



Asian Disaster Preparedness Center (ADPC), is organizing the workshop in partnership with CITYNET, Institute of Technology Bandung (ITB), Indonesia, National Coordinating Board for Disaster Management (BAKORNAS PBP), Indonesia, UNDP's The Urban Governance Initiative (TUGI), UN's International Strategy for Disaster Reduction (ISDR) and United States Agency for International Development (USAID).



CITYNET, the Regional Network of Local Authorities for the Management of Human Settlements promotes cooperation on local urban improvement initiatives in the Asia and the Pacific regions. Members are from 130 urban organizations, including national and local governments, development authorities, NGOs and research and training institutes from more than 70 cities in 20 countries.



TUGI is a project developed and funded by the United Nations Development Programme (UNDP). The project is a response to UNDP's continuous commitment to work on urban issues, building upon its earlier investment and insights from the Urban Management Programme for Asia and the Pacific (UMPAP) and the Asia Pacific 2000 (AP2000). TUGI aims at assisting local authorities in improving the urban quality of life through strengthening capacities, promoting good governance principles and enhancing the tools available to urban administrators and decision-makers.



Institute of Technology Bandung (ITB), Indonesia is the foremost scientific university in Indonesia. Partnering with Asian Urban Disaster Mitigation Program, it is implementing the Indonesia Urban Disaster Mitigation Project (IUDMP) which aims to reduce the vulnerability of Indonesian cities to earthquake hazards.



National Coordinating Board for Disaster Management (BAKORNAS PBP), Indonesia is a coordinating body that handles complex emergencies and disaster management. One of the important roles of BAKORNAS PBP is the formulation of policies for disaster and refugees management.



International Strategy for Disaster Reduction (ISDR) was founded under the United Nations as the successor arrangement to the International Decade for Natural Disaster Reduction (IDNDR, 1990-1999). It is designed to respond proceed from protection against hazards to the management of risk through the integration of risk reduction into sustainable development.



United States Agency for International Development (USAID) is an agency that provides economic, development and humanitarian assistance around the world in support of the foreign policy goals of the United States. USAID is currently supporting the implementation of ADPC's Asian Urban Disaster Mitigation Program.

The Asian Disaster Preparedness Center (ADPC) is a regional resource center dedicated to disaster reduction for safer communities and sustainable development through disaster reduction in Asia and the Pacific. Established in 1986 in Bangkok, Thailand, ADPC is recognized as an important focal point for promoting disaster awareness and developing capacities to foster institutionalized disaster management and mitigation policies.

The Asian Urban Disaster Mitigation Program (AUDMP) is an eight-year program designed to reduce the natural disaster vulnerability of urban populations, infrastructure, critical facilities and shelters in Asian cities. AUDMP aims to demonstrate the importance of and strategic approaches to urban disaster mitigation as part of the urban development planning process. AUDMP projects are being implemented in 10 countries – Bangladesh, Cambodia, India, Indonesia, Lao PDR, Nepal, Philippines, Sri Lanka, Thailand and Vietnam.

For more information about ADPC and AUDMP, please visit ADPC's website at www.adpc.ait.ac.th

**Regional Workshop on Best Practices
in Disaster Mitigation**

**Lessons Learned from the Asian Urban
Disaster Mitigation Program
and other initiatives**

**24-26 September 2002
Bali, Indonesia**

Organized by

Asian Disaster Preparedness Center

CITYNET

Institute of Technology Bandung, Indonesia

National Coordinating Board for Disaster Management, Indonesia

The Urban Governance Initiative, UNDP

UN International Strategy for Disaster Reduction

United States Agency for International Development

The Regional Workshop on Best Practices in Disaster Mitigation: Lessons Learned from the Asian Urban Disaster Mitigation Program and other initiatives was held from 24 to 26 September 2002 in Bali, Indonesia. The workshop aimed to share knowledge, experiences and lessons learned on the AUDMP and showcase other disaster mitigation initiatives of city governments, non-governmental organizations and United Nations agencies. Set in the context of total disaster risk management, the workshop focused on eight themes fundamental to urban disaster mitigation, namely: (i) Policy, Legal and Institutional Arrangements; (ii) Hazard Mapping and Risk Assessment; (iii) Capacity Building; (iv) Mitigation Planning and Implementation; (v) Promoting Safer Building Construction; (vi) Community-Based Approaches to Disaster Mitigation; (vii) Climate Applications and Preparedness; and (viii) Public Awareness and Social Marketing.



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FOREWORD

I am pleased to present to you the proceedings of the Regional Workshop on Best Practices in Disaster Mitigation held from 24-26 September 2002 in Bali, Indonesia. The proceedings is compiled of knowledge, experiences and lessons learned from ADPC's Asian Urban Disaster Mitigation Program (AUDMP) and other disaster mitigation initiatives undertaken by a range of organizations in the region. It includes informative papers from resource persons, AUDMP country partners and participants from different organizations on a range of cross-cutting themes fundamental to disaster mitigation.

Since its establishment in 1986, ADPC has worked closely with various national and local governments, regional and international agencies, and non-government organizations to advocate for and build capacity in mitigating disasters. To respond to the need for safer cities, the AUDMP was developed in 1995 with core funding from USAID's Office of Foreign Disaster Assistance (OFDA). AUDMP aims to demonstrate the importance of and strategic approaches to urban disaster mitigation as part of the urban development planning process. ADPC implements the AUDMP with an extensive coalition of partner organizations, including local and national government agencies, non-governmental organizations, academic institutions and others to provide working examples of urban disaster mitigation in selected cities of ten countries. The ten countries are Bangladesh, Cambodia, India, Indonesia, Lao PDR, Nepal, Philippines, Sri Lanka, Thailand and Vietnam.

This experience has helped ADPC in facilitating and providing several platforms to bring together policy and decision makers, planners, practitioners, managers, scientists, academicians and experts in the field of disaster management in the context of total disaster risk management. This regional workshop provided a unique opportunity for a multi-disciplinary group of more than 150 participants from 20 countries from within and outside Asia to share strategies and approaches to disaster mitigation derived from analyses of real-life experiences, good practices and lessons learned in Asia. It is in line with ADPC's strategy to promote knowledge-sharing networks and partnerships for the replication of disaster mitigation practices worldwide.

Some of the other recent regional initiatives of ADPC are the Regional Consultative Committee (RCC), one of whose main objective is to promote and facilitate regional cooperation among disaster management focal points of national governments in Asia, the seminar on Policies, Legal and Institutional Arrangements for Disaster Management, and the Regional Workshop for the Development of the ASEAN Regional Program on Disaster Management. Through these mechanisms ADPC hopes to facilitate a process of sharing and learning among institutional stakeholders thereby promoting collaborative efforts towards building safer communities. The outputs of this workshop has been shared at regional platforms such as the RCC and the ASEAN Experts Group in Disaster Management (AEGDM).

At ADPC, we believe that no one organization or institution alone can design, fund, manage and implement the broad range of projects and activities necessary for a comprehensive disaster mitigation program. If mitigation policies and measures are to be made effective, it is vital that a broad constituency for mitigation is built and sustained through continuous awareness promotion, capacity building and mutual collaborations.

I would like to take this opportunity to thank each and everyone involved in making this workshop happen. The organization of this workshop would not have been possible without the invaluable support of USAID/OFDA. I would like to express my sincere appreciation to ADPC's active co-organizers: CITYNET, Institute of Technology Bandung (ITB), the National Coordinating Board for Disaster Management (BAKORNAS PBP), the United Nations Development Program's The Urban Governance Initiative (TUGI), the United Nations's International Strategy for Disaster Reduction (ISDR) and all other partners who have actively contributed to making this workshop a success. I would also like to thank all resource persons who have helped develop and facilitate a thematic framework for the workshop. This publication would not have been possible without the efforts of Ms. Ambika Varma, Information Coordinator, ADPC. Thank you.

It is our hope that future disaster mitigation programs and activities will benefit from this contribution and this publication will be useful in replicating success.

Dr. Suvit Yodmani,
Executive Director
Asian Disaster Preparedness Center
Bangkok, Thailand

November 2002

LIST OF ACRONYMS

ADB	Asian Development Bank
ADPC	Asian Disaster Preparedness Center
AMC	Ahmedabad Municipal Corporation
ASC	Asian Seismological Commission
ASEAN	Association of South East Asian Nations
ASMC	ASEAN Specialized Meteorological Center
AUDA	Ahmedabad Urban Development Authority
AUDMP	Asian Urban Disaster Mitigation Program
BAKORNAS PBP	National Coordinating Board for Disaster Management in Indonesia
BAPPENAS	National Development Planning Board in Indonesia
BAPPEDA	Local Agency for Development Planning (Municipality of Bandung)
BDAT	Barangay (village) Disaster Action Team
BUDMP	Bangladesh Urban Disaster Mitigation Project
CARE/DMP	Disaster Management Project of CARE
CARE	Cooperation Assistance for Relief Everywhere
CBDM	Community-Based Disaster Management
CBDMit	Community-Based Disaster Mitigation
CBDP	Community-Based Disaster Preparedness
CBFA	Community-Based First Aid
CBFMP	Community-Based Flood Mitigation and Preparedness
CBO	Community-Based Organization
CDMP	Comprehensive Disaster Management Program
CDP	Center for Disaster Preparedness
CECI	Canadian Centre for International Studies and Cooperation
CEMP	Comprehensive Emergency Management Plan
CEPT	Centre for Environmental Planning and Technology
CHPB	Centre for Housing Planning and Building
CMC	Colombo Municipal Council
CODES	Committed Organization for Development Extension Services of Tongi
CRC	Cambodian Red Cross
CRS	Catholic Relief Services
DIPECHO	Disaster Preparedness Program of the European Community
DMB	Disaster Management Bureau of the Government of Bangladesh
DMC	Disaster Management Committee
DMD	Disaster Management Department
DMSC	Disaster Mitigation Steering Committee
DPD	Disaster Preparedness Delegate
DRI	Disaster Reduction and Human Renovation Institution
DWF	Development Workshop France
ECE	Extreme Climate Events
EDM	Earthquake Disaster Mitigation Research Center
EMI	Earthquake and Megacities Initiative
EMRP	Emergency Management and Response Planning
ENSO	El Nino Southern Oscillation
EOP	Emergency Operations Plan
EVRC	Earthquake Vulnerability Reduction for Cities
FEMA	Federal Emergency Management Agency
GESI	Global Earthquake Safety Initiative
GHI	GeoHazards International
GIS	Geographical Information System
GSDMA	Gujarat State Disaster Management Authority
GUK	Gano Unnayan Kendra of Gaibandha
HMS	Hydro Meteorological Services
IDNDR	International Decade for Natural Disaster Reduction
INGO	International Non-Governmental Organization

ITB	Institute of Technology Bandung
JICA	Japan International Cooperation Agency
HMG	His Majesty's Government
HUDCO	Housing and Urban Development Corporation
IFRC	International Federation of the Red Cross and Red Crescent Societies
IRI	International Research Institute for Climate Prediction
ISDR	International Strategy for Disaster Reduction
ITB	Institute of Technology Bandung
ITC	International Institute for Geoinformation Science and Earth Observation
ITDG	Intermediate Technology Development Group
IUDMP	Indonesian Urban Disaster Mitigation Project
KOMPAK	Collaboration of Urban Disaster Mitigation Organizations
KVERMP	Kathmandu Valley Earthquake Risk Management Project
LOC	League of Cities
MARD	Ministry of Agriculture and Rural Development
MDMC	Municipality Disaster Management Committee
MEHE	Ministry of Education and Higher Education
MOEYS	Ministry of Education, Youth and Sports
MOH	Ministry of Home
MLSW	Ministry of Labor and Social Welfare
MMI	Modified Mercalli Intensity
NBRO	National Building Research Organization
NCDM	National Committee for Disaster Management
NCDMP	Naga City Disaster Mitigation Project
NCIEMS	Naga City Integrated Emergency Management System
NDMC	National Disaster Management Center
NDMO	National Disaster Management Office
NGO	Non-Governmental Organization
NIE	National Institute of Education
NIED	National Research Institute for Earth Science and Disaster Prevention
NOAA	National Oceanic and Atmospheric Administration
NSET	National Society for Earthquake Technology
NUC	Nawalapitiya Urban Council
OFDA	Office of Foreign Disaster Assistance
PACT	Private Agencies Collaborating Together
PAGASA	Philippines Atmospheric, Geophysical and Astronomical Services Administration
PBSP	Philippine Business for Social Progress
PCDMP	Philippine Cities Disaster Mitigation Project
PDMF	Philippine Disaster Management Forum
PDR-SEA	Partnership for Disaster Reduction – South East Asia
PHIVOLCS	Philippine Institute of Volcanology and Seismology
PNRC	Philippine National Red Cross
PNY	Patanka Navjivan Yojana (Patanka New Life Project)
PRA	Participatory Rapid Assessment
RCC	Regional Consultative Committee on Regional Cooperation in Disaster Management
RCV	Red Cross Volunteer
RMC	Ratnapura Municipal Council
RRA	Rapid Rural Assessment
RUDO	Regional Urban Development Office
SATLAK PB	Local Disaster Management Unit
SEEDS	Sustainable Environment and Ecological Development Society
SESP	School Earthquake Safety Program
SLIDA	Sri Lanka Development Administration
SLUMDMP	Sri Lanka Urban Multi-Hazard Disaster Mitigation Project
SSP	Swayam Shikshan Prayog
TOT	Training of Trainers

TUGI	The Urban Governance Initiative
UDA	Urban Development Authority
UDM	Urban Disaster Mitigation
UELCI	United Evangelical Church in India
UN	United Nations
UNCRD	United National Centre for Regional Development
UNDP	United Nations Development Programme
UNESCO	United Nations Educational Scientific and Cultural Organization
URI	Urban Research Institute
USAID	United States Agency for International Development
USGS	United States Geological Survey
VNRC	Vietnam Red Cross
WHO	World Health Organization
WMO	World Meteorological Organization
WSSI	World Seismic Safety Initiative

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INTRODUCTION

The proceedings present papers of the Regional Workshop on Best Practices in Disaster Mitigation held from 24-26 September in Bali, Indonesia, organized by the Asian Disaster Preparedness Center (ADPC) in collaboration with CITYNET, the Institute of Technology Bandung (ITB), the National Coordinating Board for Disaster Management (BAKORNAS PBP), the United Nations Development Program's The Urban Governance Initiative (TUGI) and the United Nations International Strategy for Disaster Reduction (UNISDR), with support from the United States Agency for International Development (USAID) Office of Foreign Disaster Assistance (OFDA).

1. Workshop Objectives

Asia is the most disaster-affected region of the world. Losses of life and property from disasters increase every year, hindering sustainable development. As population and economic activity concentrate in rapidly growing cities, urban areas become increasingly vulnerable to natural and technological disasters. Therefore, there is a growing need to make cities safer through adoption of adequate vulnerability reduction measures.

ADPC, a regional resource center dedicated to safer communities and sustainable development through disaster reduction in Asia and the Pacific, has initiated and promoted urban disaster mitigation in Asia through one of its largest regional programs, the Asian Urban Disaster Mitigation Program (AUDMP). The AUDMP was developed in 1995 with core funding from OFDA to address this need for safer cities.

The goal of the AUDMP is to reduce disaster vulnerability of urban populations, infrastructure, lifeline facilities and shelter in Asia. In an environment where good governance and decentralization are high in most countries' political agenda, AUDMP aims to demonstrate the importance of and strategic approaches to urban disaster mitigation as part of the urban development planning process.

The AUDMP supports this demonstration by building and enhancing the capacity of local authorities, national governments, development agencies, civil society groups, non-government organizations, businesses and other stakeholders in establishing public and private sector mechanisms for urban disaster mitigation as part the development process. Currently, AUDMP approaches have been introduced and sustained by partners in targeted cities of Bangladesh, Cambodia, India, Indonesia, Lao PDR, Nepal, Philippines, Sri Lanka, Thailand and Vietnam.

AUDMP also facilitates knowledge sharing and dialogue between key stakeholders to promote replication of AUDMP approaches in other cities and countries worldwide. Regional workshops can provide such a forum. With co-organizers, ADPC aims to share seven years of knowledge, experiences and lessons learned on the AUDMP and showcase other disaster mitigation initiatives worldwide at the Regional Workshop on Best Practices in Disaster Mitigation by:

- Presenting how communities, city government and civil society groups have been able to introduce and sustain measures for reducing vulnerability to natural and technological hazards.
- Imparting strategies and approaches to urban disaster mitigation derived from analyses of real-life experiences, good practices and lessons learned in Asia.
- Providing an array of proven ideas, tools, policy options and strategies for urban disaster mitigation.
- Offering a forum for knowledge sharing and networking for the replication of urban disaster mitigation practices worldwide.
- Exhibiting a range of effective urban disaster mitigation tools, activities and outputs including videos, photographs, publications, case studies and posters.

This regional workshop attended by more than 150 participants from 20 different countries include: mayors, political leaders, municipal commissioners, national and provincial ministries, elected representatives from cities and towns, urban development planning authorities, emergency response agencies, relief and rehabilitation agencies, private sector corporations, United Nations agencies, donor agencies, non-governmental organizations, training and research institutes. The workshop provided a unique opportunity to share experiences from all over the world, learn lessons and replicate best practices.

2. Workshop Approach and Methodology

Set in the context of total disaster risk management, the workshop included presentations and panel discussions on the following eight themes fundamental to urban disaster mitigation:

- Policy, Legal and Institutional Arrangements
- Hazard Mapping and Risk Assessment
- Capacity Building
- Mitigation Planning and Implementation
- Promoting Safer Building Construction
- Community-Based Approaches to Disaster Mitigation
- Climate Applications and Preparedness
- Public Awareness and Social Marketing

For each theme there was a resource person who provided a conceptual framework for the theme, analyzed existing initiatives on the theme, facilitated the panel discussion and presented a paper on the above theme. In each panel discussion, the important linkages and the relationships between each theme was emphasized. Experts were invited to write and present case studies that highlight the experiences, knowledge and lessons learned from executing urban disaster mitigation initiatives. In some cases, papers were not available for inclusion in the proceedings.

3. About the Themes

Mitigation refers to measures, which can be taken to minimize the destructive and disruptive effects of hazards and thus lessen the magnitude of a disaster. Mitigation measures can be of different kinds, ranging from physical measures such as flood defences or safe building design to legislation, training and public awareness. Mitigation is an activity, which can take place at any time: before a disaster occurs, during an emergency or after a disaster, during the recovery and reconstruction phases.

Policy, Legal and Institutional Arrangements

Sound policies and legislation that facilitate disaster mitigation and institutional arrangements with clear-cut lines of responsibilities need to be in place to promote and support mitigation planning and implementation as part of the urban development process. AUDMP's project partners in Indonesia, Philippines and Sri Lanka have taken initiatives to review their country policies related to disaster management. The lessons learned in these countries were shared in the panel discussion.

In addition, many Asian countries have established disaster management offices and committees at national and local levels together with an operating framework to support their activities. Experiences of the Bangladesh Urban Disaster Mitigation Project in revitalizing and operationalizing the disaster management committees in Gaibandha and Tongi municipalities were shared. Participants from China, India, Indonesia, Japan and New Zealand also shared the successes and constraints faced at the national level in providing appropriate policy, legal and institutional arrangements that mitigate disasters.

Studies in various countries have found a shift in philosophical approach away from a strictly “top-down” approach, relying on government alone (or the national government alone), to a combination of “top-down” and bottom-up” approaches. The challenges many government organizations face include the development of a capable nodal agency, mechanisms for inter-institutional coordination, ongoing

planning and capacity building processes, community and stakeholder participation that integrate disaster mitigation into development plans. This theme session was built on a recent workshop organized by ADPC on “Policy, Legal and Institutional Arrangements, and Planning for Disaster Management,” on 25 – 27 April 2002 in Bangkok.

Hazard Mapping and Risk Assessment

Comprehensive risk assessment is important for designing mitigation schemes. It provides a sound basis for planning and for allocation of financial and other resources. In risk assessment the evaluation of the potential occurrence of hazard events, the assessment of vulnerability and potential damages, and the assessment of stakeholders’ capacity should take place simultaneously.

From the experience of the AUDMP and other initiatives, hazard mapping, regardless of any hazard, is found to be one of the effective tools for risk assessment that can be used at the national, provincial, city and community levels. AUDMP partners from Bangladesh presented their experience in flood mapping using community-based approaches. In Vientiane, Lao PDR, fire hazard zonation maps were developed. In Kathmandu Valley, Nepal and Bandung, Indonesia, earthquake risk maps were produced and the methodologies replicated to other cities. Partners in Sri Lanka and the International Institute for Geoinformation Science and Earth Observation (ITC), the Netherlands demonstrated a multi-hazard approach to mapping. The main lesson learned in creating these maps is that simple techniques are effective and there is no need for very sophisticated and high-cost equipment and tools.

Other tools, approaches and methodologies of risk assessment will be explored from data collection to analysis to hazard zonation to reviewing the potential risks with stakeholders. Lessons learned on the data quality and reliability, its introduction at the local and community levels, its application on the ground in identifying mitigation priorities and its link with environmental assessment and development planning was addressed in the panel discussion.

Capacity Building

It is necessary to go beyond raising awareness by generating knowledge and developing skills which can translate this awareness into concrete practice. Capacity building is identifying, developing and enhancing the existing capabilities and coping mechanisms of communities. AUDMP’s approach to capacity building combines formal training and informal education. AUDMP developed generic curricula on urban disaster mitigation which are then adapted and institutionalized at the national and local levels through national partner training institutes. There are hazard-specific courses on flood, earthquake and technological hazards, approach-specific courses on disaster risk communications and community-based approaches to disaster mitigation, and activity-specific courses such as safer building construction for masons. An array of capacity building programs, methods and tools were presented and discussed, and their effectiveness and sustainability addressed.

Experiences of capacity building for a range of stakeholders from policy and decision-makers to journalists, teachers and masons in Indonesia, Japan, Nepal and Sri Lanka were discussed. Some of the key lessons learned from the capacity building initiatives in the region were: a) understanding the context of capacity building; b) targeting the right groups and designing a process in which they are involved; c) answering issues of language and contents and the appropriate duration for training; and d) monitoring the impact of training. The task is huge.

Mitigation Planning and Implementation

Based on the risk assessments, mitigation measures can be identified and prioritized. For effective implementation of the mitigation measures, comprehensive mitigation action planning is essential. The

processes of mitigation action planning and ways in which it is linked to urban development planning, as well as different approaches to mitigation implementation were discussed in the panel discussion.

Three main groupings of plans based on the processes that developed them were discussed. They are: government-developed plans; grassroots/citizen-led plans; and integrated private-public plans. The AUDMP project partners in Sri Lanka shared their experiences in integrating mitigation planning and implementation in national and local government plans, including allocation of budgets for staff, facilities and training. The AUDMP project in Bangladesh focused on a community-based approach to mitigation while the projects in Kathmandu, Nepal and Naga City, Philippines focused on city-level planning using a participatory approach. The Caribbean Disaster Mitigation Program, which served as a model for the AUDMP, placed much emphasis on working with the private sector—the owners and operators of vulnerable structures and systems that can put you out of business.

From the lessons learned under AUDMP and other initiatives it is believed that mitigation planning and implementation require a partnership approach involving government officials, NGOs, civil society groups, community organizations and the private sector.

Promoting Safer Building Construction

The promotion of safer building construction is one of the mitigation measures widely implemented throughout Asia and worldwide. The panel discussion provided an analysis of existing building construction practices and the condition of existing Building Codes, Building Acts, Building Bylaws and construction guidelines. While many countries have developed sophisticated building codes with special disaster resistant design and construction codes, implementation and enforcement have been more of an exception than the rule. The workshop also explored successes and constraints in the implementation and enforcement processes.

In this present environment, the workshop looked at ways in which targeted cities have promoted safer building construction through pilot projects, delivered training for masons and municipalities, worked with schools and developed public awareness campaigns. Lessons learned from the different strategic approaches taken to promote disaster-resistant construction in India, Indonesia, Nepal, Sri Lanka and Vietnam were highlighted.

The main lessons learned include the need to bring into force simple, user friendly, non-engineered construction practices for use by the community and the construction artisans, especially in the context of developing countries, where nearly 70 per cent of the population belongs to the lower-income group and construction often takes place without the association of professional technical personnel. There is also demand for creating grass root level technology transfer mechanisms for translating technical 'know-how' to hands-on 'show-how' practices.

Community-Based Approaches to Disaster Mitigation

A broad consensus is emerging in favor of community-based disaster approaches because it is at the community level where physical, social and economic risks can be adequately assessed and managed. Community-based disaster mitigation (CDBM) is a cross-cutting theme where the assessment, planning and implementation are participatory in design and address the community's vulnerabilities and capacities. The panel discussion focused on the importance of people's perception of risk; the purpose and tools of community risk assessment; the strategies for community organizing, resource mobilization and capacity building; and the issues and strategies for mainstreaming CBDM. These issues were highlighted through case studies from communities in Bangladesh, Cambodia, India, Nepal and Sri Lanka.

The sustainability of CBDM was discussed extensively at the panel discussion. One of the major successes of AUDMP's community-based flood mitigation project in Bangladesh is the reactivation of Municipality Disaster Management Committees (MDMCs) in Gaibandha and Tongi. The presence of an organizational mechanism such as the MDMC enhances sustainability of mitigation activities. Another AUDMP community-based flood mitigation project implemented by the Cambodian Red Cross, the International Federation of Red Cross and Red Crescent Societies and PACT Cambodia resulted in the adoption of similar initiatives by international NGOs such as Action Against Hunger, CARE Cambodia

and Oxfam GB. Furthermore, the Cambodian Red Cross, serving as an auxiliary to the Government of Cambodia in humanitarian issues, is contributing to the mainstreaming of CBDM

Climate Applications and Preparedness

Climate Forecasting Applications and Preparedness, implemented effectively, are important in reducing the losses from disasters such as floods, drought, cyclones and landslides, and thus, strengthening the sustainability of livelihoods in communities. This is a new field for AUDMP but there is much to learn from ADPC's Extreme Climate Events Program implemented in Indonesia, the Philippines and Vietnam, and the Program on Climate Forecasting Applications in Bangladesh. Both programs facilitated dialogue between the climate science community and the end users of climate information at the community level to ensure relevant and useable information that is made easily accessible to communities at risk.

Historically, urban centers have been notoriously vulnerable to climate variability and extreme events, due to the enormous scale of potential damages, the large populations at risk, the reliance on built infrastructure, and the potential economic impacts associated with damage to capital investments and disruption to core economic activities. Food security, public health, water resources and built infrastructure have been identified in a number of assessments as key sectors that are highly sensitive to climate variability and extreme events.

The panel discussions brought together key managers and practitioners of climate forecast information application from cities of Bangladesh, Malaysia, Philippines and Thailand to share their experiences. As more stakeholders are taking an interest in this field, the main issues discussed were the appropriate language used for targeted stakeholders, the range of communications methods and channels for different target groups and the accuracy of the climate forecast information.

Public Awareness and Social Marketing

To ensure political commitment for the planning and implementation of mitigation measures, it is essential for stakeholders to first be aware of the importance of disaster risk reduction. Public awareness in risk communications is the process through which people living in hazard-prone areas come to realize and understand that they live in areas of risk, learn the specific dangers that they are exposed to and the warnings that are issued, and know the appropriate action to be taken to protect their lives and minimize property damage. Social marketing is the process of marketing the risk communications message to our audience by learning the cultural identifiers of our audience and crafting our outreach activities to meet their specific needs in a customized approach.

The different approaches, tools and products used in public awareness campaigns for different audiences were presented in the panel discussion. The AUDMP project partners in Bangladesh showed the importance of design being culture-specific and the involvement of the community. In Sri Lanka, the case study highlighted the need to use local languages, have short duration seminars and use NGOs as partners. In the case of Nepal, the public awareness program was integrated into all project components, and different strategies were used for different audiences. The example also showed the need to be creative and how to effectively use the basic design principles. The effectiveness and sustainability of these initiatives were also discussed.

4. Materials and Display

Participants of the workshop received background documents on the workshop themes, AUDMP products including working papers, case studies and video CDs, and the workshop draft proceedings. Participants also had the chance to find out more about disaster mitigation initiatives at the exhibition that was held in parallel with the workshop.

Organization that participated in the exhibition included: ADPC, AUDMP project partners in Bangladesh, Nepal and Sri Lanka, Action Contre La Faim (ACF) Indonesia, Cambodian Red Cross, Center for Disaster Preparedness and the Philippine Disaster Management Forum, CITYNET and the City of Yokohama, Development Workshop Vietnam, Disaster Reduction and Human Renovation

Institution (DRI) Japan, Focus Humanitarian Assistance Pakistan, ITC, SEEDS India, Swayam Shikshan Prayog (SSP), Swinburne University, TUGI, UNISDR and the United Evangelical Church in India.

AGENDA

Regional Workshop on Best Practices in Disaster Mitigation Lessons Learned from the Asian Urban Disaster Mitigation Program and Other Initiatives

Wantilan Ballroom, Hotel Padma Bali,
Bali, Indonesia
24-26 September 2002

TUESDAY, 24 SEPTEMBER 2002

Morning Plenary Session

08:00-09:00 Registration

Opening Ceremony

09:00-09:10	<i>Introductory Address</i>	<i>Dr. Suvit Yodmani Executive Director, ADPC</i>
09:10-09:30	<i>Welcome Address</i>	<i>Mr. Putu Widjanaya Secretary of Bali Province</i>
09:20-09:30	<i>Message from the Office of the Foreign Disaster Assistance, USAID</i>	<i>Mr. David Lillie Disaster Operations, Specialist, USAID</i>
09:30-09:45	<i>Keynote Address</i>	<i>Mr. Prijono Tjiptoherijanto Secretary, BAKORNAS PBP</i>
09:45-09:55	<i>Vote of Thanks</i>	<i>Col. Brian Ward Director Emeritus and Special Advisor, ADPC</i>

Master of Ceremony: Mr. Primal Jha

09:55-10:15	Group Photo	
10:15-10:45	Visit to Display Area	
10:45-11:15	Coffee Break	
11:15-11:45	An overview of the Asian Urban Disaster Mitigation Program	Video Showing
	Workshop Goals, Objectives and Structure	Ms Shirley Mattingly
11:45-12:00	Administrative Announcements	Mr. Rajesh Sharma Ms. Christine Apikul
12:00-13:00	Lunch	

Afternoon Plenary Theme Session

Policy, Legal and Institutional Arrangements

		Chair: Dr. Suvit Yodmani Executive Director, ADPC Co-Chair: Col. Brian Ward Director Emeritus and Special Advisor, ADPC
13:00-14:30	Presentations • <i>Overview of the Theme</i>	<i>Ms. Shirley Mattingly</i>

	<ul style="list-style-type: none"> • <i>Influencing Policy, Legal and Institutional Arrangements for Effective Disaster Management in Sri Lanka: Lessons from the Sri Lanka Urban Multi-Hazard Disaster Mitigation Project[†]</i> 	Mr. Lionel Hewawasam
	<ul style="list-style-type: none"> • <i>Promoting the National Strategy for Urban Disaster Mitigation: Lessons from the Indonesian Urban Disaster Mitigation Project[†]</i> 	Dr. Krishna Pribadi
	<ul style="list-style-type: none"> • <i>Operationalizing Disaster Management Committees in the Municipalities of Bangladesh</i> 	Mr. Azmat Ullah Khan
	<ul style="list-style-type: none"> • <i>Managing Urban Disasters: The Naga City Experience</i> 	Mr. Ernesto Elcamel
	<ul style="list-style-type: none"> • <i>Yokohama's Efforts to be Prepared for Disasters</i> 	Mr. Junichi Miyakawa
14:45-15:15	Coffee Break	
15:15-16:00	Presentation continued	
	<ul style="list-style-type: none"> • <i>Facilitating Sustained Sharing of Lessons Learned: The Earthquakes and Megacities Initiatives (EMI) Experience[†]</i> 	Dr. Fouad Bendimerad
	<ul style="list-style-type: none"> • <i>Institutional Arrangements for Total Risk Management in New Zealand</i> 	Dr. Neil Britton
	<ul style="list-style-type: none"> • <i>BAKORNAS PBP and Disaster Management Policy in Indonesia[†]</i> 	Mr. Tabrani
16:00-17:00	Discussions Summary of Presentations and Discussions	Ms. Shirley Mattingly

WEDNESDAY, 25 SEPTEMBER 2002

Morning Concurrent Theme Sessions

Room A: Hazard Mapping and Risk Assessment

		<p>Chair: Mr. M. M. C. Ferdinando, Additional Secretary (Development) Ministry of Housing and Plantation Infrastructure, Sri Lanka</p> <p>Co-Chair: Prof. Lal Balasuriya, Dean, Faculty of Architecture University of Moratuwa, Sri Lanka</p>
08:30-10:30	Presentations	
	<ul style="list-style-type: none"> • <i>Overview of the Theme</i> 	Ms. Linda Noson
	<ul style="list-style-type: none"> • <i>Hazard Mapping and Vulnerability Assessment Process under the Bangladesh Urban Disaster Mitigation Project</i> 	Mr. Monzu Morshed
	<ul style="list-style-type: none"> • <i>Fire Risk Assessment in Vientiane, Lao PDR</i> 	Dr. Aphaylat Keophilavanh
	<ul style="list-style-type: none"> • <i>Hazard Mapping and Risk Assessment: Experiences of the Kathmandu Valley Earthquake Risk Management Project</i> 	Mr. Amod Dixit
	<ul style="list-style-type: none"> • <i>Hazard Mapping for Delineating Multiple Risks of Natural Disasters under the Sri Lanka Urban Multi-Hazard Disaster Mitigation Project</i> 	Mr. R.M.S. Bandara
	<ul style="list-style-type: none"> • <i>Multi-Hazard Risk Assessment using GIS in Urban Areas: A Case Study for the City of Turrialaba, Costa Rica</i> 	Dr. Cees Van Western
	<ul style="list-style-type: none"> • <i>Comparing the Risk Assessment Process in Bandung and the Rapid Risk Assessment in Replicating Cities of Indonesia[†]</i> 	Dr. Krishna Pribadi
10:30-11:00	Coffee Break	
11:00-12:00	Discussions Summary of Presentations and Discussions	Ms. Linda Noson

Room B: Capacity Building

		Chair: Mme. Cora de Leon, Vice Chair, ADPC Board of Trustees Co-Chair: Mr. Kamal Prasad Lal Karna, Director, Department of Education, Nepal
08:30-10:30	Presentations <ul style="list-style-type: none">• <i>Overview of the Theme</i>• <i>Capacity Building: Experiences of the Kathmandu Valley Earthquake Risk Management Project</i>• <i>Developing and Delivering National Disaster Mitigation Courses, and Training Technical Personnel: Sharing Experiences and Lessons Learned from Sri Lanka</i>• <i>Institutional Arrangements and Capacity Building of Colombo Municipal Council for Disaster Management</i>• <i>The Great-Hashin-Awaji Earthquake Memorial Disaster Reduction and Human Renovation: Enhancing Capacity of Local Government Leaders on Disaster Management</i>• <i>Training of Teachers: Sharing Experiences and Lessons Learned from Indonesia⁺</i>• <i>Lessons Learned from the Indonesian Urban Disaster Mitigation Program⁺</i>	<i>Ms. Zenaida Delica Willison</i> <i>Mr. Shiva Bahadur Pradhanang</i> <i>Mr. Lionel Hewawasam</i> <i>Ms. Padma Karunaratne</i> <i>Dr. Shingo Nagamatsu</i> <i>Dr. Harkunti P. Rahayu</i> <i>Mr. Teddy Boen</i>
10:30-11:00	Coffee Break	
11:00-12:00	Discussions Summary of Presentations and Discussions Lunch	<i>Ms. Zenaida Delica Willison</i>

Afternoon Plenary Theme Session

Room A: Mitigation Planning and Implementation

		Chair: Mayor Maria Lourdes Fernando, City Mayor, Government of Marikina, Philippines Co-Chair: Mrs. To Thanh Thuy, Director, Housing Research Center, Ministry of Construction, Vietnam
13:30-15:30	Presentation <ul style="list-style-type: none">• <i>Overview of the Theme</i>• <i>Mitigation Planning through Community-Based Approaches in Bangladesh</i>• <i>Mitigation Planning and Implementation: Experiences of the Kathmandu Valley Earthquake Risk Management Project</i>• <i>Managing Urban Disasters: the Naga City Experience on Mitigation and Planning</i>• <i>Mitigation Planning and Implementation: Experiences from the Caribbean Disaster Mitigation Project⁺</i>	<i>Mr. Josh Moga</i> <i>Mr. Nurul Huda</i> <i>Mr. Kamal Prasad Lal Karna</i> <i>Ms. Geethi Karunaratne</i> <i>Mr. Stephen Bender</i>
15:30-16:00	Coffee Break	
16:00-17:00	Discussions Summary of Presentations and Discussions	<i>Mr. Josh Moga</i>

Room B: Promoting Safer Building Construction

		Chair: Mr. M. Sahu, Gujarat State Disaster Management Authority, India Co-Chair: Mr. Vichit Thongcharoen, Department of Accelerated Rural Development, Thailand
08:30-10:30	Presentations <ul style="list-style-type: none">• <i>Overview of the Theme</i>• <i>Promoting Safer Building Construction: Experiences of the Kathmandu Valley Earthquake Risk Management Project</i>• <i>Safer Shelter for Flood and Typhoon Areas in Vietnam⁺</i>• <i>Ensuring Safer Building Construction: Practices in Sri Lanka</i>• <i>More to Lose: Establishing Community Capacity to Reduce Vulnerability to Economic Lose Caused by Storm Damage to Houses in Central Vietnam</i>• <i>Promoting Safer Building Construction in India</i>• <i>Gujarat Emergency Earthquake Reconstruction Project</i>	<i>Mr. Vasudevan Suresh</i> <i>Mr. Yogeshwar Krishna Parajuli</i> <i>Mr. Thai Tran Dinh</i> <i>Ms. Geethi Karunaratne</i> <i>Mr. Guillaume Chantry</i> <i>Mr. Upamanyu Patil</i> <i>Mr. Maheshwar Sahu</i>
15:30-16:00	Coffee Break	
16:00-17:00	Discussions Summary of Presentations and Discussions	<i>Mr. Vasudevan Suresh</i>

THURSDAY, 26 SEPTEMBER 2002

Morning Concurrent Theme Sessions

Room A: Community-Based Approaches to Disaster Mitigation

		Chair: H.E. Mr. Chowdhouny Kamal Ibne Yusuf, Honorable Minister, Ministry of Disaster Management and Relief, Bangladesh Co-Chair: Mr. Thai Tran Dinh, Deputy Director, Department of Science, Technology and Environment, Ministry of Construction, Vietnam
08:30-10:30	Presentation <ul style="list-style-type: none">• <i>Overview of the Theme</i>• <i>Cambodian Community-Based Flood Mitigation and Preparedness Project: Experiences and Lessons Learned</i>• <i>Community Participation in Urban Flood Mitigation under the Bangladesh Urban Disaster Mitigation Project</i>• <i>Community Participation in Disaster Mitigation in Nawalapitiya Urban Council, Sri Lanka</i>• <i>Community-Based Approaches to Disaster Mitigation: Experiences from Kathmandu Valley</i>• <i>Empowered Individual: Caring Neighbors Make the Best Disaster Managers</i>	<i>Ms. Lorna P. Victoria</i> <i>Mr. Kurt A. MacLeod</i> <i>Mr. Nurul Huda</i> <i>Mr. Gemunu Sumathipala</i> <i>Mr. Murari Binod Pokhrel</i> <i>Mr. Manu Gupta</i>
10:30-11:00	Coffee Break	
11:00-12:00	Discussions Summary of Presentations and Discussions	<i>Ms. Lorna P. Victoria</i>

Room B: Climate Applications and Preparedness

Chair: Mr. Tom Brennan, Regional Disaster Reduction Advisor, Bangkok-SURF, United Nations Development Programme (UNDP)

Co-Chair: Dr. Nguon Sakon, Deputy Secretary General, Cambodian Red Cross

08:30-10:30	Presentations <ul style="list-style-type: none">• <i>Overview of the Theme</i>• <i>Application of Climate Forecast Information in Mitigating Impact of Climate Hazards in Urban Cities of Malaysia with particular reference to managing water resources</i>• <i>Application of Climate Forecast Information in Mitigating Impact of Climate Hazards in Metro Manila: Case Study on the 1997-98 El Niño Event</i>• <i>Vulnerability and Adaptation Assessments of Angat Multi-purpose Reservoir to Climate Change</i>• <i>Urban Vulnerability on Drought in Thailand</i>	<p><i>Mr. Glenn Dolcemascolo</i> <i>Ms. Hwang Yung Fong</i></p> <p><i>Ms. R. Susan Espinueva</i></p> <p><i>Mr. Nathaniel A. Cruz</i> <i>Ms. Chalalai Jamphon</i></p>
10:30-11:00	Coffee Break	
11:00-12:00	Discussions Summary of Presentations and Discussions	Mr. A. R. Subbiah
12:00-13:00	Lunch	

Afternoon Plenary Theme Session

Public Awareness and Social Marketing

Chair: Dr. Suvit Yodmani, Executive Director, ADPC

Co-Chair: Mr. Montree Channachaiviboonwat, Director, Disaster Relief Operation Division, Department of Accelerated Rural Development, Thailand

13:30-15:30	Presentation <ul style="list-style-type: none">• <i>Overview of the Theme</i>• <i>Raising Awareness through Public Campaign under the Bangladesh Urban Disaster Mitigation Project</i>• <i>Public Awareness and Social Marketing: Experiences of the Kathmandu Valley Earthquake Risk Management Project</i>• <i>Effective Public Awareness Strategy for Disaster Mitigation: Examples from Sri Lanka</i>• <i>Developing Public Awareness Materials: Design Principles</i>⁺	<p><i>Ms. Suzanne Frew</i> <i>Mr. Monzu Morshed</i></p> <p><i>Mr. Amod Dixit</i></p> <p><i>Mr. Lionel Hewawasam</i> <i>Prof. Jyotika Ramaprasad</i></p>
11:00-12:00	Discussions Summary of Presentations and Discussions	Ms. Suzanne Frew
15:00-16:00	Closing Ceremony	
16:00-17:00	Coffee Break	
17:00	Depart for Farewell Dinner at Garuda Wisnu Kencana Cultural Park	

⁺ Paper not available