnitudes and intensity.

The devastating earthquake and tsunami that occurred in the Indian Ocean in 2004 causing massive loss of life in North Sumatra and Nanggroe Aceh Darussalam (NAD) provinces, clearly highlighted that there is an urgent need to educate people to prepare sufficiently for natural disaster events. Unfortunately, no clear effort has been undertaken to include natural disaster preparedness as a core subject into the school curriculum in Indonesia. It is therefore not surprising that educational materials related to natural disaster preparedness are also scarce.

Following the earthquake and tsunami in NAD province, many regions in Indonesia were struck by floods, landslides and hurricanes. More recently, one of the most active volcanoes in the world, Mount Merapi in central Java, erupted several times. Nevertheless, thousands of people are still living within the danger zone despite the government announcing an evacuation. Thus, more effort in community education appropriately sensitized to local circumstances and beliefs in the context of natural disaster preparedness is still required.

Activities

The Products: Rationale

No one could possibly argue that education for natural disaster preparedness is not important. Natural disasters have a tremendous impact on everyone including children and teenagers. Indonesian secondary school students were identified as the target focus group for

the Indonesian project following a thorough discussion between the team and UNESCO's personnel. The team chose to address the most prevalent natural disasters that occur in Indonesia which cause significant numbers of fatalities and adverse economic impacts. Based on this consideration, the following six most devastating and common hazards were chosen to be targeted: earthquakes, tsunamis, floods, landslides, volcanic eruptions and hurricanes.

The team developed two products: a folding picture kit and the *Disaster Master* – a simulation game of natural disasters – as ways and media to deliver information about natural disaster preparedness. The decision to choose these two media was based on needs and the situational analysis in the context of ESD implementation. As the target groups are junior and high school-aged students and teachers, it was decided that the materials should stimulate discussion leading to improved cognitive understanding. In addition, the materials were designed to reflect the principles of qualitative and joyful learning.

Consultation played a valuable role in the development of the tools by providing ideas, feedback and validation of the products. The materials were presented to 16 educational experts at the Indonesian Ministry of National Education, Jakarta, and to 40 senior high school teachers in Malang as well as undergoing additional cyber-consultation.

The team's analysis revealed:

- a) ENDP materials have not been well introduced to school students in Indonesia.
- b) It is not easy to find ENDP materials in Indonesia.
- c) Due to the 2004 tsunami, Indonesian curriculum designers and educators now understand the importance of introducing ENDP material to school students.
- d) The interest of Indonesian teenagers in reading is generally low. Teenagers, from the ages of 12-17, would prefer to read comics rather than books.
- e) Junior and senior high school students in Indonesia prefer to learn in a cooperative and collaborative way.
- f) Junior and secondary school students prefer to get information from media that is colourful and full of pictures.
- g) The two products developed are amongst the most innovative in this field.

The participants of the ESD workshop held in February 2006 at the Indonesian National Commission for UNESCO endorsed the two types of materials. The participants were representatives of curriculum centres, different

directorates in the Ministry of National Education, delegations from the Ministry of Environment and representatives of the Indonesian National Commission for UNESCO.

Folding Pictures Kit

The Folding Pictures Kit is one of the media developed to give information to teenagers, especially junior high students aged 12-15, on what they have to do when certain natural disasters occur. It consists of two sets of materials: folding pictures and booklets both describing

four different natural disasters that commonly occur in Indonesia – earthquakes, floods, landslides and volcanic eruptions.

The Folding Pictures Kit provides 12 different pictures describing what should be done before, during and after a natural disaster. There are also four spaces containing additional information about natural disasters.

Teachers will also benefit from this Folding Pictures Kit as they can use it as a teaching aid in the classroom to promote collaborative learning. The teacher can divide the class into four groups with each group addressing a

Figure 1

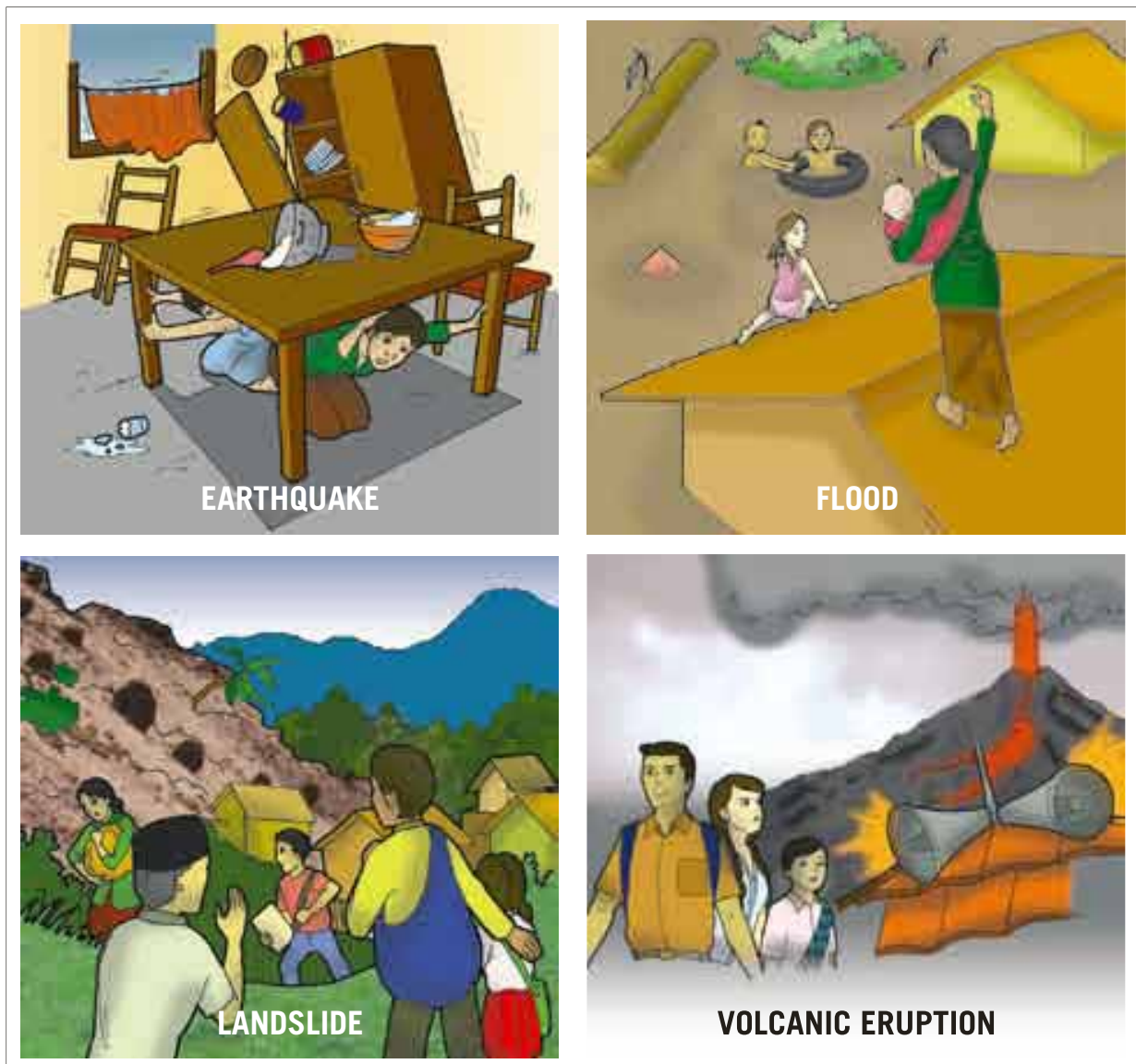


Figure 3: Earthquake

An earthquake is the sudden motion of earth because of the breaking and shifting of rock under the earth's surface.

Actually, earthquakes happen every day but most of them are very weak and cannot be felt by humans. Earthquakes are a natural phenomenon with almost 450 occurring in Indonesia every year.

The movement of the ground during an earthquake can be measured by a seismograph.

Before	During	After
<ol style="list-style-type: none">1. Know your work and house area.<ul style="list-style-type: none">• Where the emergency stairs are• Where the safest place to take cover is2. Practise routine preparedness in your office and house.<ul style="list-style-type: none">• Nail or tie furniture (fridge, cabinet, etc.) to the wall• Always turn off water, gas and electricity if you are not using them.3. Learn how to apply first aid and to put out fires.4. Note the emergency phone numbers to prepare for when an earthquake happens.	<p>Inside:</p> <ol style="list-style-type: none">1. Hide under a table or other strong structures.2. If there is no table, cover your head with a pillow, bag, or anything that offers protection from falling objects.3. Stay away from cabinets and windows.4. Use stairs, don't use elevators and escalators. <p>Outside:</p> <ol style="list-style-type: none">1. Stay away from buildings, walls, billboards, trees, etc.2. Find an open area and cover your head. <p>Driving your car</p> <ol style="list-style-type: none">1. Pull over, turn off the engine, and get out of the car.	<ol style="list-style-type: none">1. Inspect yourself for cuts, wounds or fractures and apply first aid.2. Check your surroundings for fire, electricity shortcuts, etc.3. Monitor the situation from radio or television.4. Help others. <p>If you need to evacuate, prioritize children, the elderly, pregnant women and people with disabilities. An open area is the safest place to evacuate to.</p>

different kind of natural disaster. Every group can then share information imparted from the folding pictures.

This kind of activity can promote the development of oral communication skills as well as cooperative learning. Cooperative learning is important as it enables students to learn from their peers, rather than a teacher-centred learning process. Moreover, cooperative learning provides an effective context for the development of new understanding. Students will feel that they have worked together for their mutual benefit as they can share information that they learn with other students.

Other activities involving this media are discussion, writing stories based on the pictures or even learning new English vocabulary. A sample of the playing cards is provided in Figures 1 and 2.

Disaster Master – Natural Disaster Preparedness Game

The *Disaster Master* is an educational board game that conveys messages through answer cards to help students understand what natural disasters are and what actions they can take to reduce the impact of disasters. The game covers six kinds of natural disasters: earthquakes, tsunamis, floods, landslides, volcanic eruptions and hurricanes.

Characteristics

Target audience: Indonesian senior secondary school students.

Educational methodologies: motivational, instructional, participatory and follow-up oriented.

Figure 3: Educational Material *Disaster Master* consisting of a game board, 36 playing cards, two question cubes and one reference booklet.



Design concepts: A student can improve his or her chance of surviving a natural disaster if they understand the concepts, are able to recognize warning signs, understand underlying factors, know what to do to reduce the impact before disaster strikes and also how to react during and after the disaster. These concepts are conveyed to students through qualitative learning.

Learning strategy: The game facilitates an understanding of natural disasters which enables students to take action when disasters occur. Understanding mitigation activities will reduce disaster risks, and being prepared will reduce loss of life and property when disasters strike. If this can be achieved, it will improve sustainability.

Devices: The *Disaster Master* comprises a game board with instructions printed on it; one outer web-shaped wheel, one inner web-shaped wheel, and one circle of *gunungan wayang* (mountain of the puppet) picture with the tip pointing upward. The *gunungan wayang* is

chosen as an alternative to an arrow as it symbolizes the macro-cosmos of the harmonized world represented by the intimate relationship between human beings and the ecosystems ensuring sustainable development. Other important playing materials are 36 answer cards and two cubes with natural disasters or key questions embedded on each side of the cubes. To stimulate discussion, the game is also equipped with a Reference Booklet.

Learning Evaluation: After playing the game, the players can be evaluated to ensure they have understood the disaster risk concepts taught by the game. The scores are rated as follows:

- <50 = Not yet prepared. You need to practise again.
- 50-75 = Average. You are advised to practise frequently.
- >75 = Congratulations! You are a Disaster Master!

Figure 4: Evaluation Survey of *Disaster Master* as an Educational Material for Natural Disaster Preparedness

Parameter	Interpretation
General Perception	75% of the respondents considered the <i>Disaster Master</i> to be reasonably attractive.
Substance	90% of the respondents considered the substance to be satisfactorily relevant.
Quality	The majority of respondents considered the quality of the material to be appropriate for senior high school students. Only a minor number of respondents considered the quality of the material less comprehensive because it only emphasized a cognitive domain.
Difficulty	The players' prior knowledge on natural disasters and their English proficiency seemed to determine how difficult they perceived the game to be. About 16% responded that the game is easy to understand provided the players have prior knowledge on the respective natural disaster. 41% felt the game to be easy to understand when the players are comfortable using English. It will be necessary to translate the game into vernacular languages if the material is to be introduced to non-English speaking regions.
Other applications	The majority of respondents indicated that the <i>Disaster Master</i> is likely to be implemented for learning objectives other than solely natural disaster preparedness education such as English teaching. The game material can be considered generic educational material.
Academic background	More than half of the respondents are from a non-science academic background.
Prior knowledge on natural disaster	12% of the respondents had prior knowledge of natural disasters having witnessed them directly while the majority of them acquired awareness from reading books and from stories told by others. Thus the respondents were considered to have sufficient prior knowledge on natural disasters and were competent to comment on the materials under evaluation.

Feedback survey

Evaluation of the *Disaster Master* as an educational material for natural disaster preparedness was conducted following the workshop in SMA 10, Malang City attended by 40 school teachers, 32 of whom provided substantive feedback from themselves and students. The result of the survey reveals that the *Disaster Master* can be considered sufficiently appropriate as a learning tool on natural disaster preparedness for Indonesian secondary students. The major obstacle for the implementation of the *Disaster Master* in non-English speaking countries is the use of English in the game. It is therefore necessary to translate the materials into local languages to obtain optimal outcomes. The details of the data survey are presented in Figure 4.

Lessons Learned

During the project development and production process, the team was exposed to diverse information on natural disaster preparedness and made contact with many people from different disciplines. Importantly, the team learned that collaboration and networking plays a significant role in developing quality materials as it provides space for constructive criticism and revision.

In the development of further products in this field, it is important that teams have: sufficient prior knowledge on natural disasters; sufficient access to information on natural disasters either from libraries, experts or the internet; ensure intensive communication between the team and other relevant institutions and organizations; and adopt an open-minded attitude to collaboration.

The team's research discovered that the integration of natural disaster preparedness material into school activities has been neglected in Indonesia. Most educators now realize the importance of introducing

such materials for students after the devastating tsunami in Aceh. For this reason, it is reasonable to say that more effort is needed to disseminate such materials to target groups all over the Indonesian archipelago.

There is growing demand in Indonesia, as indicated by public interest and debate highlighted by articles from national newspapers and live discussion on national television, that natural disaster preparedness and mitigation must be included in the school curriculum from elementary to tertiary education. For this reason, a training of trainers on natural disaster preparedness and mitigation for school teachers may be recommended as many instructors lack knowledge in this area.

Conclusion

Despite being prone to natural hazards, awareness on such disasters is remarkably low in Indonesia as indicated by the scarcity of educational materials on natural disaster preparedness and mitigation available to the community. At present, no special attention has been given to this topic in the school curriculum.

The production of educational materials for natural disaster preparedness and mitigation will therefore play an essential part in the implementation of the UN Decade of Education for Sustainable Development in Indonesia.

The beneficiaries are high school students, teachers, teenagers and internally displaced persons (IDPs) who stay in temporary tents or barracks at post-disaster sites. The target group will benefit from these products through improved knowledge of natural disasters and will hopefully stimulate preparedness and mitigation activities to reduce the risks of natural disasters. Translation into Indonesian language and programmatic dissemination will help to reach a wider target group in Indonesia.



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India Country Report

University of Madras

Introduction

The burden of natural disasters falls most heavily upon developing nations where over 95% of disaster related deaths occur (IFRC, 2001).

In India, 60% of the land is prone to earthquakes, 12% is susceptible to floods and 8% is vulnerable to cyclones. Twenty-two states are categorized as multi-hazardous and the 8,000 kilometre long coastline is exposed to tropical cyclones, storms and floods (CBSE, 2004). The vulnerability of the country is compounded by indiscriminate and short-sighted economic development, environmental degradation and the resultant changing topography. The immeasurable loss of human life and damage to property not only drains the resources of the state and damages the economy but also affects the social fabric of society.

In order to address the complexities of natural hazards, India needs to develop a vigilant, quick and disciplined response. It is the community that has to respond immediately to any disaster, and hence, a culture of preparedness needs to be inculcated in the minds of citizens. Thus, a community based disaster preparedness (CBDP) education programme is a priority.

As the geomorphology, topography, socio-economic conditions, ethnicity and cultural traditions vary from region to region and from one village to another within each region, it is important to develop as locally relevant a model as possible within a standardized set of guidelines.

Project: Community Based Disaster Preparedness Study

To better understand the current disaster vulnerabilities, risks and capacities and to increase the involvement of the people of the state of Tamil Nadu in CBDP, a study was undertaken to:

- develop a model to implement a community based disaster preparedness education programme for the coastal communities in Tamil Nadu.
- promote the culture of disaster preparedness at the community level.
- encourage community participation in preparation of the village level disaster management plan.

For the successful implementation of a CBDP education programme, cooperation of the *panchayat* (village community) leaders, community leaders and the facilitating groups are very important. In view of this, three categories of stakeholders have been involved for the project, i.e., village communities, village functionaries and the facilitators.

As the CBDP programme aims at wider personal and community participation in disaster preparedness, it was necessary for different representative social groups across community sectors to be involved in developing the project. People belonging to different castes and different classes were included. Care was taken to ensure the participation of the socially marginalized and underprivileged groups in the project, such as women and youth. Community leaders and *panchayat* leaders, whose cooperation was necessary for rapport building and to implement the programme, were involved in the project.

Village functionaries such as school teachers, *anganwadi* (primary health centre) workers and extension workers who are familiar with the social context and have wide social networks within the community were found to be helpful in understanding social dynamics. They can also act as conduits for disseminating messages to community. Hence, the village functionaries were involved in the consultation process.

The last but the most important category of stakeholders was NGOs and community-based organizations (CBOs) who are the main catalysts of the CBDP programme. The NGOs and CBOs generally have a good understanding of community needs. Local NGOs and CBOs such as youth forums, women's organizations and self-help groups were included in the study.

Consultation with the Community

Participatory Risk Assessment (PRA) exercises were undertaken with the village community. They were taught to make their own appraisals of the local disasters, impacts, local resources, safety route maps, etc. They were also encouraged to evolve their own risk reducing measures, taking into consideration their village structure.

Separate focus group discussions were organized in all of the selected villages for men, women, and adolescent boys and girls to understand their level of awareness of CBDP, their willingness to participate in the programme

and their suggestions for implementing the programme. In the beginning, general awareness amongst all the groups concerning CBDP was very low and they did not perceive it as a necessary programme. Gradually, with constant persuasion, the community became enthusiastic and made valuable suggestions towards evolving a structure for the CBDP programme and implementation strategy.

Personal interviews were conducted with *panchayat* leaders and community leaders who were willing to take the initiative and extend their cooperation to the study. Consultations were held with them on the need to evolve an institutional framework for the implementation of the CBDP programme and on the methodology for developing a disaster risk management plan in their communities. Their inputs were immensely useful in evolving the model and implementation strategy.

Consultations were held with NGOs and CBOs on the institutional framework and implementation strategy. The consultations were helpful in understanding the social dynamics of the communities and in developing a socially acceptable village disaster risk management training (VDRMT) model with an effective implementation strategy. After preparing the conceptual model, it was field-tested through workshops organized with the community and NGOs.

Selection of target group:

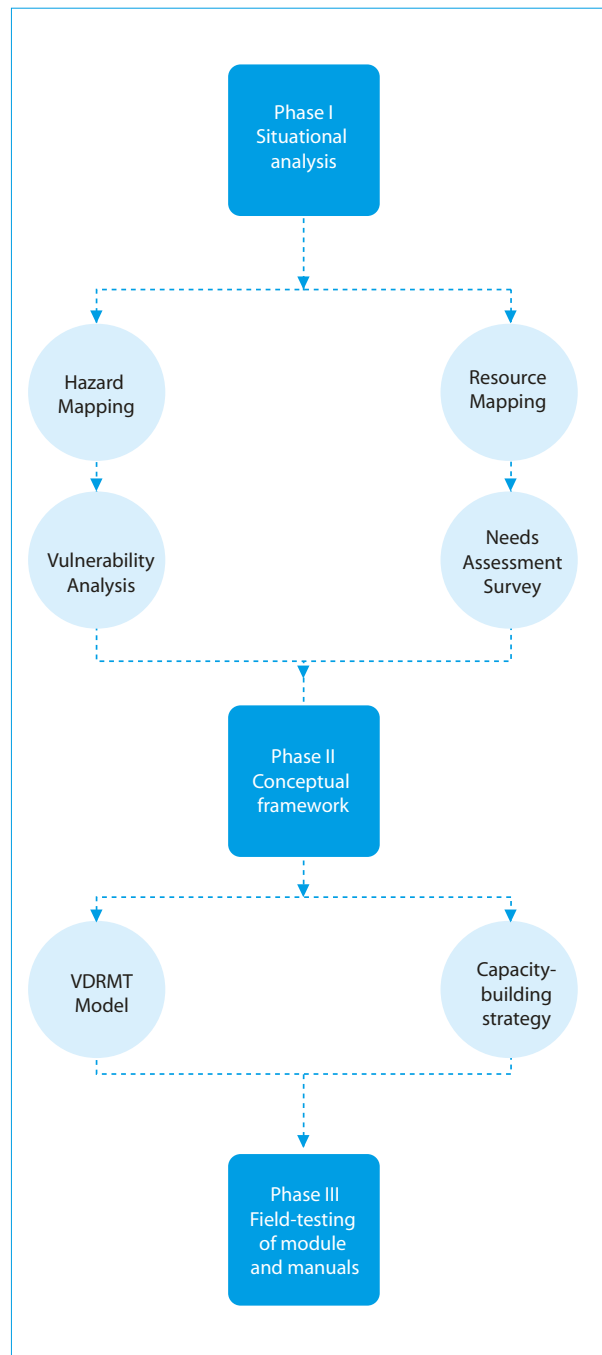
The Government of India has initiated a series of measures in developing policy and administrative reforms to implement disaster preparedness programmes. However, community based disaster preparedness has been underutilized thus far. Considering the regular occurrence of flood-related hazards in the coastal regions, educating the community on disaster preparedness becomes the only sustainable long-term strategy for disaster mitigation. Even NGOs and government agencies pay more attention to rehabilitation and reconstruction work than on disaster preparedness. In India, the culture of preparedness in the community is totally absent. Hence, community level groups were selected as the target audience of this project.

The study was planned in three phases as follows:

Phase I: The undertaking of a situational analysis

1. Hazard mapping was done to identify the hazard-prone areas in Tamil Nadu.
2. A vulnerability analysis was done to identify the target audience.

3. Resource mapping was done to identify the educational resource material for CBDP education.
4. A needs assessment survey was done to assess both the people's awareness of CBDP and the training needs of the community.



Phase II: Preparation of a conceptual model of Village Disaster Risk Management Training (VDRMT) and capacity-building strategy for a CBDP education programme

1. A conceptual model of VDRMT was developed.
2. A set of training modules/manuals was prepared for the various functional groups of VDRMT.

Phase III: Organization of a workshop to test the models, modules and manuals

1. The feasibility of the modules was tested through workshops.
2. Modules and manuals were tested for local relevance in the workshops.
3. Guidelines were prepared for the implementation of the CBDP education programme.

Outcomes of the Project

Based on the feedback received from the workshops organized for field-testing of the conceptual model, the following have been developed:

- processual model of the CBDP education programme.
- VDRMT model.
- capacity-building strategy.
- guidelines.

Processual model: The steps involved in developing a CBDP programme are partnership development, identification of stakeholders, formation of a core committee and formation of VDRMT.

Partnership development: The success of the CBDP education programme depends upon the cooperation of the *panchayat* leaders and community leaders. Entry into the village community is possible only with the consent of these leaders. The *panchayat* has an important role in preparing village level disaster risk management plans and has the authority to mobilize village level functionaries. Community leaders in the village can be of immense value in mobilizing village communities and CBOs. Hence, any NGO aiming to initiate VDRM programmes should develop a partnership with *panchayat* leaders and community leaders of the village.

Identification of stakeholders: Implementation of CBDP education requires the participation of different categories of people, functionaries and social organizations. As disaster preparedness is aimed at the wider community, people representing all socio-

economic groups and vulnerable sections should be included in the VDRMT. The village level functionaries who have a familiarity with the community dynamics, wider social contact and easy access to social groups should be included. CBOs with their built-in credibility, understanding of community needs, awareness and familiarity with vulnerable populations and power of persuasion can play a significant role in developing disaster resistant communities.

Formation of Core Committee: In getting the VDRMT organized and CBDP process started, a core committee is to be constituted. The core committee shall consist of two highly responsible and committed persons from the village community, village functionaries or CBOs. The *panchayat* leader may even be the chairperson of the committee.

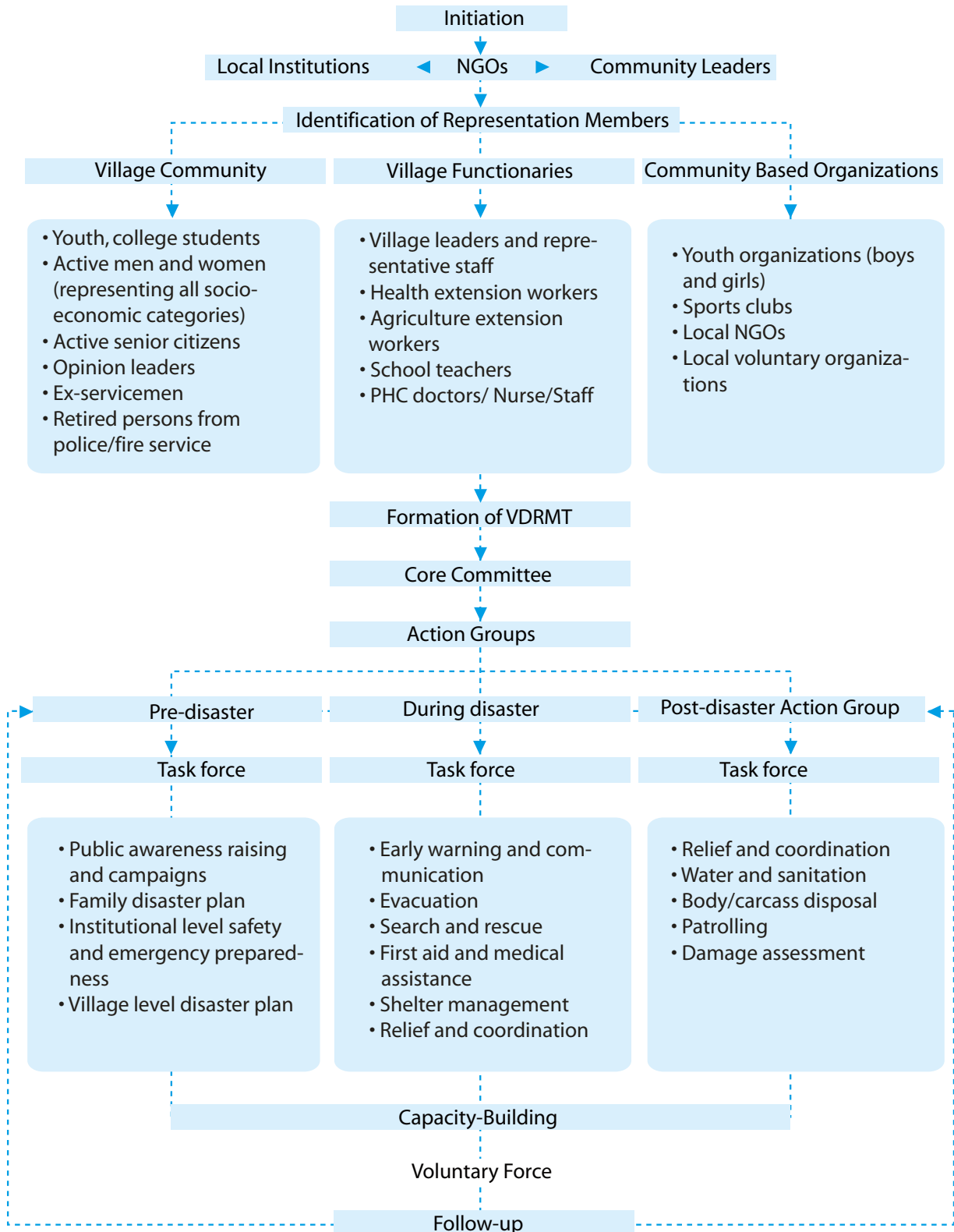
Formation of VDRMT: This committee is responsible for the constitution of action groups and task forces. The VDRMT shall have a four-tier structure consisting of a core committee, action groups, task forces and volunteers. The core committee is responsible for the formation of VDRMT. It shall constitute three action groups that will handle preparedness for the pre-disaster, during disaster and post-disaster phases. These three action groups are responsible for the formation of specialized task forces to handle the activities under the three phases of a disaster. Each task force in turn shall develop volunteer forces to implement the CBDP programme and handle the emergency situation.

Village Disaster Risk Management Training (VDRMT) Model

It was observed that the community, *panchayat raj* (village self-governance) institutions and NGOs had a very low degree of awareness of disaster preparedness. Initiatives that have already been taken are fragmented and sporadic. If a CBDP education programme is to be sustainable, it needs to be linked with local governance and development planning. This can be made possible only by institutionalizing the programme in the existing structure. Hence, the conceptual model of village level disaster risk management teams encompassing the partnership between village communities, *panchayat raj* institutions and NGOs was evolved along with an implementation strategy.

This conceptual model was developed using a participatory approach. The inputs for the model were received from the *panchayat* leaders and NGOs/CBOs through PRA exercises, focus group discussions, in-depth interviews and consultative processes. The conceptual model thus developed was field tested through

VDRMT MODEL



workshops organized with village communities, NGOs and village leaders. Based on feedback received from the workshops, the VDRM model and implementation strategy were fine-tuned.

The current report explains the process, structure and implementation strategy of the CBDP education programme. The process explains how the VDRMT could be organized. The structure of the VDRMT explains the functionaries involved, their roles, role-relationships and their responsibilities. The VDRMT model can be easily adopted by any agency willing to launch CBDP education programmes in Tamil Nadu and adopted in other states throughout India.

Capacity-Building

The roles and responsibilities of the functionaries in the VDRMT are well defined. In order to implement the CBDP education programme and to enable the functionaries to perform their roles effectively, capacity-building of VDRMT is essential. Each functionary needs to be trained with appropriate skills to perform the roles assigned. Also, all teams need to operate in perfect coordination with all the functionaries. Taking this as a framework, a core set of modules and manuals were developed and field-tested in the workshop organized with the community and NGO representatives for local relevance and cultural appropriateness. Based on the feedback given by the participants, the modules and manuals were fine-tuned. The manuals developed for each task force explain in detail the activities to be carried out in promoting community based disaster preparedness. With little modification to suit the local conditions, these modules and manuals can be used in training the VDRMT. The training should be organized for the entire VDRMT at a time so that everyone is familiar with each other's functions and roles. The trained teams will be equipped and qualified for the dissemination of preparedness messages, training the volunteer forces, educating the community and to carry out mitigation activities.

Guidelines

Based on the experiences gained in the process of developing the project, guidelines were prepared for facilitators' reference. For every step involved in organizing the VDRMT and implementing the CBDP education programme, guidelines were developed. The process and documentation prepared while developing the project were used as the main resources in developing the guidelines.

Lessons Learned Developing VDRMT

During this project the team identified skills and tools in:

- developing a model to implement a CBDP education programme.
- identifying appropriate functionaries for VDRMT.
- strategies for developing partnerships between the community, *panchayat raj* institutions and NGOs.
- a methodology to disseminate a CBDP education programme.
- a strategy to implement a CBDP education programme.

Challenges

Indian villages are characterized by hierarchic caste structures, social dominance, divergent power structures and multiple leadership structures. The biggest challenge remains in bringing people of different socio-economic backgrounds together, and managing social dynamics and multiple leaders. Mainstreaming underprivileged sections and vulnerable categories into the project requires special effort. Social factions in villages were found to be barriers in bringing people and leaders together as one. Most of the villages do not have well founded CBOs, without which organizing VDRMT was found to be difficult. The absence of a preparedness culture and lack of self-reliance among people was also another challenge to overcome in promoting the CBDP programme. However, local NGOs enjoy high credibility and active youth organizations of villages can play a catalytic role in bringing them all together.

The Way Forward

To further develop the programmes outlined in this report, the following steps need to be undertaken:

- policy advocacy should be used to integrate CBDP education programme into *panchayat raj* institutions.
- *panchayat* leaders should be trained to incorporate disaster preparedness in village level development planning.
- more visual aids can be developed in local languages with live demonstrations and instructional videos in Hindi, Tamil, Telugu and Malayalam.
- dissemination workshops should be organized for NGOs, facilitators and government agencies.

- a series of training programmes for trainers can be organized to improve the skills of stakeholder groups such as NGOs.

This project needs to be extended to facilitate the institutionalization of the CBDP within the *panchayat raj* institution. Keeping this in view, it is proposed that the first steps be:

- to produce videos with live demonstrations for all the manuals in major languages.
- to organize seminars and workshops for *panchayat* leaders and NGOs.
- to demonstrate the VDRM model and implement a CBDP education programme in selected villages as a pilot project.

To achieve this aim, the following support will be required:

- institutional partnership with government agencies and international organizations.
- academic and administrative guidance.
- financial support.

Sustainability

In the case of Tamil Nadu, a CBDP education programme can be made sustainable by mainstreaming this project with local governance and development programmes in the coastal regions. VDRMT should be developed in all the coastal villages through *panchayat raj* in partnership with NGOs. All VDRMT should be networked into a broader federation to develop broad-based skill and information sharing. A village level disaster risk management plan should be made an integral part of development programmes and schemes in the villages. All the development work by NGOs should have CBDP education as an essential component. NGOs should be trained in CBDP education continuously.

Conclusions

Recognizing the need for CBDP education at the grass-roots level, an institutional framework has been developed. This framework needs to be implemented for its sustainability through policy development. The model developed in this project can be used to inculcate disaster preparedness culture within Tamil Nadu through a constant effort.



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Bangladesh Red Crescent Society

Introduction

Natural disasters are a common phenomenon in Bangladesh but occur most often along the country's 710 kilometre long coastal region. After the devastating cyclone of 1970 in which half a million people perished, the League of Red Cross, now the International Federation, was requested by the UN General Assembly to undertake a leading role in pre-disaster planning for the country. The Cyclone Preparedness Programme (CPP) of the Bangladesh Red Crescent Society (BDRCS) was initiated in 1972. In June 1973, the Government of Bangladesh approved the new CPP programme, undertook financial responsibility for some of the recurring expenses and set up a joint programme management mechanism by creating a programme Policy Committee and a programme Implementation Board.

Cyclones cause more devastation and death in Bangladesh than any other disaster, so it is a top priority hazard to address. The cyclones of 1965, 1970, 1985, and 1991 that hit the coast affected people in 32 regions, defining a target group for immediate preparedness training. The CPP programme was initiated to undertake preparedness activities to benefit the 11 million people residing in the coastal region.

Activities

Organizational Structure

The CPP is a mechanism that relies on technical skills and volunteers' commitment for ensuring that all potential victims of an approaching cyclone are given sufficient warning, enabling 11 million coastal people to move to safe sites including cyclone shelters and buildings. The system starts with the collection of meteorological data from the Bangladesh Meteorological Department (BMD), which issues bulletins including the designated warning signals for an approaching cyclone. The bulletins are transmitted to the six zonal offices and the 31 *upazila* (sub-district) level offices over high frequency (HF) radio. The *upazila* office in turn, passes the information to village level unions and lower levels through very high frequency (VHF) radios. The union team leaders then contact the unit team leaders immediately. The unit team leaders and their volunteers spread out to the villages and disseminate cyclone warning signals door-to-door using megaphones, hand sirens and public address systems. The programme has 34,140 trained and devoted volunteers, including 5,690 females, who often risk their lives in fulfilling their duties. During the 1990s, 23 CPP

volunteers died while they were on duty keeping their communities informed of the cyclone and in particular when delivering the evacuation order.

Educating coastal communities about cyclones and preparations was adopted as the preparedness strategy to manage the risk of cyclones. Demonstration was adopted as a delivery technique, including arranging an artificial cyclone, extrapolating consequences and playing out actions to take. These demonstrations were arranged by the CPP in the vulnerable coastal regions of Bangladesh who need to address awareness, preparedness and mitigation issues.

This process and strategy was developed in a calculated and consultative way with the Government, CPP volunteers, local community leaders, stakeholders and partners. The programme is a unique example of a voluntary based organization with volunteers as the backbone of the CPP. Volunteers are helping to minimize the loss of lives and properties in coastal communities. It is the Red Crescent Society's belief that the procedures and methods of the CPP can be followed by others who want to serve humanity.

Telecommunication System

The CPP operates an extensive network of radio communication facilities in coastal areas linked to the communication centre at the head office in Dhaka. This network is used exclusively for disaster management. The network consists of a combination of HF/VHF radios that cover most of the high-risk cyclone-prone areas. The CPP is now operating a total of 151 HF/VHF radio stations.

Volunteer Organizations and their Role

The CPP is organized in 31 *upazilas* (sub-district) and 274 unions (village level) divided into 2,845 units. Each unit serves one or two villages with an approximate population of 2,000-3,000. The ten male and two female volunteers from each unit have the popular support of the villagers.

In each unit the ten male volunteers are divided into five groups, two in each, to discharge the following responsibilities:

- a) warning
- b) shelter
- c) rescue
- d) first aid
- e) food and clothing

The two female volunteers provide first post-cyclone aid to distressed women in addition to their task of raising awareness among the women folk during normal times.

The CPP volunteers are highly motivated by and dedicated to the seven principles of the Red Cross and Red Crescent movement - humanity, impartiality, neutrality, independence, voluntary service, unity and universality. On the basis of these principles, volunteers are rendering their services and inspiring others to join the CPP. After becoming a volunteer, they are very well respected in the community as they are performing a noble job.

Inclusion of more Female Volunteers in each Unit

Considering the gender issues involved with disasters and the level of spontaneous female volunteerism in the programme, it has been decided to recruit three more female volunteers into each unit, strengthening the units' numbers to 15 (i.e. ten male and five female).

Training of Volunteers

To maintain a high level of efficiency, the volunteers are given training by the Red Cross and Red Crescent movement on cyclones and their behaviour, warning signals and their dissemination, managing evacuations, temporary shelter, search and rescue, first aid and managing relief operations. The CPP officers give the first-aid volunteers first-aid training. The implementation of training for the 34,140 volunteers is always a big challenge due mainly to an inadequate number of trainers, time and funding constraints. In lieu of traditional training methods, a new strategy of volunteer training has been introduced using the philosophy that "volunteers need to be trained by the trained volunteers". Training of trainers (TOT) courses were arranged for some volunteers to create potential trainers in the community. A total of 157 volunteers have successfully completed the TOT course and become community trainers. Further, the community trainers can contribute to conducting basic and refresher training courses for volunteers if necessary funding can be found.

Public Awareness

Public awareness is an integral part of the CCP's cyclone preparedness activities. To successfully implement its awareness programme, the CCP undertakes the following public awareness activities in various ways in the cyclone-prone coastal areas:

- a) public awareness through volunteers
- b) cyclone drills and demonstration
- c) publicity campaign
- d) radio and television
- e) posters, leaflets and booklets
- f) staging of plays

Public awareness activities are generally conducted at the grass-roots level on a continuous basis through cyclone drills and demonstrations, publicity campaigns and rallies, folk songs, the staging of plays and publications. Selected messages are delivered over the radio and television, especially before the cyclone season every year. Special awareness campaigns are also organized for the fishing community. The volunteers are given special responsibilities to undertake target-orientated commemorative events on different days of the year. The public awareness campaigns of the CPP are recognized as effective and powerful tools for mitigating the effects of cyclones. Most of the population in the cyclone-prone areas has already been involved in some educational activity.

It is considered a top priority to make a new video that would be shown in the coastal villages and broadcast through electronic and other media. Video is an effective mechanism to deliver practical information about cyclone preparedness to the people of the coastal community. The community people would learn about preparedness techniques and early warning dissemination systems that will help save lives and property.

Social Welfare and Other Activities

In addition to their core responsibilities, the volunteers are very much involved in performing social welfare activities by integrating themselves with the local government administration, NGOs, *upazila* disaster management committees, educational institutions, religious institutions, social clubs and other agencies in the event of road accidents, fires, boat accidents, river erosion, epidemics and so on. On those occasions, the volunteers stand beside the affected people with sincerity and offer wholehearted cooperation.

Regional Award

The effective role and dedication of the volunteers in cyclonic disasters has been acclaimed nationally and regionally. This programme received the Smith Tumsaroch Award in 1998 from Thailand for an outstanding effort in reducing the impact of tropical cyclones that has saved many thousands of lives in Bangladesh.

Conclusion

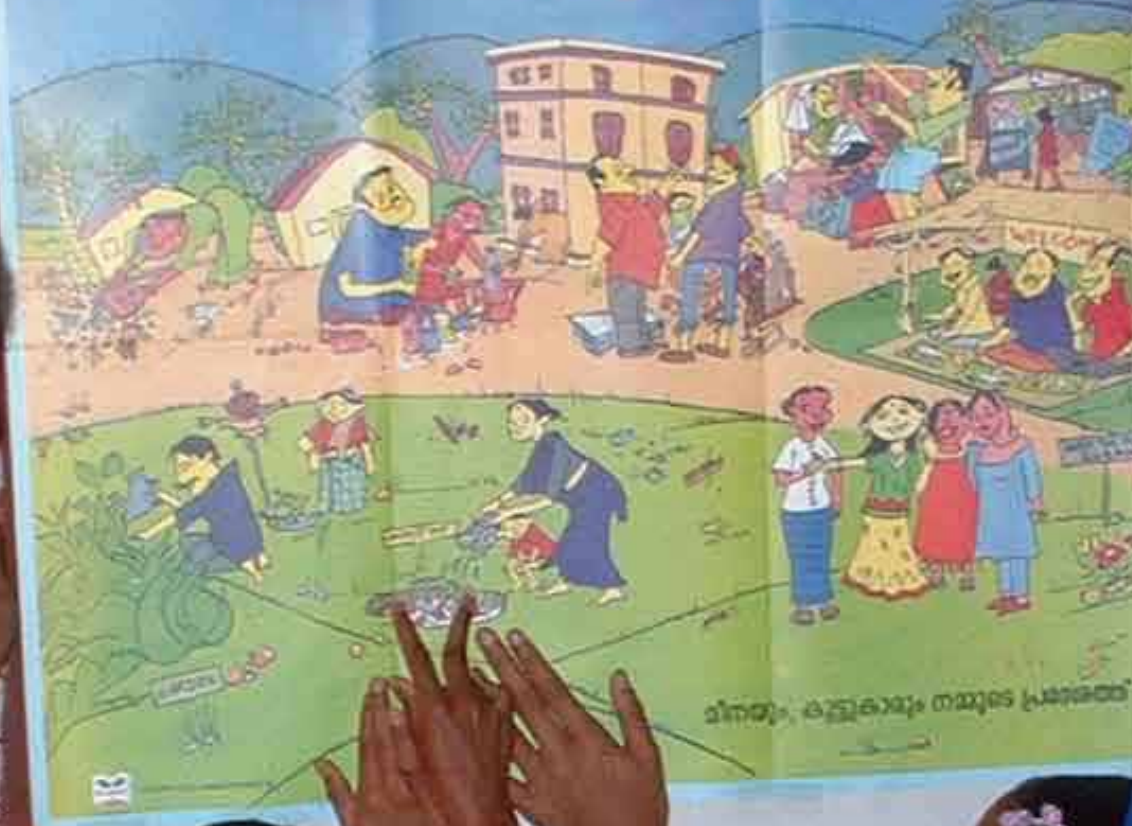
The CPP is an effective, grass roots oriented, disciplined and tightly knit organization that is dedicated to the task of protecting the population along with undertaking community capacity building activities. Its 34,140 volunteers are respected and are increasingly integrated with, and influential in, their community and local government agencies. They exhibit a high level of commitment to their programme and a readiness to meet the community requirements for better disaster preparedness. Since the inception of the cyclone preparedness programme in 1972, a total of 173 depressions have formed in the Bay of Bengal out of which 18 intensified into severe cyclonic storms. The programme faced each occasion with determination and courage and gradually achieved greater success in moving people to shelters and saving the lives and property of coastal populations.

The 710 kilometre long coastline of Bangladesh, with numerous offshore islands, is inhabited by 11 million people who are direct beneficiaries of the programme and who depend on the CPP. These extraordinary volunteer teams need to be supported for the wellbeing of the coastal people of Bangladesh.





മാലിന്യനിർമ്മാർജ്ജനം നമുക്കും നടപ്പിലാക്കാം



വിനയം, കരുതലും നമ്മുടെ പ്രമാണം

**Asia/Pacific Cultural
Centre for UNESCO
(ACCU)**

Background

ACCU is a non-profit organization that works in line with the principles of UNESCO for the promotion of mutual understanding and cultural cooperation among UNESCO Member States in the Asia-Pacific region.

ACCU was established in 1971 in Tokyo, Japan, through the joint efforts of both the Japanese public and private sectors. ACCU has since been implementing various Asia-Pacific regional cooperative programmes in the field of culture, education and personnel exchange in close collaboration with UNESCO and its Member States. In retrospect, almost all the activities of ACCU since its foundation have been geared towards the realization of a sustainable future through contribution to such areas as the mutual understanding of different cultures, meeting the needs for materials development and capacity building for education, especially for the marginalized. In the field of educational cooperation, special focus has been placed on literacy, non-formal education (NFE) and environmental education, contributing to Education for All (EFA).

As one of the activities of its Education Division, ACCU has been producing a multi-media teaching-learning materials series called "PLANET". PLANET stands for **Package Learning materials oN Environment**. It was designed and launched in 1997 by ACCU in collaboration with specialists in NFE, environment and animation in the Asia-Pacific region, and UNESCO.

Overview of the PLANET Scheme

The purpose of the PLANET series is to develop environmental education materials for learners in non-formal and formal education to generate motivation for improving current environmental conditions. It aims at raising environmental awareness and generating a sense of togetherness between nature and humankind throughout the world, thereby contributing to the promotion of Education for Sustainable Development (ESD). Its main characters are Mina and her family, who live in a fictional village in Southeast Asia. The characters encounter various environmental problems in their village and work together to solve them.

Three titles of PLANET packages have already been produced on the following environmental issues:

- Water Pollution (PLANET 1)
- Forest Conservation (PLANET 2)
- Waste Management (PLANET 3)

The overall PLANET scheme has three stages: 1) production of an English prototype version; 2) production of local versions, or "adaptation" (Phase I); and 3) dissemination and utilization of local versions (Phase II).

To begin with, ACCU in cooperation with experts in Asia and the Pacific produces prototype English language versions of each component as shown in Figure 1 below after a series of production meetings and workshops.

Figure 1: Previous Series of PLANET



These regional prototype materials, full of local resources, knowledge and experience brought together by experts in the region, serve as references for local material developers to produce their own teaching-learning materials through the process shown in Figure 2 below.

However, being “regional” prototypes, the English versions do not always depict country-specific contexts well. Therefore, the prototype materials are to be modified to suit respective local contexts. Adaptation of prototypes into local versions does not mean the mere translation of the languages. Materials’ format, presentation, illustration and contents are also modified to meet the needs of the local people, culture and environment. The Adaptation process is referred to as Phase I of the Production and Utilization Scheme of PLANET.

Production of local versions is conducted by ACCU’s in-country partner organizations in Asia and the Pacific. Each partner organization is encouraged to collect baseline data to identify needs and to organize workshops with experts in the relevant fields so that the materials can reflect the actual situation and address the needs of learners.

In this way, local versions of the PLANET series are produced which are then delivered to and enjoyed by target learners under Phase II of the Scheme. Delivery and utilization strategies differ from country to country.

The uniqueness of PLANET lies in that not only the adapted local versions but also prototype versions themselves can be utilized to explain common environmental issues worldwide, for example, during global education sessions. In some cases, teachers at secondary or tertiary levels of education use the prototype English versions during their environmental education lessons. The prototypes themselves have attracted the attention of many like-minded organizations even beyond the region. For example, a university in Panama adapted PLANET 1 with its own funds to use the package in a workshop on community involvement in a river basin. At the same time, ACCU helps produce locally-relevant adapted versions of PLANET materials by supporting partner organizations both technically and financially.

Figure 2: Overview of the PLANET Scheme



Planet 4 – Natural Disasters

As the fourth title of the series, ACCU is now developing packaged materials on Natural Disaster Preparedness (PLANET 4). Table 1 below shows the ground design of PLANET 4. The focus is on helping learners learn what can be done at the individual and community levels to be well prepared for disasters they may encounter in the future.

**Table 1: Ground Design of PLANET 4
Natural Disaster Preparedness**

Theme	(Natural/Community) Disaster Preparedness
Target learners	<ul style="list-style-type: none"> • Adult learners in non-formal education programmes • School-attending and out-of-school children • Individuals involved in disaster preparedness education, etc.
Language level	Middle & self-learning Level
Objectives	<ul style="list-style-type: none"> • To increase people's understandings of why disasters happen and the nature of disasters • To raise awareness about the importance of the community's role in disaster preparedness and management • To encourage people to protect themselves in case of disasters • To build capacity of people in planning and preparing to minimize the impact of disasters • To encourage communities to become more self-reliant
Format	Poster, booklet, animated cartoon video, facilitators' guide, fact sheets, (stickers), introduction sheet for PL4 including adaptation guidelines
Content	<ul style="list-style-type: none"> • Definition of various types of disasters • Causes and effects of disasters • Possible actions <ul style="list-style-type: none"> - Preparedness - Reduction - Response - Recovery - Reconstruction
Others	<ul style="list-style-type: none"> • Moving from awareness to action and empowerment • Role of youths • Moving from individual action to collective action

Target Audience of PLANET 4 and the Utility of PLANET 4

The main target groups of the PLANET series have been: 1) neo-literates; 2) school children; and 3) learners in environmental education programmes in Asia and the Pacific. In addition to these groups, ACCU also envisages any learners in natural disaster preparedness education programmes utilizing the package. Each component of the package is designed to be attractive, informative, useful and comprehensive to the target audience, taking the neo-literate population into consideration in particular. Based on this principle, partner organizations of ACCU identify target groups based upon the needs assessment they conduct.

Experiences gained from the previous PLANET activities indicate that the utility of the PLANET series is beyond the scope of non-formal education, though the main target beneficiaries of PLANET 4 are the neo-literate populations in the Asia-Pacific region. Some countries used the packaged materials in primary and secondary schools, saying that the animated stories, booklets and posters were easy for the school children to understand. Other countries introduced the materials to community leaders, advocating the importance of environmental issues dealt with in the PLANET series. Leaders have shown a willingness to disseminate the information they obtained from the package to all the community members. In some countries, the animated cartoon videos of the previous titles have been broadcast via state channels conveying the messages of each title to a wider proportion of the population than expected, irrespective of age or educational background.

Mina and the unique characters in the cartoon series are thus already familiar to some people, having been around for almost a decade. PLANET 4 on natural disaster preparedness will introduce another Mina story. As a result PLANET 4 is more likely to be accepted widely as part of formal education, community development programmes, environmental education programmes, disaster risk education programmes and so forth, in the same way as the previous titles.

Moreover, the commencement of the United Nations Decade of Education for Sustainable Development (UNDESD), which places high importance on natural disaster preparedness, will provide additional momentum to the utility of PLANET 4. It is hoped that production of PLANET 4 and related activities will be a good reference to ESD-concerned organizations and researchers.

Components of the PLANET 4 package

PLANET 4's major components are:

- An animation video/VCD;
- A set of three posters;
- A booklet; and
- A facilitators' guide.

These components, except the facilitators' guide, have been the basic materials of the PLANET package since its inception. The guide was added to the package from PLANET 3 to help facilitators conduct activities effectively. Additional components may be included in PLANET 4, such as fact sheets on major disasters, toolkits on disaster response, etc., which were suggested at the production meeting on PLANET 4.

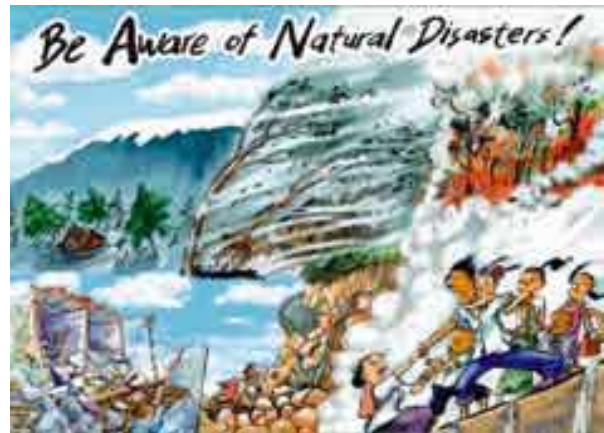
Such components were chosen to complement one another using a variety of formats as "packaged" educational materials. An animated cartoon video/VCD serves as an "eye-catcher", with a view to motivating learners, for instance, at the beginning of the session. Alternatively, the booklet may be used for instructional and self-learning purposes as it contains basic and important information on disaster preparedness and response. In groups, a set of three posters can be used to facilitate discussions among learners for the purpose of participatory learning.

Furthermore, the facilitators' guide is designed to help plan and organize a programme using PLANET materials by providing instructions, information and ideas to facilitate practical activities and/or projects with learners. In addition, some issues on disaster management from broader perspectives are to be dealt with in the guide to provide facilitators with broader knowledge in order to supplement the limited information provided in the booklet due to the relatively simple language used for the target learners.

Among those components, a set of three posters has already been produced, details of which are as follows.

Poster A: Be Aware of Natural Disasters!

- This poster focuses on five types of natural disasters: typhoons, tsunamis, earthquakes, forest fires and landslides.
- The aim is to raise public awareness of natural disasters so that learners and/or the public know the dangers and what kind of natural disasters they might experience.



▲ Poster A: Be Aware of Natural Disasters!



▲ Poster B: Natural Disaster, When it Occurs, What to do?



▲ Poster C: Let's Protect Our Village against Natural Disasters!

© ACCU

Poster B: Natural Disaster, When it Occurs, What to do?

- This poster indicates how people should act in case of natural disasters, especially earthquakes.
- Although this page seems to focus on earthquakes, the message can be applied to any other natural disaster: protecting yourself and your family first when disaster hits, evacuating from dangerous places to shelters, helping each other at the aid station, temporary schooling and recovery from natural disasters.
- It aims at letting learners become knowledgeable about how to act when a natural disaster occurs.

Poster C: Let's Protect Our Village against Natural Disasters!

- This poster shows four types of disaster management activities for community empowerment, including identification of natural disaster-prone areas, reinforcement of buildings, necessary storage for emergencies and disaster drills.
- It aims at building communities' and families' capacities to be disaster-prepared and to protect people's lives from the huge damage caused by natural disasters.

The rest of the components are under development as of January 2007. The final draft of the scenario upon which the cartoon animation will be based has been developed and using this scenario, the production of the animated cartoon film will begin shortly. To ensure consistency of content among the various components, the draft illustrations and written explanations which have been prepared for the booklet will be finalized in conjunction with the development and completion of the animation scenario.

Priority Hazards

The main types of disasters dealt with in PLANET 4 are:

- typhoons
- tsunamis
- earthquakes
- forest fires
- landslides

Disaster experts in the region have identified these five disasters as the most common in the Asia-Pacific region during the planning and editorial meetings organized by ACCU in 2005. It was decided to avoid focusing on a specific disaster in PLANET 4 in order to produce quality prototype materials that can be used widely in the region.

However, ACCU's partner organizations, who will modify the materials in the next stage, are encouraged to add and/or omit disasters depending on their context.

Production of PLANET 4 Materials: Interactive and Consultative

The production of PLANET 4 materials as well as the previous titles has been a truly interactive and consultative process. First of all, to meet the urgent needs of people, ACCU has produced a set of three posters. Their rough sketches were based upon a series of discussions among experts on disaster and non-formal education in the Asia-Pacific region. Then, the draft posters were again widely circulated for comment among experts in relevant fields living in the region. These posters were developed and produced by these means, going through several revisions by a well-known artist, Mr. Lat, from Malaysia.



▲ Production Meeting on PLANET 4

After the production of the posters, ACCU organized a production meeting on PLANET 4 Natural Disaster Preparedness. The contents, sequence and design of each component as well as the ground design of the package were thoroughly discussed during the meeting with the participation of experts in community disaster management, disaster preparedness education, disaster nursing, community mobilization, materials development, non-formal education and animation from India, Indonesia, Sri Lanka and Japan.

The involvement of learners is made possible using a two tiered approach. First, most of the contributors to the PLANET production have worked with the materials' target learners, both adults and children. Their first hand experience contributed to the production of regional prototype materials through workshops, meetings and

online consultation. Secondly, partner organizations of ACCU are expected to involve learners during the adaptation process to be explained later on. In many cases, they organize adaptation workshops and conduct field tests with a view to reflecting learners' voices in the production of local versions. In this way, ACCU tries to involve target learners as well as experts during the production process.

Lessons Learned

Attaining Universality and Cultural Context

One of the biggest challenges during the production process of PLANET 4 was attaining universality for the prototype materials in the Asia-Pacific region as there is a great variety in the disaster experiences of countries in the region. For example, some countries are frequently hit by cyclones whereas landslides are the most common disaster in other countries. On the other hand, being "regional" prototypes, the package should not focus on a specific disaster. As a consequence, the five major disasters mentioned earlier were identified and prioritized.

Similarly, another challenge lies in the varied response activities required to meet different disasters and in different cultural contexts. Different responses are required for different disasters and the cultures that underlie societies and people's lifestyles influence these responses. For example, buildings can be made of stone, wood or mud-bricks, etc. in different cultures or different places which directly affects what has to be done in time of disaster. While the materials should not mislead learners, again, PLANET 4 materials cannot cover all the details. In response to these challenges, ACCU is considering producing a set of separate fact sheets so that people can obtain additional information on the disasters of particular relevance to their region. The adaptation process is designed to overcome differences in cultures and lifestyles as each partner organization reviews and modifies the prototype to suit the local context.

Logistics and Distribution

In terms of challenges in logistical support, a great investment of time is required to compile comments and suggestions from experts spread widely through Asia and the Pacific, although this is vitally important to produce high quality regional prototypes. Only a limited number of production workshops/meetings could

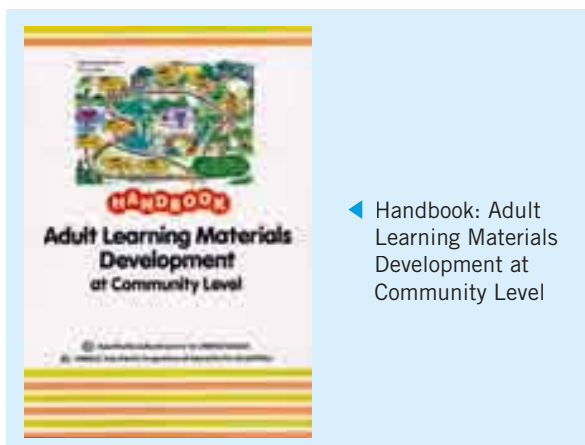
be organized due to the physical distance and costs involved.

The materials development phase on disaster preparedness is just the beginning of disaster preparedness education. Lessons learned by ACCU during the production process so far reflect more on the materials' distribution and utilization. It was pointed out during the production meeting that distribution strategies, based on needs and impact assessment, should be plotted before delivering the materials due to their limited number. Similarly, as ACCU has produced three PLANET titles before PLANET 4, it could have helped its production if ACCU had obtained more feedback from the target audience on what information and impression they obtained from the previous materials.

Sharing Knowledge

The PLANET package itself has been designed to build the capacity of materials developers in Asia and the Pacific. First of all, ACCU involves materials developers and experts in the process of the prototype materials production through workshops and meetings. This consultative and interactive process, from needs identification to decision-making on the contents, sequence and design of the materials, is itself a learning process for the participants regarding how to develop teaching-learning materials.

Secondly, the prototype materials will be a good reference for material developers when they produce their own, especially if they are less experienced and knowledgeable in the production of learner-friendly materials. The prototype materials, together with the *"Handbook for Adult Learning Materials Development at Community Level"* published by ACCU and UNESCO in 2001, provide food for thought to material developers throughout the Asia-Pacific region.



Finally, ACCU willingly exchanges its experience gained and lessons learned from the adaptation, dissemination and utilization of PLANET materials including the PLANET 4 prototype products when completed. Activities during baseline data collection, adaptation workshops, facilitators' training, and actual lessons using the PLANET materials, are shared among ACCU's partner organizations online. In addition, ACCU plans to organize a sharing and review meeting of PLANET so that the partner organizations can share their experience, lessons and feedback on PLANET with each other.

In this manner, through the process of collective materials development, adaptation of the prototype into local versions, and sharing of lessons and experience, PLANET materials contribute to the capacity-building of other materials developers.

Conclusion

Working on the production of materials for natural disaster preparedness education has enabled ACCU to expand its work in the field of natural disaster preparedness beyond PLANET activities. For example, ACCU and the *Wakayama* Prefectural Education Board co-organized the "Asian Junior Forum for Disaster Reduction Education" held in November 2006 in Japan, where secondary school students from Asian countries were invited to

exchange ideas and learn together how to protect their own communities against potential disasters. Such expansion of networks and activities in relation to disaster preparedness will surely be an asset to ACCU.

The overview of the PLANET scheme, the development of PLANET 4 on natural disaster preparedness, target populations, priority hazards, the process of materials development, and expected impact on them have been outlined above. Many learners in the Asia-Pacific region have already become familiar with Mina, the main character of the series. Therefore, it is hoped that Mina's story on natural disaster preparedness will be accepted favourably once again. This time, Mina's family and her neighbours experience a big storm which serves as the catalyst for cooperative disaster response and preparedness at the community level. Recognizing the fact that those with little access to education are among the most vulnerable, ACCU hopes that through PLANET 4, the neo-literate population will become properly informed of potential natural disasters, the importance of preparation, and the actions to be taken in time of disaster to protect themselves, their family and neighbours. Needless to say, the impact of PLANET 4 materials is not confined to neo-literate populations. The package is designed to promote community based education as a whole and thereby will contribute to the promotion of ESD through the empowerment of community members.



Summary: Lessons Learned

Introduction

The *Education for Natural Disaster Preparedness in Asia-Pacific in the Context of Education for Sustainable Development (ENDP-ESD)* project has developed a number of varied products to help meet some of the needs in the region for educational material on natural disaster preparedness. The teams focused on working with target communities in a collaborative manner developing a wide variety of products which reflects the project's success at identifying the differing needs of each community.

The project used a three tier-collaborative model to develop activities. The international community provides funding, coordination and expertise to in-country national teams who collaborate with local communities to identify needs and appropriate options to meet those gaps. Information, support and final products were fed back up the line.

The target communities were given the opportunity to tell the teams and the international community what they needed in a series of workshops and ongoing discussions. The country teams then developed products with support from international agencies to create disaster education materials that met the needs identified by the target communities. This structural arrangement allowed the teams and international agencies to understand the needs of the community groups, and the community groups to access the skills and resources of the other partners tailored to their requirements.

The results are community-adapted disaster preparedness training materials that are ready to help build the capacity of targeted communities to manage disaster risk.

Lessons Learned By The Country Teams

A number of key lessons can be drawn from the experiences of the country teams. In most cases, several teams observed similar challenges or developed successful techniques for working in this field or in their community.

Collaboration and Consultation

All teams have identified the key importance of collaboration in the development of their projects. The Maldives team reported that:

"The most important lesson learned from the consultations and feedback during the development process was that 'disaster preparedness and education' is an endless process that requires a constant collaborative effort from all parties concerned."

The formation of community meetings and workshops to discuss community needs and to test ideas allowed the country teams access to information that had not been gathered before, or is difficult to access through other sources. For example, the Maldives team was able to acquire specific information about the risks facing schools in the Maldives.

The variety of products developed reflects the teams' ability to identify different needs in their countries – the Thai team identified a need to educate at the community level, whereas the Maldives team identified a lack of national policy. The robust identification of needs



through consultation with the community groups was the cornerstone of developing relevant, useful products in this project.

The media chosen for delivery was also heavily reliant upon information provided in the consultation process. For example, the Indonesian products were designed to focus on collaborative learning techniques based on consultation with teachers who informed the team that Indonesian teenagers preferred learning in a collaborative manner rather than through individual reading.

Collaboration also helped to engender community support for the projects developed. The involvement of the local community and its leaders in the development of the Thailand landslide video has led to the community leaders scheduling a series of information sessions for the affected communities. That outcome is being achieved after the original project has been completed, possibly involving local resources and coordination so that the information effectively reaches its target audience. Without the involvement of community leaders from the beginning, this tangible achievement may not have been possible.

Indigenous knowledge has also been acquired in some instances through grass-roots level consultation. The Thailand team discovered that community groups in the North of Thailand predict the heaviness of the rainy season based on the height of bees' nests in the trees. Additionally, it has been reported that sea gypsy communities in Thailand were able to escape the tsunami of 2004 based on traditional knowledge. The Moken of the Surin Islands in southern Thailand recognized the receding tide as a sign of an approaching tsunami – this knowledge being owed to tales passed on from one generation to the next (Rungmanee & Cruz, 2005). Indigenous knowledge should be taken seriously in education for natural disaster preparedness. Appropriate means in which to extract and document such knowledge needs to be considered. A top-down project implementation approach would never unearth such information as it does not allow a voice to the community groups.

Affected Communities Are Keen to Help

The Thailand and Maldives teams found community groups very keen to provide input and support to their projects as they recognize the potential immediate benefit to their lives. The Bangladesh Red Crescent Society reported similarly of their experience as well.

In working at the community level, the teams were able to access a resource and support base that is not utilized

as often as it could be in natural disaster preparedness activities. Instead of viewing the vulnerable community groups as potential victims in need of help, the teams were able to tap into an active partner who was able to contribute information, understanding and programmatic support. This in turn has led to committed uptake of those projects and their potential integration into mainstream natural disaster preparedness.

Language Barriers

The role of language in natural disaster education material has been highlighted as a crucial issue.

The Indonesian team has produced a product that its audience considers extremely innovative and useful. However, they are unable to apply it as widely as possible without a local language translation due to the low level of English use amongst the target audience. This is an issue ACCU in Japan is attempting to overcome in its PLANET series by producing a centralized English version of its outputs prior to translation into local languages. While this will reach the target audiences more effectively, it entails significant costs and increases development time.

This issue is exacerbated when it is necessary to consider various local dialects. The Thailand video has been produced in the northern dialect with English and where necessary central-Thai subtitles, in an attempt to produce a locally specific project that can be transferred to other contexts if required. While this is useful in this case, it is not as effective for non-Northern audiences as a complete translation, and is not possible when there is no compatibility between the languages/dialects under consideration.

Both the Maldives and Thailand teams have also discovered a difficulty in translating the natural disaster preparedness terminology into the local languages due to an absence of directly replicable wording. This issue has been more pronounced in the Maldives than Thailand, perhaps due to the longer history of natural disaster preparedness in Thailand.

The Maldives team had to spend significant time explaining concepts to audiences that are covered in one phrase in English, prompting them to contemplate that:

“Perhaps standard local terms have to be developed and used by all the different parties involved in disaster preparedness so as to minimize message confusion and facilitate effective communication to the public.”

This is an unexpected difficulty experienced by the teams, and one that has not yet been overcome. While a degree of indigenous terminology can be expected to evolve along with ongoing natural disaster preparedness activities, a proactive effort to develop terminology in languages with no existing translations will aid natural disaster preparedness in those countries.

Culture and Religion

The Maldives and Indonesia teams discovered that the religious and cultural aspects of their targeted communities needed to be considered, as they can be a significant source of resistance to natural disaster preparedness.

The Maldives team stated that:

“Maldivians have strong religious faith, and this may be the reason that some respondents argued that a natural disaster is an act of God, and however much we try we cannot prepare for it. It was difficult to convince them that in preparing for disasters we are acting with the will of God rather than against it.”

Further, the Indonesian team observed that:

“A large number of people lining the danger zone near Merapi Mountain in central Java refused to evacuate despite the signs of an imminent volcanic eruption. They were more trusting of supernatural explanations than scientific information suggesting that more effort is needed in the context of education for natural disaster preparedness.”

Natural disaster preparedness material that does not take into consideration the communities' prevalent beliefs will not be accepted and will fail to have its desired effect. By participating in community consultation programmes, the teams were able to identify these issues and factor them into their work.

Government/Programmatic Support

The teams that have accessed governmental support – including financial, programmatic and administrative support – have found success in developing an ongoing programme that is able to have a long term impact. In Bangladesh, the Bangladesh government finances the Cyclone Warning Programme. The Maldives policy document is being considered for integration into the nation's Education Act. In Thailand, the provincial

leadership is organizing community meetings to view the video and discuss landslide risks. Talk is ongoing of the integration of the training games into the Indonesian academic curriculum.

The involvement of government allows the projects to grow beyond the initial pilot stage that the ENDP-ESD project was able to initiate. It creates an ongoing programme of education to reduce natural disaster preparedness. This is especially effective where government policy is changed and budget line support is given to the projects. Having developed those relationships during the development stages should allow the ENDP-ESD projects to contribute to the reduction of disaster risk in the long term.

The Future of Education for Natural Disaster Preparedness in Asia-Pacific in the Context of Education for Sustainable Development

Natural disaster preparedness materials, adapted to meet local needs, is an ongoing need that these projects only begin to meet. More materials can be generated by either adapting existing materials to other target communities or developing new materials when non-existent. However, in both cases, consultation with the community will be needed to correctly identify risks and appropriate training materials as well as generate support for the projects in a holistic and comprehensive manner across all sectors and stakeholders as advocated by the UN Decade of ESD.

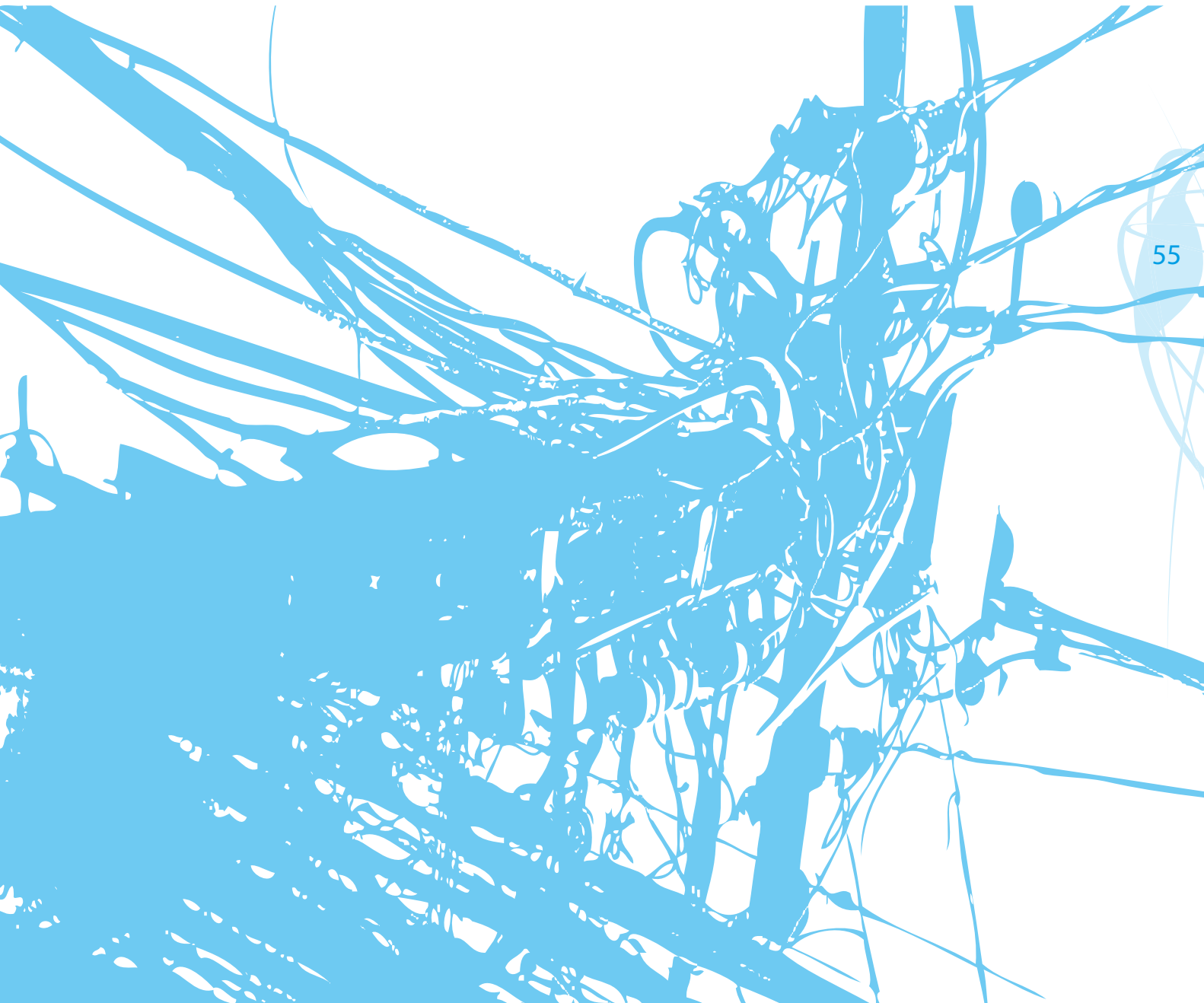
The interest in the projects developed by the country teams at the community, governmental and regional levels demonstrates that they meet an ongoing need in the region for more educational materials in natural disaster preparedness. The quality of the products is a direct result of the processes undertaken by the teams to consult with targeted communities about their risks, needs and the tools that will be effective in engaging the community to learn more about their disaster risk. There has been ongoing support for these ideas at governmental levels which is an encouraging start for what is collectively acknowledged as an ambitious project with far reaching consequences.

In response to the Hyogo Framework for Action and the key role of education for disaster risk reduction identified

therein, UNESCO Bangkok is furthering its undertakings by partnering with UNICEF and the UN International Strategy for Disaster Reduction (UN/ISDR) to make Education for Natural Disaster Preparedness (ENDP) an educational priority within the Asia-Pacific region. Planning is underway to organize a regional workshop in 2007, convening practitioners and policy makers to galvanize stronger commitment towards long-term integration of ENDP into school curricula at the national level.

Introduced within this publication are various strategies and means in which natural disaster preparedness can be approached and information conveyed to communities,

children both in and out of school as well as policy makers. In order to act upon the emerging need for greater awareness of natural hazards and preparedness, political commitment will be essential, hence the intended engagement with policy makers and key stakeholders. However, the true catalysts for the transformation of knowledge into action are those directly affected by natural disasters themselves for whom the means of imparting knowledge and the content must be tailored. Continued effort will need to be made for dialogue at the community level in order to implement successfully culturally sensitive and contextually appropriate initiatives.



**Regional Workshop on Educational Materials for
Education for Natural Disaster
Preparedness in Asia-Pacific
in the Context of Education for
Sustainable Development (ESD)**

1 June 2006: Bangkok, Thailand

Introduction

UNESCO Bangkok and the Asian Disaster Preparedness Center (ADPC) co-hosted a regional workshop for the project: *Education for Natural Disaster Preparedness in Asia-Pacific in the Context of Education for Sustainable Development (ESD)* on 1 June 2006. The workshop presented illustrative examples of useful educational materials developed during the project. The workshop's key objective was to present, promote and disseminate the ideas, lessons and training products to the workshop participants and to discuss and stimulate new initiatives to develop educational materials concerning disaster preparedness in the Asia Pacific region.

Workshop Overview

During the workshop, an overview of the project was presented by UNESCO Bangkok. In addition, the country teams, representing seven countries, presented their experiences in developing the products they have created; lessons they learned; how nationally specific considerations shaped their work; and what they plan to do next to put into practice the work they have done.

Following this first session, participants contributed to the project in two discussion sessions.

The sessions focused on the following key questions for the materials:

Group Discussion 1: Lessons Learned

- What activity (factor) did you undertake that contributed most to a successful outcome?
- What were the biggest challenges?
- How did you overcome those challenges?
- What can others learn from your experience?

Group Discussion 2: The Way Forward

- How is disaster education applicable to your work?
- How could you use these products in your work?
- How could these products be scaled up for wider use?
- Does your organization need to develop further disaster education material?
- Who do you see as your potential partners?

Information Sharing

The one day workshop presented the educational materials and discussed their potential application in the Asia-Pacific region. It focused on the lessons learned during the development process and on the next steps to scale up the products and ideas created during this project.

The teams shared their experiences in developing the education materials:

Thailand: Understanding Landslide Hazards and Preparedness in Northern Thailand

The Thailand team shared its experience developing a landslide risk reduction video. Key points to accomplishing this task were detailed pre-planning, collaboration with the target community and choosing effective partners.

Indonesia: "Disaster Master" Simulation Game of Natural Disaster Preparedness and Information Kit

Indonesia presented the board game and information foldouts on natural disasters. The team's collaboration and testing with school teachers in Indonesia led to the development of an interactive, shared learning product to meet the preferred learning style of teenage Indonesian students.

India: Community Based Disaster Preparedness Education - Strategies for Localization of Disaster Preparedness Educational Resources

The development of a top-to-bottom disaster risk management regime in India was presented by this team. It highlighted the importance of both an organized system and community involvement in disaster risk management. Engendering government support for this project was identified as a crucial issue to ensure sustainability and implementation.

Maldives: School Based Disaster Preparedness Education

The Maldives team presented the school disaster management policy they developed to provide input into the Maldives' developing disaster policy. The report is currently being considered by the Maldives Ministry of Education. The policy was developed in collaboration with partner schools and highlights the risks many school face due to structural design and layout.

ACCU: PLANET 4. ACCU presented their work in developing educational material for PLANET 4. The English version of the educational disaster posters and other resources are nearing completion, and will then be available for other nations to translate and adapt to meet local needs.

Bangladesh Red Crescent Society: Mock Demonstration on Cyclone & Community Based Programme

Bangladesh Red Crescent Society presented information about their community based Cyclone Warning Programme, which uses its 34,140 trained volunteers to warn communities in the cyclone's path about the pending disaster. The Society also presented a video of an evacuation training drill they conducted.

Sri Lanka: Inclusion of Disaster Management for Project Work in Schools

From Sri Lanka, GTZ (German Technical Cooperation) GmbH presented the work programme they are undertaking to establish disaster management project work in Sri Lankan schools.

ADPC: Disaster Risk Management and Education. ADPC presented a session highlighting the crucial role played by education in the pre-disaster period, the impact of and possible integration of disaster education into the post-disaster response, and the many options and new technologies available to educate people about disaster risk management. Through education, community groups and disaster managers can learn to reduce disaster risk and mitigate the impact of disasters by living in an ecologically sustainable manner, undertaking programmes to prevent and mitigate disaster risk, and preparing to manage the impact of disasters.

Work Groups

The afternoon consisted of two group-work sessions to discuss the "Lessons Learned" from the programme and develop the "Way Forward" for the ENDP-ESD project and the educational materials developed.

Lessons Learned

The groups explored four questions under the heading of "Lessons Learned", reaching the following conclusions:

"What activity (factor) did you undertake that contributed most to a successful outcome?"

Participation, consultation and effective networking and partnerships were identified as the key components of a successful project. By working with a local partner, the groups were able to identify local needs, integrate local learning styles into their product and gain support from the target audience for their project. The variety of products created highlights the different needs that each group found in their respective target audiences.

Good planning was also identified as being important.

"What were the biggest challenges?"

The lack of awareness amongst community groups of the risks facing them proved an initial hurdle in gaining support for their projects. Similar difficulties were experienced in negotiating with governments and councils.

The absence of a central library/online resource facility made it difficult for the teams to identify any relevant resources that they could draw on. The lack of resources in local languages was particularly pronounced.

Nations that contain multiple languages and dialects made producing a widely applicable product difficult for some teams.

Evaluating the success of their products and developing sustainability in training and programme development have been identified as future challenges.

"How did you overcome those challenges?"

Working with communities at the grass-roots level is seen as the key methodology to overcome the challenges above. In doing so, the teams were able to build capacity and awareness within their target groups and deliver creative materials for disaster risk management. Adapting their products to local needs through consultation helped develop relationships at the community level.

Developing good relationships with government and important stakeholders has helped teams to develop their projects.

“What can others learn from your experience?”

The participatory approach is an essential component of a successful project. By consulting with community groups, the campaigns, training, videos or other products meet the needs of the community and hence are more likely to be supported.

It is important to have information about the community group, available resources and key factors in planning prior to commencement. Field testing and ongoing evaluation throughout the development process allows the product to be recalibrated to community needs as it is developed.

The Way Forward

The groups discussed five questions under the heading of “The Way Forward” to discuss the future of their projects and possible collaborations:

“How is disaster education applicable to your work?”

The ongoing mainstreaming of disaster risk management in environmental management, other social science disciplines, information communication technology (ICT), geographic information system (GIS) applications into all industries means that it is a part of all roles. Thus, participants identified the importance of themselves and others to being trained in disaster risk management.

It is also important to identify and promote indigenous knowledge relevant to disaster risk management.

“How could you use these products in your work?”

The products are very good for the communities they have been developed for, and hence can be used for public awareness raising and education programmes. The possible adaptation to other contexts (e.g., via translation) may be possible for some products.

“How could these products be scaled up for wider use?”

Workshops and training to disseminate information about the products or using them for disaster management training could play an import role in scaling up their use. Programmatic support is required for the further dissemination of the projects.

Governments, NGOs and the international community could use the products as part of sustained public awareness or training campaigns. This may include integration into professional and government training programmes.

Policy advocacy to promote disaster risk management (including information communication technology, geographic information systems and community media centres) will be important to gain support for future programmes, which could use the products for capacity building. They could also be adapted to meet other communities’ needs in a wide scale programme.

The development of a regional resource database, including top-down conventional knowledge, bottom-up indigenous knowledge, glossary of technical terms, an online information sharing e-forum and a log of training products will aid the disaster risk management community in identifying relevant information and useful products for their work.

“Does your organization need to develop further disaster education material?”

Further material should be developed if there is an existing gap and the materials need to be adapted to local needs. If an appropriate product exists, then it should be used to avoid duplication and waste.

The use of indigenous knowledge could be further developed and it is important that local language be considered for future educational materials.

“Who do you see as your potential partners?”

Possible partners in the development and delivery of disaster educational material and programmes are:

- national governments
- donor agencies
- UN agencies
- communities
- international NGOs
- local NGOs
- schools
- private sector
- academics and academic institutions
- disaster management professionals and agencies

Conclusions

The role of community consultation and participation was at the heart of the project's ability to develop disaster risk management educational material that met the needs of the targeted community groups. It was able to draw on local knowledge to identify risks, obtain information about the community group and develop products that met the needs of the community group.

The workshop provided an opportunity for the teams to present their projects and experiences and enabled the participants to discuss future collaboration and the

development of the ideas and products created. The combination of new ideas and practical discussion with people in positions to make changes within organizations mandated to work in the field, and also with donor organizations to support further activities, could lead to the introduction of innovative ideas into the activities of those organizations. If organizational commitment can be obtained, it can lead to a sustainable uptake of the disaster education material within the region. Ongoing costs of the programme would then become a budget line item in national/organizational funding or in a cost sharing arrangement with international bodies or donor organizations.

Bibliography: References on Natural Disaster Preparedness

References Cited

CBSE. 2004. *Towards a Safer India: Education in Disaster Management*. Delhi, Central Board of Secondary Education. www.ndmindia.nic.in/WCDRDOCS/Towards%20A%20Safer%20India-CBSE.pdf (Accessed 17 January 2007.)

Haddad, C. and Sirikit, A. 2005. UNESCO plans tsunami recovery efforts. *UNESCO Bangkok Newsletter*, No.2, pp. 1-2.

Hargreaves, L. and Sirikit, A. 2005. Education and public awareness vital for sustainable development. *Ibid*, pp. 1, 3.

IFRC. 2001. *World Disasters Report 2001: Focus on Recovery*. Geneva, International Federation of Red Cross and Red Crescent Societies.

Matsuura, K. 2005. UNESCO stands ready to extend tsunami watch system to Indian Ocean. *UNESCO Press Release*, No. 2005-02. Paris, UNESCO. http://portal.unesco.org/ci/en/ev.php-URL_ID=17860&URL_DO=DO_TOPIC&URL_SECTION=201.html (Accessed 17 January 2007.)

Rungmanee, S. and Cruz, I. 2005. The knowledge that saved the sea gypsies. *A World of Science*, Vol.3, No.2, pp. 20-23.

UN/ISDR. 2005. *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*. Geneva, United Nations International Strategy for Disaster Reduction. www.unisdr.org/asiapacific/ap-hfa/hf-ap.htm (Accessed 17 January 2007.)

Further Reading

Educational Disaster Preparedness Resources from the Asian Disaster Preparedness Center, Bangkok

2003. *The School Earthquake Safety Program in Kathmandu Valley*. (Safer Cities Case Studies on Mitigating Disasters in Asia and the Pacific, Safer Cities 4.)

2004. *Channels of Communications – A Challenge, Public Awareness in Flood Preparedness in Bangladesh*. (Safer Cities Case Studies on Mitigating Disasters in Asia and the Pacific, Safer Cities 8.)

2004. *Creating Earthquake Preparedness in Schools: A Case Study of Mitigation Efforts in Indonesia*. (Safer Cities Case Studies on Mitigating Disasters in Asia and the Pacific, Safer Cities 10.)

2004. *Towards Technological Hazards Risk Reduction in Ahmedabad: Schools as Effective Institutions for Disaster Awareness and Preparedness*. (Safer Cities Case Studies on Mitigating Disasters in Asia and the Pacific, Safer Cities 11.)

2006. *Flood Information Kit for Teachers and Educators*.

2006. *Implementation Action for Priority Implementation Project for Mainstreaming of Disaster Risk Considerations into Education Sector by Integrating Disaster Management into School Curriculum of Cambodia (draft)*.

2006. *RCC Guidelines for Mainstreaming Disaster Risk Reduction into School Curriculum (draft)*.

Additional Educational Disaster Preparedness Resources

ACCU. 2005. *Materials Development on Disaster Prevention for Community Empowerment*. Tokyo, Asia/Pacific Cultural Centre for UNESCO.

ADRC. 2005. *Tsunami, Lessons Learnt from Japanese Story 'Inamura-no-hi'*. Government of Japan and Kobe, Asian Disaster Reduction Center.

Bonar, S. 2002. *Tsunamis: Natural Disasters*. Mankato, USA, Capstone Press.

Carruthers, M. W. 2005. *Tsunamis*. New York, Franklin Watts.

IOC/UNESCO. 1997. *Educational Kit on 'Earthquakes and Tsunamis'*. Honolulu, International Tsunami Information Center, Valparaíso, Servicio Hidrografico Oceanografico de la Armada de Chile and Paris, Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization.

Parks, P. J. 2005. *Tsunamis*. San Diego, USA, KidHaven Press.

Thompson, L. 2000. *Tsunamis. Natural Disasters*. New York, Children's Press.

Torres, J. A. 2005. *Tsunami Disaster in Indonesia, 2004: Natural Disasters*. Hockessin, USA, Mitchell Lane Publishers.

Resources for Disaster Preparedness in the Asia-Pacific Region

Abarquez, I. and Murshed, Z. 2004. *Community Based Disaster Risk Management – Field Practitioner's Handbook*. Bangkok, Asian Disaster Preparedness Center.

ADRC. 2005. *Natural Disasters Data Book 2004*. Kobe, Japan, Asian Disaster Reduction Center. http://web.adrc.or.jp/publications/databook/databook_2004_eng/eng.html (Accessed 17 January 2007.)

Campbell, J. R. 1993. *Disaster Preparedness and Mitigation in the Republic of Maldives*. Manila, Asian Development Bank and Male, Ministry of Planning and Environment.

Cortes, L. P. et al. 2003. *Earth Science: The Philippines in Focus*. Diliman – Quezon City, University of Philippines Institute for Science and Mathematics Education.

Frew, S. 2003. *Risk Communication Strategy Guidelines for Asian Urban Disaster Mitigation Program*. Bangkok, Asian Disaster Preparedness Center.

Government of India. 1997. *Vulnerability Atlas of India*. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.

IAP. 2003. *Disaster Reduction in Asia & Pacific – ISDR Informs*. Issue 0. Bangkok, ISDR Asian Partnership on Disaster Reduction. www.unisdr.org/asiapacific/ap-informs/ap-informs.htm (Accessed 17 January 2007.)

IAP. 2005. *Disaster Reduction in Asia & Pacific – ISDR Informs*. Issue 1. Bangkok, ISDR Asian Partnership on Disaster Reduction. www.unisdr.org/asiapacific/ap-informs/ap-informs.htm (Accessed 17 January 2007.)

IAP. 2006. *Disaster Reduction in Asia & Pacific – ISDR Informs*. Issue 2. Bangkok, ISDR Asian Partnership on Disaster Reduction. www.unisdr.org/asiapacific/ap-informs/ap-informs.htm (Accessed 17 January 2007.)

PDC. 2005. *Asia Pacific Natural Hazards and Vulnerabilities Atlas*. Hawaii, Pacific Disaster Center. www.pdc.org/atlas/html/atlas-init.jsp (Accessed 17 January 2007.)

Rego, L. 2000. *Reforming of Policy, Legal and Institutional Arrangements and Planning for Disaster Management in Asia: Trends, Issues and Challenges*. Bangkok, Asian Disaster Preparedness Center.

SEEDS. 2006. *Disaster Management Training Manual for Students and Teachers*. New Delhi, SEEDS. (In Dari and Pashto.)

Twigg, J. and Bhatt, M. (eds.) 1998. *Understanding Vulnerability: South Asian Perspectives*. London, Intermediate Technology Publications.

UNDP. 2005. *Developing a Disaster Risk Profile for Maldives*. New York, United Nations Development Programme.

USAID and ICIP. 2002. *ABCD Basic Disaster Awareness Handbook*. Istanbul, Istanbul Community Impact Project.

Zahed, F. P. and Seif, A. E. 2005. *Council of Security Versus Earthquake*. Tehran, International Institute of Earthquake Engineering and Seismology. (In Persian.)

Additional Disaster Preparedness Resources

B.C. Geological Survey. 1993-7. *Landslides in British Columbia*. British Columbia, Canada, B.C. Geological Survey of the B.C. Ministry of Energy, Mines and Petroleum Resources. www.em.gov.bc.ca/Mining/Geolsurv/Surficial/landslid/ (Accessed 17 January 2007.)

Blaikie, P., Cannon, T., Davis, I. and Wisner, B. 1994. *At Risk: Natural Hazards, People's Vulnerability and Disasters*. London, Routledge.

Danish Red Cross Society. 1994. *Disaster Management Training Manual, Community Organizing*. Copenhagen, Danish Red Cross Society.

ECPFE and EPPO. 2002. *Emergency Evacuation of the Population in Case of an Earthquake*. Handbook no. 3. Greece, European Centre on Prevention and Forecasting of Earthquakes, and Earthquake Planning and Protection Organization.

Enarson, E., Meyreles, L., González, M., Hearn Morrow, B., Mullings, A. and Soares, A. (eds) 2001. *Working with Women at Risk: Practical Guidelines for Assessing Local Disaster Risk*. Miami, USA, International Hurricane Center, Florida International University.

Guha-Sapir, D., Hargitt, D. and Hoyois, P. 2004. *Thirty Years of Natural Disasters 1947-2003: The Numbers*. Louvain-la-Neuve, Belgium, UCL Presses Universitaires de Louvain.

IFRC. 1999. *Vulnerability and Capacity Assessment: An International Federation Guide*. Geneva, International Federation of Red Cross and Red Crescent Societies.

IFRC. 2006. *Disaster Risk Reduction and the International Federation*. Geneva, International Federation of Red Cross Society.

IFRC. 1993-2006 present. *World Disasters Report*. Geneva, International Federation of Red Cross and Red Crescent Societies.

IOC. 1997. *Earthquakes and Tsunamis: High School Teacher's Guidebook*. Paris, Intergovernmental Oceanographic Commission. (In English and Russian.)

Maskrey, A. 1999. *Disaster Mitigation: A Community Based Approach*. Oxford, UK, Oxfam.

Morrison, G. M., Furlong, M. J. and Morrison, R. L. 1994. From school violence to school safety: reframing the issue for school psychologists. *School Psychology Review*, 23:236-256.

National Disaster Education Coalition. 1999. *Talking About Disaster: Guide for Standard Messages*. Washington, D.C., National Disaster Education Coalition. www.disastersrus.org/MyDisasters/talking/talking_about_disasters.htm (Accessed 17 January 2007.)

Reed, J. 2005. *Earthquakes: Disaster and Survival (Deadly Disasters)*. Berkeley Heights, USA, Enslow Publications.

Twigg, J. 2004. *Disaster Risk Reduction: Mitigation and Preparedness in Development and Emergency Programming*. London, Humanitarian Practice Network. (Good Practice Review, no. 9.)

UNDP. 2004. *Reducing Disaster Risk: A Challenge for Development*. New York, United Nations Development Programme.

UN/ISDR. 2004. *Living with Risk: A Global Review of Disaster Reduction Initiatives*. 2004 Version, Inter-Agency Secretariat of the ISDR, Volume 1. Geneva, United Nations International Strategy for Disaster Reduction.

USGS. 1989. *The Next Big Earthquake in the Bay Area May Come Sooner than You Think*. Reston, USA, United States Geological Survey.

Wisner, B. 2006. *Let Our Children Teach Us! A Review of the Role of Education and Knowledge in Disaster Risk Reduction*. Geneva, United Nations International Strategy for Disaster Reduction.

World Bank. 1997. *Environmental Hazard and Risk Assessment*. Environmental Assessment Sourcebook Update 21. Washington, D.C., Environment Department, World Bank.

Toolkits

UNESCO and UNCCD. 1997. *Education Kit on Combating Desertification*. Paris, United Nations Educational, Scientific and Cultural Organization, and Bonn, United Nations Convention to Combat Desertification. (In English, French and Spanish.)

UN/ISDR. 2000. *Disaster Prevention, Education and Youth: The Specific Case of Wildfires, Information Kit*. United Nations International Strategy for Disaster Reduction. www.unisdr.org/eng/public_aware/world_camp/2000/pa-camp00-kit-eng.htm (Accessed 17 January 2007.)

UN/ISDR and UNICEF. 2004. *Riskland Game and Educational Kit: 'Lets Learn to Prevent Disasters!'* Geneva, United Nations International Strategy for Disaster Reduction and New York, United Nations Children's Fund. www.unisdr.org/eng/public_aware/world_camp/2004/pa-camp04-riskland-eng.htm (Accessed 17 January 2007.)

UN/ISDR. 2001. *Countering Disaster, Targeting Vulnerability: 2001 United Nations World Disaster Reduction Campaign, Information Kit*. Geneva, United Nations International Strategy for Disaster Reduction. www.unisdr.org/eng/public_aware/world_camp/2001/pa-camp01-kit-eng.htm (Accessed 17 January 2007.)

World Vision. 2005. *Tsunami Education Kit*. Victoria, Australia, World Vision Australia. www.globaleducation.edna.edu.au/globaled/page1637.html (Accessed 17 January 2007.)

Websites (Accessed 17 January 2007.)

Databases and Libraries

Asian Disaster Reduction Center. 2007. www.adrc.or.jp/

Australian Government. 2007. *Emergency Management Australia Disasters Database*. www.ema.gov.au/ema/emaDisasters.nsf

EM-DAT: The International Disaster Database. 2007. www.em-dat.net/

National Oceanic and Atmospheric Administration (NOAA). 2006. *Library*. www.lib.noaa.gov/

ReliefWeb. 2007. [www.reliefweb.int/rw/dbc.nsf/doc100? Open Form](http://www.reliefweb.int/rw/dbc.nsf/doc100?OpenForm)

Benfield Hazard Research Centre. 2006. www.benfieldhrc.org/activities/publications.htm

University of Colorado at Boulder. 2006. *Natural Hazards Center Library: HazLit Database*. <http://ibs.colorado.edu/hazards/Library/Hazlit/NatHazSearch.php>

United Nations International Strategy for Disaster Reduction. 2006. *Library on Disaster Risk Reduction*. www.unisdr.org/eng/library/lib-index.htm

World Meteorological Organization. 2006. *World Meteorological Organization Online Publications*. www.wmo.ch/web/catalogue/cat_en.html

Natural Disaster Resources

Federal Emergency Management Agency. 2006. *Disaster Information*. www.fema.gov/hazard/index.shtml

Our World Foundation. 2005. *Disasters*. www.ourworldfoundation.org.uk/dis-nof.htm

Saint Louis University, Department of Earth and Atmospheric Sciences. 2005. *10 'Worst' Natural Disasters*. www.eas.slu.edu/hazards.html

Wikipedia. 2007. *List of Natural Disasters by Death Toll*. http://en.wikipedia.org/wiki/List_of_natural_disasters_by_death_toll

USGS. 2006. *Natural Hazards Gateway*. www.usgs.gov/hazards/

The World Bank. 2007. *Hazard Risk Management*. <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTURBANDEVELOPMENT/EXTDISMGMT/0,,menuPK:341021~pagePK:149018~piPK:149093~theSitePK:341015,00.html>

World Health Organization Country Office for India. 2006. *Sustainable Development and Healthy Environment – Health Action in Crisis*. www.whoindia.org/en/Section33/Section34.htm

Disaster Specific Resources

Avalanche

Canadian Avalanche Center. 2006. www.avalanche.ca/

Earthquake

California Geological Survey. 2006. *Earthquakes*. www.consrv.ca.gov/cgs/geologic_hazards/earthquakes/index.htm

Carleton College, Science Education Resource Center. 2006. *Earthquake Visualizations*. <http://serc.carleton.edu/NAGTWorkshops/visualization/collections/earthquakes.html>

Development Alternatives Group. 2001. *Traditional Earthquake Resistant Houses*. www.devalt.org/newsletter/may01/of_10.htm

GeoHazards International. 2007. <http://geohaz.org/>

Multidisciplinary Center for Earthquake Engineering Research (MCEER). 2006. <http://mceer.buffalo.edu/education/default.asp>

Victoria University of Wellington. 2006. *Earthquake Hazard Centre (EHC)*. www.vuw.ac.nz/architecture/research/ehc/

Flood

Carleton College, Science Education Resource Center. 2006. *Flood Visualizations*. <http://serc.carleton.edu/NAGTWorkshops/visualization/collections/flood.html>

Hurricane

Carleton College, Science Education Resource Center. 2006. *Hurricane Visualizations*. <http://serc.carleton.edu/NAGTWorkshops/visualization/collections/hurricanes.html>

National Aeronautics and Space Administration (NASA). 1999. *A Fierce Force of Nature: Hurricanes*. <http://observe.arc.nasa.gov/nasa/earth/hurricane/intro.html>

University of Illinois at Urbana-Champaign. 1999. *Hurricanes: Online Meteorology Guide*. [http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/hurr/home.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/hurr/home.rxml)

Landslide

California Geological Survey. 2006. *Landslides*. www.consrv.ca.gov/cgs/geologic_hazards/landslides/index.htm

Carleton College, Science Education Resource Center. 2006. *Mass Wasting/Landslide Animations*. http://serc.carleton.edu/NAGTWorkshops/visualization/collections/mass_wasting.html

Tsunami

California Geological Survey. 2006. *About Tsunamis*. www.consrv.ca.gov/cgs/geologic_hazards/Tsunami/About_Tsunamis.htm

Carleton College, Science Education Resource Center. 2006. *Tsunami Visualizations*. <http://serc.carleton.edu/NAGTWorkshops/visualization/collections/tsunami.html>

Intergovernmental Oceanographic Commission of UNESCO. 2005. *International Tsunami Information Centre*. www.tsunamiwave.info/

National Oceanic and Atmospheric Administration (NOAA). 2007. *NOAA Center for Tsunami Research*. <http://nctr.pmel.noaa.gov/>

National Oceanic and Atmospheric Administration (NOAA). *Tsunami*. www.tsunami.noaa.gov/

University of Washington, Department of Earth and Space Sciences. 2005. *Tsunami*. www.ess.washington.edu/tsunami/index.html

Volcano

Carleton College, Science Education Resource Center. 2006. *Volcano Visualizations*. <http://serc.carleton.edu/NAGTWorkshops/visualization/collections/volcano.html>

Smithsonian National Museum of Natural History. *Global Volcanism Programme*. www.volcano.si.edu/index.cfm

Education and Youth

Annenberg Media. 2007. *Volcanoes*. www.learner.org/exhibits/volcanoes/entry.html

Carleton College, Science Education Resource Center. 2006. *Collection of Visualizations on Geoscience Topics*. <http://serc.carleton.edu/NAGTWorkshops/visualization/collections.html>

Discovery Education. 2006. *Earth Science*. <http://school.discovery.com/lessonplans/earthsci.html>

Federal Emergency Management Agency. 2006. *FEMA for Kids*. www.fema.gov/kids/

Government of New Zealand, Ministry of Civil Defence & Emergency Management. 2006. *What's the Plan Stan?* www.whatstheplanstan.govt.nz/

Inter-Agency Network for Education in Emergencies. 2007. *Good Practice Guides*. www.inesite.org/page.asp?pid=1238

Miami Museum of Science. 2000. *Hurricane: Storm Science*. www.miamisci.org/hurricane/

National Drought Mitigation Center. 2004. *Drought for Kids*. www.drought.unl.edu/kids/index.htm

Natural Disaster Youth Summit. 2007. *Disaster Reduction Education Online*. www.jearn.jp/bosai/eng.html

North Dakota and Oregon Space Grant Consortia. 2006. *Volcano World*. <http://volcano.und.edu/>

Intergovernmental Oceanographic Commission. *TsunamiTeacher*. <http://ioc.unesco.org/TsunamiTeacher/>

United Nations International Strategy for Disaster Reduction Latin America and the Caribbean. *Educational Materials*. www.eird.org/eng/educacion/educacion-dos-ing.htm

United Nations International Strategy for Disaster Reduction Latin America and the Caribbean. *Kids and Youth: Games and Projects for You and Your Friends*. www.eird.org/eng/ninos/kids.htm

University of Bristol. *Introducing and Demonstrating Earthquake Engineering Research in Schools*. www.ideers.bris.ac.uk/resistant/resist_home.html

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United Nations
Educational, Scientific and
Cultural Organization

UNESCO Bangkok

The Asia-Pacific Programme of Educational
Innovation for Development
Education for Sustainable Development

920 Sukhumvit Road
Prakanong, Bangkok 10110 Thailand
E-mail: bangkok@unescoykk.org
Website: www.unescoykk.org
Tel: +66-2-3910577 Fax: +66-2-3910866