

asian disaster management

a newsletter of and for the community of disaster risk management
practitioners and development workers

news

Vol. 11, No. 1 January - March 2005
ISSN 0858 - 6373

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Asian Disaster Preparedness Center



Message from the Executive Director

The year 2004 ended in a tragedy of unprecedented scale and dimension. Many lessons can be drawn from the disaster that affected nine countries on two continents and claimed over 300,000 lives. One important lesson that emerged from the disaster is the need for monitoring and early warning systems. The loss of human life would have been considerably less had coastal communities had more knowledge and greater awareness of a tsunami risk. The extent of the disaster brought to light the overall lack of awareness and low level of national preparedness. It is imperative therefore that we build systems to make our communities safer and educate citizens on the nature of these threats and the preventive and protective measures that can be taken.

On a happier note, I am very pleased to announce that ADPC has been granted status as an Inter-governmental Organization by the Royal Thai Government. This is a significant milestone in the history of ADPC. Endorsement came with the official signing of the Charter by six signatory states: Bangladesh, Cambodia, Nepal, Pakistan, The Philippines and Thailand, on February 28, 2005 at the Ministry of Foreign Affairs and by China and Sri Lanka on April 5, 2005. Our new status is recognition of the capacity and relevance of ADPC's disaster reduction work in the region. We are grateful to all the nations, partners and well-wishers who have placed their faith in us. With our new status comes more responsibility and a continued commitment to help make communities more resilient and safe. I would also like to take this opportunity to remember the late Col Brian Ward, who played such an important role in laying the foundation for ADPC's international status.

In closing, I hope you will find this issue of the Asian Disaster Management News on "Early Warning for Natural Disaster Mitigation" timely, informative and useful.

Dr Suvit Yodmani,
Executive Director

ADPC Attains Inter-governmental Organization Status



The signing ceremony of the new ADPC Charter by signatory states Thailand, Bangladesh, Cambodia, Nepal, Pakistan and the Philippines on February 28, 2005 and China and Sri Lanka on April 5, 2005.

Early Warning for Natural Hazard Mitigation

The Indian Ocean Disaster of December 26, 2004 generated one of the strongest calls yet for early warning systems for natural hazards. Despite the International Decade for Natural Disaster Reduction and repeated calls for natural hazard warning systems for all countries by 2000, disasters still occur without warning.

Constructing early warning systems, getting them working satisfactorily and sustaining them at appropriate levels of operational efficiency and effectiveness are unappreciated challenges. Even when scientific monitoring and predictive capabilities exist, it may take up to several decades - and huge dedication on the part of those responsible - to make warning systems function well. And then the effort needs to be sustained.

Early warning systems consist of six main elements (Figure 1) linked by feedback loops (e.g. if a warning is not generating the desired response, the warning needs altering). Design requires effective integration of expertise from scientific and technical disciplines (e.g. meteorology, geology), behavioral, sociological and organizational disciplines, and the organizations which represent them. Where integration is poor, systems are likely to under-perform. Mapping exposure of people and property to natural events identifies those in need of warning. Investment in technical monitoring, detection and forecasting capabilities extends warning lead time. Building up the experience of those responsible for event detection ensures that they recognize the conditions leading to unusually large natural events.

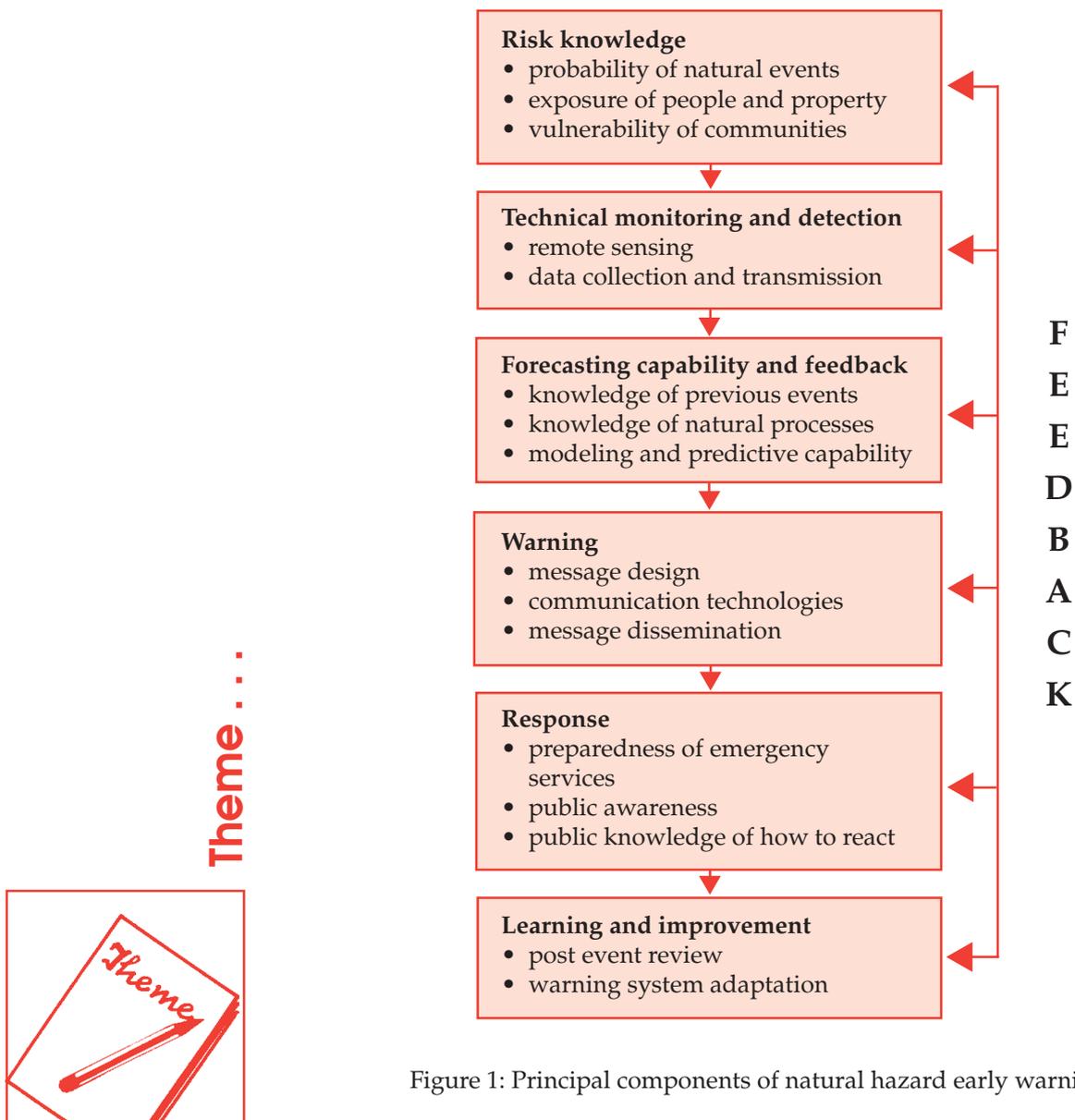


Figure 1: Principal components of natural hazard early warning systems

Natural events often cross political and organizational boundaries and one of the big challenges is effective sharing of environmental data. The revolution in information and communication technologies (ICT) has opened up an array of new methods, including the mobile telephone, for alerts and warnings. The choice of ICT must be carefully matched to the levels and types of technologies used in exposed communities and their socio-economic characteristics.

Early warning systems will fail or under-perform without a high degree of public awareness of hazards, hazard warnings and how to respond to warnings. Creating and maintaining a high level of public awareness and responsiveness through education is a huge task, especially where at-risk populations include tourists with a limited understanding of local environmental risks.

A successful warning is one that is (a) sent (b) received and (c) recognized and understood and acted on by the intended recipient. A frequent problem is that senders believe their warnings are successful, when in fact warnings are neither successfully received nor understood.

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Warning recipients bring their own meanings and past experiences to the situation in which a warning is received. Response is conditioned by present perceptions and past experiences.

As an example, in February 1953, tidal flooding killed thousands in the North Sea basin along the coastlines of Britain, The Netherlands and Belgium. The flood struck in England several hours before it hit The Netherlands and Belgium. If a warning system had existed, the English could have warned the Dutch and Belgians as soon as they were flooded. This example illustrates the potential of “in-event warning” which could have saved thousands of lives in the 2004 Indian Ocean earthquake and tsunami disaster. In-event warnings must be developed as part of any natural hazard warning system.

Reference

United Nations (2005) Draft Common Statement of the Special Session on the Indian Ocean Disaster: Risk Reduction for a Safer Future, World Conference on Disaster Reduction, Kobe, Hyogo, Japan 18-22 January.

Potential Value of Lead-time for Different Hazards

Natural hazards are normally classified by their onset time. Some are slow-onset and provide lead-time for mitigative action. Slow-onset hazards include droughts, floods and volcanic eruptions. Other events, such as flash floods, tsunamis and cyclones, provide little or no lead-time for mitigation and preparedness measures or appropriate warnings. Sufficient lead-time increases the potential for saving lives, livestock, property and livelihoods of a population at risk.

Listed below are the approximate lead times for a selection of slow- and quick-onset natural hazards.

Slow-onset natural hazards	Lead-time	Value of lead-time
Drought	3-6 months	Crops/agriculture/water management, food security
Riverine Flood	3-5 days	Saving lives by evacuation of people and livestock to safe havens
Volcanic Eruption	48 hours	Saving lives by evacuation of people and livestock to safe havens
Quick-onset natural hazards		
Flash-Flood	6 -18 hours	Saving lives by evacuation of people and livestock to safe havens
Tsunami (Local)	5 mins	Saving lives by evacuation of people and livestock to high ground
Tsunami (Distant)	3 hours	Saving lives by evacuation of people and livestock to high ground
Storm/Cyclone	48 hours	Saving lives by evacuation of people and livestock to safe havens
Landslide	1-2 hours	Saving lives by evacuation of people and livestock to safe havens
Tornado	1-12 hours	Saving lives by evacuation of people and livestock to safe havens

Tsunami Media Coverage and Global Humanitarian Ethics

The media response to the tsunami was fast and massive. A relatively unknown hazard in the shape of a devastating flood wave was a great story and set new standards for emergency coverage. The rapidly increasing death toll - increasing from a few hundred to almost two hundred thousand - captured news editors' interest for days. "Tsunami" became the new word in everyone's vocabulary.

Several factors contributed to the impressive media response: the dramatically visual nature of a tsunami appearing from out of the blue and devastating tropical coastlines; the sudden and in places total destruction and the high number of casualties; the apparent randomness of a tsunami hitting innocent people along coastlines; the simplicity of an event triggered by nature with no people to blame; the timing (during Christmas), allowing the media to play on charitable sentiments; the familiarity of the affected region and the presence of Western tourists, which generated commitment from outside the usual group of humanitarian sympathisers. One could argue that the tsunami had appeal for everyone.

For the media, instant disaster coverage is no longer a technical challenge. Tourists and reporters readily provided footage, which brought the tsunami to life on all continents. Sky TV News sent fifty journalists from London to South-East Asia to cover the tsunami compared to having only one correspondent in Africa (Gidley, 11.03.05). Based on an analysis of more than 200 English language newspapers from around the world, Reuters Alertnet found that the tsunami got more media attention in the first six weeks after it struck than all of the world's top ten emergencies received in the past year. The "forgotten" emergencies were complex political scenarios such as the events in Democratic Republic of Congo, Darfur in Sudan, Northern Uganda, Liberia, Colombia, Haiti, Chechen and Nepal along with globally significant public health emergencies such as AIDS, TB and malaria (Jones, 10.05.2005). None of these long-term and under-funded emergencies can easily be converted into simple sound bites provoking immediate emotional reactions from empathetic viewers like the tsunami did. Because there is a relationship between media attention - especially television coverage - and donor commitment, it is worth investigating how emergencies make headlines.

Emergencies related to the security agenda of leading world powers generate media interest. Touching eyewitness reports - preferably from star reporters - and shocking statistics often succeed in promoting forgotten emergencies if they represent a new take on things. Stereotypically, the focus of tsunami coverage was initially on foreign donations rather than in-country assistance and on helpless victims rather than resourceful responders. In addition, it took time before the media sensed the geography of the disaster and reported from places other than Southern Thailand and Sri Lanka. While a number of disaster myths were repeated, new insights made headlines. Although initial focus was on immediate effects, many journalists quickly stressed the long-term implications of the disaster. The unfounded risk of diseases from dead bodies re-occurred, prompting public health experts to question the rationale for undignified mass burials. The international media played an important role in promoting the UN - rather than unilateral donors - to coordinate the emergency response and in disseminating the news that some NGOs said "stop" to further donations at a time when the emotional appeal of the tsunami was still running high.

The massive media interest had huge fund raising implications. While initially there was limited commitment from some official donors, the general public in affected developing and developed countries donated generously. Gradually, a competition developed as to which country could do the most and give the most money to the victims. The tsunami response will probably turn out to be one of the best-funded humanitarian operations ever, which seems difficult to reconcile in light of the emergencies that remain "forgotten".

In a global era, it is necessary to develop a global humanitarian ethic based on the principles of humanity, impartiality, neutrality and independence. Only by offering humanitarian assistance based on need - and need only - will the humanitarian community be able to fulfil the expectations of those in need. This must remain a more important agenda item than letting the media set priorities for disaster managers throughout the world.

The author has referred to a number of articles and discussions conducted by Reuters Alertnet at: www.alertnet.org. Erik Kjaergaard has worked as Emergency Focal Point for WHO in Nepal and as Area Coordinator in OCHA Sudan. He is currently a student at the London School of Hygiene and Tropical Medicine and can be contacted at erikkjaergaard@hotmail.com

Early Warning of Structural Collapse After a Disaster

Even though a building remains standing after a natural disaster and, to the untrained eye looks safe, it could be on the brink of a structural failure. Thanks to new technology, it is now possible to determine whether or not structures are about to collapse. The way structures vibrate indicates their state of health in much the same way as a heartbeat will give information about the state of health of a person. A system has been developed in which a portable device is taken to a structure

and a vibration measurement is made over a period of about three hours. The vibration signature is then returned to the laboratory for in-depth analysis.



Fig. 1: Building affected by an earthquake

about the condition of the building by collecting and analyzing minute vibration signals from the structure.

A structure that is about to collapse displays a distinctive vibration signature. This comprises a series of very low frequency resonances, and are an indication that the structure is breaking up. These frequencies are typically at less than one cycle every 10 seconds. It is possible to conduct an in-depth analysis of the vibration signatures and use these to compare what the structure is actually doing with how it should have behaved when it was newly built. Equipment has been developed for quick and affordable assessment of vibration signatures for entire buildings.

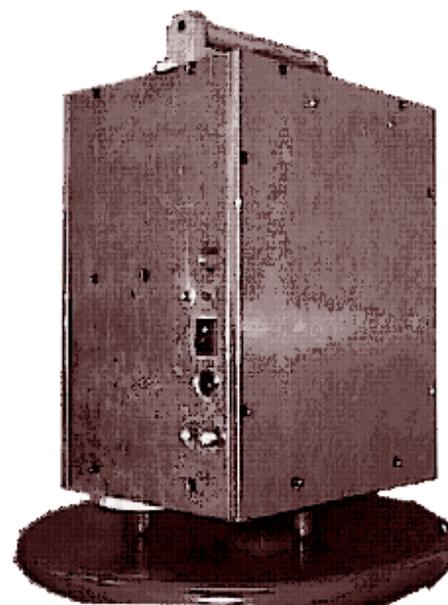


Fig. 2: Portable Integrity Assessment System

This equipment is portable, battery operated, and can record vibrations caused by natural phenomena such as wind, passing traffic or microtremors. The equipment is so sensitive that it can resolve motion to better than the wavelength of visible light. With such a sensitive instrument it is possible to obtain usable vibration signatures even when there is no perceptible motion of the structure. Even when the vibration is very small the structure behaves in a similar way, and it is possible to determine what will happen to the structure if the vibration increases.

In this way it is possible to conduct a safe investigation even if the structure is in danger of collapse and to get a good measure of the state of health of the structure.

The system has been used in several parts of the world so far including assessments of earthquake-damaged buildings in Asia, and ageing bridges and offshore structures in South America. In each investigation, the data are sent to laboratories in Hong Kong and Australia for analysis.

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Insight . . .



Managing Chaos: The Disaster After the Disaster

The non-governmental sector has grown massively over the past 25 years. In the United States there are over 600,000 non-profit corporations, of which perhaps 3,000 are exclusively international in focus. Only a few hundred of these comfortably fit into the category of “international relief and development NGO”.

The ‘dirty little secret’ of foreign aid is that governments do not employ relief workers and rarely deliver aid directly; nor, for the most part, do United Nations agencies. Increasingly, foreign aid provided by governments is contracted out to non-profit NGOs and for-profit corporations. UN agencies are increasingly using NGOs rather than member state organizations — which used to have first claim to UN funds.

As a result, the NGO sector is “morphing” into something resembling (in the US, at least) the defense industry. Organizations founded as eleemosynary or charitable institutions, whose mission statements and corporate by-laws outlined their philanthropic purpose, are opening offices in Washington, New York, Brussels and Tokyo. Their task is to glean new and/or unallocated funds for their parent NGOs. This intensifies competition among NGOs without increasing the quality of their assistance.

The recent pan-Asian tsunami produced a governmental and private sector response of unprecedented size. Fifty-two NGO members of InterAction, a US umbrella organization of 160 relief agencies, collected HK\$4 billion for the tsunami while the US Government has pledged an additional HK\$7 billion, most of which will be in the form of either government contracts with the NGOs and UN agencies or in reimbursement to the US Department of Defense for ships and helicopters.

There is also a problem with newly emerging centers of aid conflicting with each other. The world now counts as major aid providers the US, the UN, the European Union/European Commission, Japan, Canada, the UK, the Scandinavian countries and now, with the tsunami, India and China. This is in addition to private benefactors of NGOs and Red Cross agencies. All have distinct policies and varying priorities.

While this may ultimately benefit victims of the recent tsunami and other major disasters, the growth has not been in per capita receipt of aid by the victims, but in which NGOs and Red Cross agencies receive the most money for their own purposes. The American Red Cross reports over HK\$2.5 billion already in hand for the tsunami; but its annual budget for 2003/2004 included fund raising expenses of HK\$1 billion and administrative costs of HK\$1.4 billion, so it is not clear how much of these new funds will actually benefit victims.

Another aspect of the coordination problem has been the failure of already enfeebled governments of countries affected by a disaster to be prescriptive in outlining what is and what is not acceptable aid. Governments too often fail to publicly state what their policies will be vis-a-vis international aid efforts mobilized to help their citizens. In Sri Lanka, for example, the government has complained loudly about Christian missionaries and Scientologists evangelizing among Hindu, Buddhist and Muslim disaster victims; but it has yet to eject any of these groups from the country. Sri Lanka was also late in outlining what is and is not acceptable material aid and, as a result, received such items as winter clothing, outdated pharmaceuticals and even Viagra.

There needs to be vastly improved coordination after a disaster on many fronts. A Standard Operating Procedure would include the following:

- Governments should hold off accepting any and all aid deliveries to affected areas which are not related to the immediate rescue of persons in distress until they and/or an international assessment mission has been completed (this can be done within 72 hours). The results of the initial assessment should inform what will and will not be acceptable aid and this should be disseminated worldwide.
- Bi-lateral and multi-lateral governmental donors should speak to each other first before making their own arrangements with affected-area governments to avoid duplication of effort and being manipulated by desperate governments. The competition for tsunami aid-giving by various governments was unseemly. Most of the pledges are unlikely ever to be fulfilled.

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Forewarned is Forearmed: Future Tsunami Threats to Sri Lanka

On 26 December 2004, the coast of Sri Lanka was hurled into devastation beyond imagination and into a maelstrom of confusion. According to the U.S. National Geophysical Data Centre (NGDC) that catalogues global tsunami events, within the last 250 years there have been in excess of 60 tsunamis in the Indian Ocean region. Tsunamis are not that rare.



Tsunami affected areas in Sri Lanka

The source of these tsunamis is related to the tectonic activity of the region. Of these 60 events, eight tsunamis affected Sri Lanka excluding the December 26, 2004 tsunami. There were two tsunamis triggered off the coast of Pakistan in 1819 and 1945. In the Bay of Bengal there have been at least 4 tsunamis that affected the eastern coast of Sri Lanka; in 1762, 1847, 1881 and 1946. The last three were related to earthquakes near the Nicobar Islands, India. It is also probable that in 1882, a small tsunami was triggered off the northeast coast of Sri Lanka and subsequently a tsunami was registered in the northeastern town of Trincomalee. However, prior to 2004, the most significant tsunami to affect Sri Lanka within the last 250 years was a result of the eruption of the Krakatau volcano in Indonesia on August 27, 1883.

As most tsunamis in the Indian Ocean are earthquake induced, it is likely that the next destructive tsunami to strike Sri Lanka would also originate off the coast of Sumatra. The potential for future destructive tsunamis from

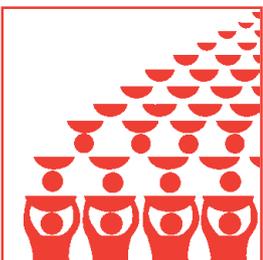
this region is still great. The December 26, 2004 Aceh earthquake did not relieve all the stress along the faults in the Sunda Trench. This fault system is still highly stressed. Furthermore, the large displacement caused by the earthquake has heightened the stress of neighbouring faults. These tsunami-triggering earthquakes could vary significantly in size and destructive force.

The role of a tsunami monitoring centre is to notify and alert local warning centres to prompt civil defence actions against an oncoming tsunami. A monitoring centre must therefore rely on information from geophysical instruments such as seismic sensors, ocean-bottom pressure gauges and tide gauges. From global and regional arrays and seismic and oceanographic stations, a tsunami monitoring centre can accurately determine the location and magnitude of a tsunami-producing event and evaluate the probability of a tsunami.

Although tsunami warning systems would do little to reduce the vulnerability to the near-source area, they would have a significant impact in far-from-source areas such as Sri Lanka. A good EWS should include tools such as monitoring, scenario development and forecasting. A EWS should also be mindful of integration into the larger social system. Because reducing vulnerability is essentially a social process, EWS should be used only in conjunction with other disaster preparedness steps. More scientific investigations into the patterns of tsunami hazards in the Indian Ocean region could prove extremely valuable in mitigating future threats from this up until now under-estimated natural hazard.

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From the grassroots . . .



Second Round of ProVention Grants for Disaster Reduction Announced

The ProVention Consortium is sponsoring a second round of grants to support research on innovative disaster risk management. In an official announcement made in March this year, young professionals dedicated to reducing disaster risk in developing countries were invited to submit proposals. Themes for proposals fall into three general categories: risk identification and analysis, risk reduction and risk sharing/transfer, with preference given to activities in the latter two categories. Links to local institutions, whether they are non-governmental organizations (NGOs), community-based organizations (CBOs), or government departments, field work, and dissemination of results and community feedback are expected to be a central part of the proposed project.

Applications will be screened by a jury of ProVention Consortium partners and selected projects will be awarded a grant of up to US\$5,000. The criteria for selection are: candidate is a national of a developing country, is no older than 35 years of age, is a student or professional staff member of an organization addressing disaster risk management, the project has a nine-month implementation timeframe, the budget does not exceed the maximum grant award amount, and that all applications and project documentation be submitted in English. Grantees from the first grant program may also apply for this second round of grants.

The program is being implemented and managed by:

- Asian Disaster Preparedness Center (ADPC)
- Disaster Mitigation for Sustainable Livelihoods Programme (DiMP), University of Capetown
- University of Wisconsin - Disaster Management Center.

ADPC is responsible for the grants awarded to entrants from South and Southeast Asia and the Pacific.

The program was launched by ProVention in collaboration with the World Bank Hazard Management Unit (HMU) in December 2002. ADPC was one of the regional partners during the first phase. Sixty-five individuals and teams from 27 countries were awarded grants of up to US\$5,000. The projects were completed in January 2004. Fifteen projects were selected as the most innovative and sustainable. Team leaders from these projects presented their findings at the "Global Symposium for Hazard Risk Reduction", July 26-28, 2004 at the World Bank Headquarters in Washington, DC.

The awards for this round will be announced on/a August 1, 2005

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- NGOs and other non-state actors should renew efforts to cooperate before sending material aid and personnel to an affected area. Once there, local NGOs should be acknowledged as the main actors and be given the majority of the resources raised so aggressively by the foreign NGOs descending upon them.

Asia's growing philanthropic profile can benefit from not repeating the mistakes of the rest of the world.

The substance of this article formed the basis of a presentation at the recently held "International Conference on Issues Relating to Disaster Management: Challenges for Governance Reform in Asia" organized by the School of Law, City University of Hong Kong. Mr Richard M. Walden, is Executive President & CEO, Operation USA, an international relief and development agency operating for 25 years. He can be contacted at rwalden@opusa.org

Enhancing Early Warning Systems Identified as a Key Priority Area at the Hyogo Declaration

Priorities for Action 2005-2015

The WCDR concluded with 168 delegations adopting a framework for action calling on states to put disaster risk at the center of political agendas and national policies. The Hyogo Framework for Action: 2005-2015 aims to strengthen the capacity of disaster prone countries to reduce risks and calls upon international finance institutions to support this process by investing more in disaster risk reduction.

There are five priority areas for action:

1. Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.
2. Identify, assess and monitor disaster risks and enhance early warning systems.
3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels.
4. Reduce underlying risk factors.
5. Strengthen disaster preparedness for effective response at all levels.

Below is an excerpt from the Action Plan on the enhancement of early warning systems.

The starting point for reducing disaster risks and for promoting a culture of disaster resilience lies in the knowledge of the hazards and the physical, social, economic and environmental vulnerabilities that most societies face. Next comes knowledge of the ways in which hazards and vulnerabilities are changing in the short and long term, followed by action.

Key activities:

(i) National and local risk assessments

- (a) Develop, periodically update and widely disseminate risk maps and related information in an appropriate format to decision-makers, the general public and communities at risk.
- (b) Develop systems of indicators for disaster risks and vulnerabilities at national and sub-national scales that enable decision-makers to assess the impact of disasters on social, economic and environmental conditions and disseminate the results to decision makers, the public and populations at risk.
- (c) On a regular basis, record, analyze, summarize and disseminate statistical information on disaster occurrence, impacts and losses through international, regional, national and local mechanisms.

(ii) Early warning

- (d) Develop early warning systems that are people-centered, in particular systems with warnings that are timely and understandable to those at risk and which take into account the demographic, gender, cultural and livelihood characteristics of the target audiences and include guidance on how to act on warnings.
- (e) Establish, periodically review, and maintain information systems as part of early warning systems with a view to ensuring that rapid and coordinated action is taken in cases of alerts and emergencies.
- (f) Establish institutional capacities to ensure that early warning systems are well integrated into government policy and decision-making processes and emergency management systems at both the national and the local levels and are subject to regular testing and performance assessments.
- (g) Implement the outcome of the Second International Conference on Early Warning held in Bonn, Germany, in 2003, including the strengthening of coordination and cooperation among all relevant sectors in the early warning chain to achieve fully effective early warning systems.
- (h) Implement the outcome of the Mauritius Strategy for the further implementation of the Barbados Program of Action for the sustainable development of small islands and developing states, including establishing and strengthening effective early warning systems as well as other mitigation and response measures.

(iii) Capacity

- (i) Support the development and sustainability of the infrastructure and scientific, technical and institutional capacities needed to research, observe, analyze, map and where possible forecast natural and related hazards, vulnerabilities and disaster impacts.
- (j) Support the development and improvement of relevant databases and the promotion of full and open exchange and dissemination of data for assessment, monitoring and early warning purposes, as appropriate, at international, regional, national and local levels.
- (k) Support the improvement of scientific and technical methods and capacities for risk assessment, monitoring and early warning through research, partnerships, training and technical capacity-building. Promote the application of in situ and space-based earth observations, space technologies, remote sensing, geographic information systems, hazard modeling and prediction, weather and climate modeling and forecasting, communication tools and studies of the costs and benefits of risk assessment and early warning.
- (l) Establish and strengthen the capacity to record, analyze, summarize, disseminate and exchange statistical information and data on hazards mapping, disaster risks, impacts, and losses; support the development of common methodologies for risk assessment and monitoring.

(iv) Regional and emerging risks

- (m) Compile and standardize, as appropriate, statistical information and data on regional disaster risks, impacts and losses.
- (n) Cooperate regionally and internationally, as appropriate, to assess and monitor regional and trans-boundary hazards and exchange information and provide early warnings through appropriate arrangements such as those relating to the management of river basins.
- (o) Research, analyze and report on long-term changes and emerging issues that might increase vulnerabilities and risks or the capacity of authorities and communities to respond to disasters.

This section is extracted from the declaration and Framework for Action Plan, which is available for download at the UN-ISDR website at: www.unisdr.org.

Regional workshop to review current capacity building initiatives in Asia and the Pacific

The Asian Disaster Preparedness Center is currently undertaking a study of key capacity building initiatives in Asia and the Pacific. The objective is to identify documents and assess the effectiveness of capacity building activities underway and recommend additional activities that will enhance the capacity of developing country institutions and individuals to effectively respond to disasters. The countries covered under the current study are: Bangladesh, Bhutan, Cambodia, India, Indonesia, Lao PDR, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, and Vietnam,

A regional workshop scheduled for May 5-6, 2005 will bring together representatives from a wide spectrum of organizations from the countries covered in the study. The workshop participants will review the effectiveness of the strategy of disaster management and recovery and also outline specific steps that can be taken to increase capacities of institutions in Asia to better respond to humanitarian emergencies. A survey was conducted prior to the workshop to seek further clarification and inputs from the different organizations in the study countries.

The project is implemented in collaboration with the School of Foreign Services at Georgetown University and the Institute of International Migration, USA, with financial support from the Bill and Melinda Gates Foundation. Latin American and African partners are: the Center for Latin American Studies, the African Studies Program and the Center for Contemporary Arab Studies.

For more details write to Mr NMSI Arambepola, Director and Team Leader UDRM Team at arambepola@adpc.net or Mr Rajesh Sharma, Project Manager at rajesh@adpc.net

Workshop on Mitigating Damage to Health Facilities, Jakarta, Indonesia

Over 100 people are expected to participate in a Workshop on Mitigation of Damage in Health Facilities to be held in Jakarta, Indonesia at a date yet to be announced. The participants are government officials from the Ministry of Health, donor and bilateral agencies, hospital administrators, engineers, architects, and NGOs involved in the post-tsunami reconstruction and rehabilitation program in Aceh, Indonesia. The workshop is being conducted in collaboration with the South East Asia Regional Office of the World Health Organization (WHO-SEARO) and the Asian Disaster Preparedness Center.

The main objectives of the workshop are to:

- promote the adoption of mitigation measures to reduce damage to health facilities from natural disasters in the future, and
- include the concept of vulnerability reduction in reconstruction projects following the tsunami.

The workshop agenda will cover Indonesia's current legal and institutional framework, scientific capacities and resources, mitigation of damage to health facilities, a review of the WHO/WB guidelines for new facilities and a review of health reconstruction projects by participating agencies, how to integrate mitigation measures into rehabilitation and reconstruction projects, and the need for technical support and guidance. Steps to ensure vulnerability reduction to future disasters, the role of engineering auditing firms and mitigation in the broader context of disaster reduction and preparedness in the health sector will also be part of the discussion.

Conclusions and recommendations from an upcoming WHO Global Lessons Learned conference in Phuket, Thailand on May 6-8, 2005 will also be shared at the workshop and it is expected to shape rehabilitation efforts particularly in regard to health facilities in all the countries affected by the Indian Ocean tsunami.

For more details contact Dr Marcel Dubouloz, Director, Public Health in Emergencies Team at marcel@adpc.net

Advisory Panel Meet to Shape RCC Project on Advocacy and Capacity Building for MDRD

Eleven members of the Regional Consultative Committee (RCC) have been invited to serve on the advisory panel to help guide the implementation of the RCC program on Mainstreaming Disaster Risk Reduction into Development Policy, Planning and Implementation (MDRD). The first meeting of the MDRD Advisory Panel was convened in Bangkok on March 23-24, 2005. The meeting will be attended by special invitees from partner and donor organisations, development banks and UN Agencies and will be an input to the fifth RCC meeting in May 2005.

The RCC project on "Advocacy and Capacity Building for Mainstreaming Disaster Risk Management in Development Practice" was a direct outcome of the 4th Annual Regional Consultative Committee meeting held in Dhaka, Bangladesh. With core funding from the Australian Government (AusAID), the two key objectives of the project are:

- to increase awareness of and political support for the adoption of a comprehensive approach to disaster risk management and mainstreaming disaster risk management processes into development practice in the RCC member countries, and
- to enhance the capacity of National Disaster Management Systems to develop and implement national plans to mainstream Disaster Risk Management into ongoing national development work.

The project promotes adoption of a variety of good-practice disaster risk management processes that are linked to successful experience within the region. A key impact of the project is to consolidate acceptance of the need for a new approach to disaster risk management and pave the way for a change in the way disaster risks are currently viewed and managed. The project also hopes to create a critical mass of advocates and champions for Mainstreaming Disaster Risk





Participants at the MDRD Meeting

Management (MDRM), a greater willingness to consider MDRM in regional and national development agendas, and the adoption of MDRM curricula and training materials.

The fifth meeting of the RCC on disaster management will be held from May 18-20, 2005 in Hanoi, Vietnam. It will be co-hosted by the Government of Vietnam and coincides with the observation of Vietnam National Day for Disaster

Management. More than 50 delegates made up of heads of national disaster management offices from 25 countries in the Asia and Pacific Region and observers from UN Agencies, donors and ADPC partners will participate in the meeting. Special sessions will include a review of the outcome of the World Conference on Disaster Reduction (WCDR), the Hyogo Framework for Action, country and regional plans for implementation, and identifying requirements for assistance.

The report of the fourth meeting of the RCC is available online at www.adpc.net

For more details write to Loy Rego, Director and Team Leader, Disaster Management Systems at ajrego@adpc.net or Dr Kai Kim Project Coordinator at kaikim@adpc.net

MDRD Project Formally Registered at the Second UN-ISDR World Conference on Disaster Reduction (WCDR)

The WCDR provided ADPC an opportunity to showcase examples of our work in the region and to consolidate our partnerships with national, regional and international disaster management organizations and various UN and donor organizations. As an active member of the UN Inter-Agency Task Force (IATF) on Disaster Reduction, ADPC made significant contributions to the preparations for the WCDR, as a member of the Working Group, and during the conference in the thematic segments, public forum, exhibitions and post WCDR partnerships.

Thematic segments consisted of three high level Round Tables, two Regional Sessions and approximately 50 Parallel Sessions in which ADPC staff were directly involved, made presentations, or were asked to make floor contributions. H.E. Cora de Leon, Vice Chair of the ADPC Board, was one of seven panelists in Round Table 2 and spoke on the topic: From Victims to Victors Education: Key to Disaster-Resilient Communities. Dr Suvit Yodmani, ADPC Executive Director, chaired the regional plenary session titled Geographical proximity - common threats. ADPC and members of the ISDR Asia Partnership organized an Asia Regional Session, which ADPC co-facilitated. ADPC's work was also identified by the ISDR Secretariat and the European Commission Humanitarian Aid Office (ECHO) as one of 24 initiatives displayed in an ECHO/ISDR 'good practices for resilient communities' exhibit at the Public Forum.

During the conference, Issue 1 of the ISDR Asia Informs, a newsletter of the ISDR Asia Partnership, was released. As one of the focal points in Asia, ADPC plays a key role in the production of the publications. Two versions were released, one in English and one in Mandarin.

One significant contribution to the Outcomes of the WCDR was the launching of the Regional Consultative Committee program on Mainstreaming Disaster Risk Management into Development Policy, Planning and Implementation (MDRD) through the presentation of the program at several sessions of WCDR and the publication of the program brochure, which was distributed widely to stakeholders during the WCDR in Kobe 2005. This program will contribute to the implementation of the Hyogo Framework of Action (Section 4B, Paragraph 30) by national governments through its successful registration as one of the first two Post-WCDR Partnerships with the UN Commission for Sustainable Development (CSD).

ADPC plans to play an active role in supporting the implementation of the Hyogo Framework of Action (HFA). One supporting event will be the inclusion at the RCC5 of a Special Consultative Session for the Asian Region on the Implementation of the HFA, adopted at WCDR and co-organized with ISDR and UNDP. This session will consist of separate discussions on (i) National Plans for HFA Implementation, (2) Establishment of National Platforms on Disaster Reduction, and (3) Expectations from ADPC, ISDR Partnership and other regional partners in the implementation of the Hyogo Framework of Action.

Afghan Officials Discuss Disaster Risk Management Curriculum

A national curriculum adaptation workshop for Afghanistan was held February 1-2, 2005 under the Training and Capacity Building Project (TCBP). The Project is jointly implemented by ADPC and InWent (Capacity Building International, Germany). Thirty-six officials and staff representing member ministries of the National Commission on Emergency Management including the Department of Disaster Preparedness (DDP), Ministry of Defense, Interior, Health, Repatriation and Return, Energy and Water Resources, UN agencies, NGOs, Afghan Red Crescent Society (ARCS), UNHABITAT, TEARFUND, AIMS-UNDP, BIA and MAAFS participated in the Workshop.

The workshop was inaugurated by Mr. Ibadi, the Head of the Department for Disaster Preparedness (DDP). The ADPC and InWent teams provided ideas on developing the curriculum for all seven courses planned for Afghan officials. The curriculum was developed with the full participation of the participants and emphasized the need for integrating local knowledge, translating materials into the Pashtu and Dari languages and encouraging the participation of women officials and staff in training. It also emphasized the need for an exercise-based curriculum and recommended the participation of multiple Afghan government agencies in each course to avoid over- or under-representation of any department or agency.

The Training and Capacity Building Project (TCBP) is a national capacity building project for Afghanistan. It is a sub-project under the Comprehensive Disaster Risk Management Program (CDRMP) being implemented by the United Nations Assistance Mission to Afghanistan (UNAMA). The CDRMP is being sponsored by the Afghan Emergency Trust Fund (AETF). The CDRMP consists of a number of sub-projects covering the most pressing needs in the Afghan Disaster Risk Management Sector.

A series of 13 courses will be delivered in Kabul at the Office of the Department of Disaster Preparedness, beginning with the Disaster Management Course and the Emergency Response Management Course scheduled to take place from March 19 to April 7, 2005.

For details please write to Zubair Murshed, Project Manager, Afghanistan TCBP at mzubair@adpc.net

CBDRM Course for the Pacific Developed with ADPC Expertise

In close collaboration with the South Pacific Applied Geo-science Commission (SOPAC), Fiji, ADPC pilot-tested a community-based disaster risk management course for the Pacific from February 13-25, 2005 in Nadi, Fiji. Participants from various national and provincial government departments with disaster risk management responsibilities, regional and national NGOs, and representatives from SOPAC and IFRC attended the course.

The objectives of the pilot course were:

- to examine various models of disaster risk management and their relevance to the Pacific,
- to design and conduct community-based disaster risk assessment in the Pacific context,
- to identify measures for hazard and vulnerability reduction and community capacity building in selected communities in Fiji, and
- to prepare a model risk-reduction plan for integration into Fiji development activities.

Participants were asked to review each session in detail. Pacific protocols, social relations and structures that shape the decision making process were closely examined during the course. As a practical onsite experience, the participants spent 2 days with the community in Sanasana village. Here they were able to adapt classroom knowledge of CBDRM tools and processes in a practical setting. This helped contextualize CBDRM processes to the Pacific perspective. Participants enjoyed sharing experiences and perspectives with other members of the group and resource persons who have worked with many communities in the region.

This course will be offered in other countries in the Pacific region and will focus on the key stakeholders in the CBDRM process.

For more details write to Mr Steve Banks at steve@adpc.net

CASITA-II Integrating Disaster Mitigation Tools into Higher Education

The second phase of the Capacity Building in Asia Using Information Technology Applications (CASITA-II) project started with a kick-off workshop at ITC, The Netherlands on February 14-15, 2005. The workshop was well attended by representatives of the three project partners, ADPC, ITC and Bonn University from Germany, and the course coordinators of the four participating universities, along with experts on tsunami modeling and landslide hazard assessment from the Norwegian Geo-technical Institute and the International Centre for Geohazards, both from Norway.



Participants at the workshop cum training on multi-temporal satellite image processing and analysis of the december 26, tsunami event

Subsequently, a Workshop on Tsunami Wave Modeling & Multi-temporal Satellite Image Processing and Analysis of the Impact of the December 26th Event was held from March 28 to April 1 in Bangkok, Thailand. The objective of the workshop was to provide the participants with an opportunity to acquire skills in earth

observation and flood zoning of the tsunami damaged shore zones of the Indian Ocean. During the workshop there was a demonstration on how to process and interpret some of the available high- and medium-resolution satellite images of the pre- and post tsunami landscape. The aim is to make a tsunami flood zone map for strategic shore zone management for reconstruction.

Building on the experiences of the first phase and the needs expressed by the universities, the second phase aims at developing postgraduate level courses on disaster management with emphasis on research capacity. It is expected that collaboration between European institutions and Asian universities will help enhance research skills and the formulation of joint research programs. In this phase, the project also aims to develop and implement a distance education course which meets the needs of professionals and practitioners who want to learn more about natural hazard and risk assessment in Asia.

The four universities participating in CASITA II are:

- The Indian Institute of Remote Sensing, Dehradun, India
- Gadjah Mada University, Yogyakarta, Indonesia
- Chiang Mai University, Thailand
- University of Ruhuna, Sri Lanka

Starting with a network of 14 universities in Asia, CASITA has been successful in integrating modern disaster mitigation tools into higher education curricula as a means of helping reduce disaster vulnerability of human settlements. Implemented in partnership with the International Institute for Geo-Information Science and Earth Observation (ITC) from Enschede, The Netherlands and the Ecole National de Sciences Geographiques (ENSG), in Paris, France, the first phase activities included training for university staff on the use of Remote Sensing and GIS tools for hazard and risk assessment, course modules on several disaster related topics, and assistance to each university in developing RS/GIS based case studies for different hazards in their respective countries.

The CASITA-II project will run for 2 years.

For more information, please contact Mr. Rajesh Sharma rajesh@adpc.net and Prof. Cees van Westen westen@itc.nl or visit the project website at <http://www.adpc.net/casita>

Recent Events



ADPC hosted lunch for children & adults from southern Thailand affected by the tsunami, February 11, 2005



5th ADPC Board of Trustees Meeting, April 5, 2005



ADPC-AIT Signing the Memorandum of Understanding, March 23, 2005



Expert meetings on establishing an end-to-end early warning system, March - April



Practitioners' Workshop on Disaster Risk Management in Asia Primer, April 2, 2005



Selected Internet Resources

<http://www.fews.net/>

The Famine Early Warning System (FEWS NET) provides early warning and vulnerability information to African countries to help them manage threats to food security. Various data and information from remote sensing and ground-based meteorology systems are used as indicators of potential threats to food security. The site disseminates the information through alerts and monthly reports. Interactive maps and information on livelihoods and planning are also available.

<http://www.fao.org/waicent/faoinfo/economic/gIEWS/english/index.htm>

FAO's Global Information and Early Warning System on Food and Agriculture for Africa (GIEWS) provides regular bulletins on food crop production and markets at the global level and situation reports on a regional and country level. The system aims to provide policy-makers and policy-analysts with the most up-to-date information available on all aspects of food supply and demand and warnings of imminent food crises so that timely interventions can be planned.

http://www.newsweb.org/home_page/default.asp

Humanitarian Early Warning Services is a portal to information on hazards for humanitarian agencies. It includes pages on drought, floods, storms, locust swarms, volcanoes, earthquakes, weather, El Niño, tsunamis and socio-political developments. Although HEWSweb currently covers mainly natural disasters, in its next development phase we can expect to see more socio-political pages.

<http://ioc.unesco.org/itsu/>

International Coordination Group for the Tsunami Warning System in the Pacific, hosted on the IOC-UNESCO website, brings together tsunami watches and warning and advisory bulletins disseminated throughout the Pacific. The site offers information on meetings, training programs, publications, past disasters and related links.

<http://www.prh.noaa.gov/ptwc/>

The Pacific Tsunami Warning Center provides tsunami warnings to most countries in the Pacific Basin as well as Hawaii and all other US interests in the Pacific outside Alaska and the US West Coast, which are served by the West Coast/Alaska Tsunami Warning Center (WC/ATWC) in Palmer, Alaska. The Pacific Center issues three bulletins: Pacific-wide Tsunami Warning Bulletin, Regional Tsunami Warning/Watch Bulletin, and Tsunami Information Bulletin. The website hosts bulletins, tsunami information and links to relevant organizations and resources with interactive maps providing weather forecasts.

<http://www.pagasa.dost.gov.ph/>

Philippines Atmospheric, Geophysical & Astronomical Services Administration (PAGASA) provides forecasts for typhoons, floods, droughts, giant waves, and high seas. The website also hosts real-time weather forecasts, shipping advisories, tropical cyclone updates, information on flood forecasts and learning tools for meteorology.

<http://www.unisdr.org/ppew/>

The UN ISDR Platform for the Promotion of Early Warning started operating in 2004 and hosts an array of information on early warning including information resources, upcoming events, relevant links, an inventory of early warning systems and links to current warning events. The program seeks to aid the development of early warning and preparedness systems by (i) advocating for better early warning systems, especially in development assistance policy and programs, (ii) collecting and disseminating information on best practices, and (iii) stimulating cooperation among early warning actors and the development of new ways to improve early warning systems.

<http://www.riskinstitute.org/>

Public Entity Risk Institute (PERI) website aims to connect users with the knowledge, resources and information they need to help address risk management challenges. A number of useful publications, tools and resources are available on the site. The site recently hosted a five day virtual symposium on Early Warning Systems; Interdisciplinary Observations and Policies from a Local Government Perspective, to discuss ways of getting the most useful and effective early warning systems in place.

Recent Publications

These publications may be of interest to our readers. ADPC Library and Information Center can offer assistance in locating them.

After the Tsunami: UNEP's Rapid Environmental Assessment Report. United Nations Environment Programme, 2005, ISBN 9-2807-2565-3, US\$20.00. Order online at www.earthprint.com or write to orders@earthprint.com

The destruction caused to the environment by the Asian tsunami offers an opportunity to rebuild in a manner that preserves natural resources for the benefit of the local communities who were hardest hit. This report is based on surveys by UNEP teams in the field working with other UN agencies, governments and non-governmental organizations in the affected tsunami regions. It looks at how regions are rebuilding and how future tragedies can be avoided by adequate planning. The report covers topics such as waste, water supply, sanitation and soil fertility, coral reefs, mangroves, wildlife, beach erosion and coastal vegetation.

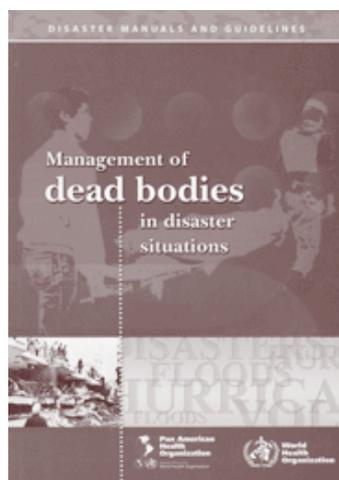
Know Risk. United Nations International Strategy for Disaster Reduction, 2005, ISBN 9-2113-2024-0, UN Sales Number E.04.III.M.1, Tudor Rose, US\$125. Order online at www.know-risk.org or contact Know Risk, Tudor Rose, Tudor House, 6 Friar Lane, Leicester, LE1 5RA, UK, Tel: +44(0) 116 2229900, Fax: +44(0) 116 2229901

Know Risk is a fully illustrated publication with contributions from over 160 authors relating their work in disaster reduction at international, regional, national, municipal and local levels. Commentaries under 15 sections cover a range of themes and issues. This commemorative publication reflects over ten years of progress in this field, highlighting good practices and drawing on the ISDR coordinated review of the Yokohama Strategy and Plan of Action for a Safer World (1994). It emphasizes the benefits of experience leading to future actions and institutional commitments to disaster reduction.

Mainstreaming Gender in Environmental Assessment and Early Warning. United Nations Environment Programme, 2005, ISBN 9-2807-2487-6, 82 pp, US\$25.00. Order online at www.earthprint.com or send an email to orders@earthprint.com

This report seeks to understand key questions

relating to gender mainstreaming in UNEP's early warning and assessment program. It contains reviews of the current situation and provides recommendations. It also analyses key issues in the areas of gender and the environment as they relate to water, poverty, security, conflict, early warning, disaster and vulnerability to environment change.



Management of Dead Bodies in Disaster Situations. Pan American Health Organization, 2004,

ISBN 9-2751-2529-5, 203 pp. US\$28.00/20.00 (only for Latin America and the Caribbean). Order code: OP 164 <http://publications.paho.org> or via email to: Ms Mylena Pinzon pinzonmi@paho.org

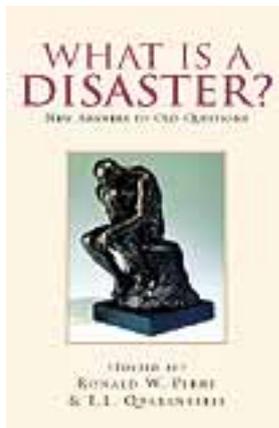
This timely and useful manual from the Pan American Health Organization provides technical information needed to support State authorities in the proper management of bodies. This manual will be of interest to specialists in disasters and in the management of human remains, and especially national or local authorities who are responsible for ensuring that bodies are treated in a dignified manner and that the human rights of those affected by disasters are respected.

Developing Tsunami-Resilient Communities. The National Tsunami Hazard Mitigation Program, Bernard, E.N. (Ed.), March 2005, ISBN: 1-4020-3353-2, Springer, VI, 186 p., Euro 77.00 (prepublication price). Order online at: <http://www.springeronline.com/>

Tsunamis remain an ever-present threat to lives and property along the coasts of most of the world's oceans. Because of the geographical extent of U.S. coastlines, an earthquake in Alaska can generate a local tsunami for Alaskans and, hours later, a distant tsunami for communities in Hawaii and along the Pacific Coast. This volume chronicles the development and accomplishments of a joint State/Federal partnership that was forged to reduce tsunami hazards along U.S. coastlines - the National Tsunami Hazard Mitigation Program. By integrating hazard assessment, warning

Bookmarks.





guidance, and mitigation activities, the program has created a roadmap and a set of tools to develop communities more resilient to local and distant tsunamis. Among the set of tools are tsunami forecasting, educational experiments, early alerting systems, and design guidance for tsunami-resilient communities.

What is a Disaster? New Answers to old questions. R.W. Perry and E.L. Quarantelli, Editors 2005, 442 Pages. Hardback ISBN 1-4134-7986-3. US \$34.99. Paperback ISBN 1-4134-7985-5. US \$24.99 plus shipping costs. From Xlibris Publishers, International Plaza II, Suite 340, Philadelphia, PA 19113 USA, Tel:+1-888-795-4274. Orders@Xlibris.com 10% discount on orders through Xlibris.

This volume addresses the most basic question in the field: that of defining the phenomenon of study. It brings together twelve social scientists representing eight disciplines and seven countries to share their definition and vision of disasters. In the process, a wide range of views are expressed and issues raised regarding the relationship of academic versus practical definitions, the impact of grouping types of disasters in different ways, and the epistemologies on which theoretical growth should rest. The forum provided involves the presentation of each author's views, followed by a discussant's critique, and closed with a response from the author. The editor's close the volume with discussions of the theoretical framework of disaster research and an agenda for disaster research in the twenty-first century.

Integrating Disaster Reduction into Development: Overcoming the Barriers

As the human and financial costs of disasters triggered by natural hazards continues to rise, decade by decade, disasters are increasingly being recognised as a threat to sustainable development, poverty reduction initiatives and the achievement of a number of the Millennium Development Goals. Despite this, many development organisations remain reluctant to pursue disaster risk reduction as a key objective, or even to protect their own projects against potential hazards.

A new study (Charlotte Benson and John Twigg, "Measuring Mitigation". Methodologies for assessing natural hazard risks and the net benefits of mitigation - a scoping study (Geneva: ProVention Consortium) December 2004), concludes that some technical obstacles can be overcome without great difficulty. Part of a project by the ProVention Consortium, the study shows that many of the standard tools used in designing development projects - such as environmental appraisal, economic appraisal, vulnerability and social analysis, risk assessment and logframe analysis - can be used or readily adapted to assess risks from natural hazards and the potential benefits of mitigation options. Another key finding is that monitoring and evaluation is still relatively neglected in disaster reduction work. There is also still too much emphasis on assessment of activities and outputs, rather than impacts. Failure at the project planning stage to provide baselines and clarify the structure of a project's objectives, outcomes, outputs and activities also handicaps evaluation by making it difficult to identify progress and causality.

The study concludes by making a number of recommendations to practitioners and policy makers that will help them to improve their approach to appraisal and evaluation. A new phase of the project is about to begin. This will produce a set of short guidance notes on specific project and country program level appraisal and planning tools, together with a more detailed handbook on monitoring and evaluating disaster reduction projects. These materials will become available during 2005-6. Progress updates will be published on the ProVention Consortium's website.

The full report, a shorter synthesis report and a policy brief are available free of charge from the ProVention Consortium. Electronic copies can be downloaded from the project's web page (www.proventionconsortium.org/projects/methodology_assess.htm); printed copies are available on request by writing to provention@ifrc.org

ADPC Monthly UPDATE

In response to the increasing demand for information on our activities and programs, ADPC has been sending out a monthly update since October 2004. The update goes out to over 1500 subscribers and provides news on projects, workshops and training courses offered by the Asian Disaster Preparedness Center. To subscribe to this service, send a blank email to: <adpc-announce-subscribe@yahoo.com>. For additional information, please contact ADPC at: adpc@adpc.net

Dear Readers,

One important aspect of the Indian Ocean Tsunami of December 2004 was that the event took everyone by surprise, especially those living in the coastal areas in the countries in the region. Lack of awareness and an ineffective mechanism to warn coastal communities of the impending disaster was one of the chief reasons for the enormous loss of lives and the devastation. In this issue of the Asian Disaster Management News we focus on Early Warning for Natural Disaster Management and share some of the experiences and insights from several experts in disaster management. The ADPC position on the development of an EWS for the Indian Ocean has stressed the need to employ a multi-hazard approach to whatever system emerges from the current deliberations and to define roles and responsibilities for the same. Evidence of the need for a broader EWS was made clear after the most recent earthquake measuring 8.7 on the Richter scale devastated Nias and did not produce a tsunami.

Editor's corner . . . In our theme article, Dr Parker provides a theoretical perspective for the establishment of an effective early warning system, while Prof Allen Jeary's article provides insights into early warning of structural collapse after a disaster. Humanitarian agencies, aid workers and the media have been very active since the tsunami and the two subsequent articles by Mr Walden and Mr Kjaergaard highlight the challenges they are facing.

This first quarter of 2005 has been extremely busy and challenging for ADPC and this is reflected in the reports from our teams and units. Our sincere appreciation is extended to Mr A.R. Subbiah, Director and Team Leader of ADPC's Climate Risk Management Team, for his invaluable guidance on the overall theme of this issue. We hope you find this newsletter informative and interesting. The next issue will focus on recovery and lessons learned from the



tsunami. We look forward to receiving your articles, comments and suggestions.

Earl Kessler
ekessler@adpc.net

Theme for Forthcoming Issue of the Asian Disaster Management News Disaster Recovery (April-June 2005)

This publication is made possible through the generous support of ECHO and AUSAID.



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Asian Disaster Management News is published quarterly by the Asian Disaster Preparedness Center, to serve as a channel of communication and source of information for disaster managers in Asia and the Pacific. For further information please contact: Information and Knowledge Manager, Asian Disaster Preparedness Center, P O Box 4, Klong Luang, Pathumthani 12120, Thailand. Tel: (66-2) 516-5900-10, Fax: (66-2) 524-5360, E-mail: ambika@adpc.net. This publication is also available on the World Wide Web at: <http://www.adpc.net/infores/newsletter/newsletter.html>