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25 years of Partnerships in Building **Safer Communities** in Asia

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This version of the publication "25 Years of Partnerships in Building Safer Communities in Asia" is released at the silver jubilee ceremony on 23rd March, 2011 in Bangkok, Thailand. A final volume will be released by end of 2011.

Bangkok, Thailand

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"25 Years of Partnerships in Building Safer Communities in Asia" is dedicated to the Governments, development partners, institutions and ADPC staff who have worked together over the last 25 years toward advancing a shared vision of safer communities and sustainable development through disaster reduction.

preface

In 2011, the Asian Disaster Preparedness Center (ADPC) completed its silver jubilee of service to the region. At this milestone juncture, it is with great pleasure that I introduce this document "25 Years of Partnerships in Building Safer Communities in Asia" which reflectively celebrates our collective action with governments, partners and donors in making communities and countries better prepared, safer and more resilient against disasters.

Born out of need to have enhanced systems in countries of the region for preparedness and mitigation, ADPC has worked hand in hand with countries and partners and played a key role in Asia Pacific Region to advance disaster risk reduction through capacity and system development, facilitating knowledge sharing and serving as an information clearing housing of the region, providing technical services on a diverse range of themes, implementing pioneering regional programs, supporting purposive action by regional mechanisms and technical support to inter-agency coordination and coherence.

The publication aims to provide a nuanced historical record of the processes, contributions, challenges, changes made in responding to external environment; while shaping and leading proactive innovative action. It describes in detail each of the thematic areas that have been ADPC's core focus areas of work and discusses the principles, growth and accomplishments under each, while also bringing out challenges and future directions. The publication looks ahead to what actions are needed to meet newer challenges and emerging needs.

I would like to take this opportunity to express our sincere appreciation to national governments, UN and multilateral agencies and partner organization for their consistent support and encouragement in ADPC; while demanding creativity, innovation and quality services.

We recognize this is not time to rest on our laurels but determinately move forward to strengthen and improve our services. We are developing our ADPC strategy 2020 through an extensive consultative process to guide our action in the next decade in investing in supporting building of preparedness and resilience in all communities that need them, while accelerating our efforts to meet the globally committed targets of the Hyogo Framework of Action (HFA) and 'disaster proof' the Millennium Development Goals (MDGs).

Writing a reflective and interpretive history is not an easy task, particularly to tight deadlines. Today's volume will be released at the silver jubilee ceremony in the presence of the Prime Minister of Thailand, Ministers from ADPC Board of Trustees, charter and RCC member countries on the 23rd of March 2011 in Bangkok, Thailand.

A final volume incorporating messages from the founding UN Agencies; and representative member countries will be released later in the silver jubilee year.

I would like to thank Mr. Terry Jeggle, ADPC's Executive Director from 1992-94, and members of ADPC's International Advisory Council; senior staff of ADPC and all members of the silver jubilee committee and its publication sub-committee for their unstinting efforts so far.

Dr. Bhichit Rattakul
Executive Director
Asian Disaster Preparedness Center
20th March 2011

Acronyms

ACCCRN	Asian Cities Climate Change Resilience Network
ADB	Asian Development Bank
ADPC	Asian Disaster Preparedness Center
AIT	Asian Institute of Technology
ASEAN	Association of Southeast Asian Nations
AUDMP	Asian Urban Disaster Mitigation Program
AusAID	Australian Agency for International Development
BAPPENAS	Badan Perencanaan Pembangunan Nasional (Development Planning Agency, Indonesia)
CASITA	Capacity Building in Asia Using Information Technology Applications Program
CBDRR	Community Based Disaster Risk Reduction
CDMP	Comprehensive Disaster Management Program
DANIDA	The Danish International Development Agency
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DIPECHO	ECHO's disaster preparedness programme
ECE	Extreme Climate Events
ECHO	European Commission Humanitarian Aid & Civil Protection
EM-DAT	International Disaster Database
EU	European Union
GDP	Gross Domestic Product
GTZ	German Company for International Cooperation
IDNDR	International Decade for Natural Disaster Reduction
IOC/UNESCO	Intergovernmental Oceanographic Commission /United Nations Educational, Scientific and Cultural Organization
IRI	International Research Institute for Climate and Society
ISDR	International Strategy for Disaster Reduction
ITC	University of Twente – Faculty of Geo-Information Science and Earth Observation
NGOs	Non-Governmental Organisations

NGI	Norwegian Geo-Technical Institute
NHMS	National Hydrological and Meteorological Services
NOAA	National Oceanic and Atmospheric Administration
NSET	National Society for Earthquake Technology
OFDA	The Office of U.S. Foreign Disaster Assistance
PEER	Program for Enhancement of Emergency Response
PIPS	Priority Implementation Partnerships, for mainstreaming DRR in National and local development planning process.
PROMISE	Program for Hydro-Meteorological Risk Mitigation in Secondary Cities in Asia
RADIUS	Risk Assessment Tools for Diagnosis of Urban Areas Against Seismic Disasters
RCC	Regional Consultative Committee on Disaster Management
REWC	Regional Early Warning Center
RIMES	Regional Integrated Multi-Hazard Early Warning System for Africa and Asia
SARS	Severe acute respiratory syndrome
SHOUHARDO	Strengthening Household Abilities for Responding to Development Opportunities.
SIDA	Swedish International Development Cooperation Agency
TEI	Thai Environmental Institute
UN	United Nations
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNECLAC	United Nations Economic Commission for Latin America and the Caribbean
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
WCDR	World Conference on Disaster Reduction
WMO	World Meteorological Organisation

Contents

1. Introduction of ADPC and its Purpose

According to the International Disaster Database, EM-DAT,[1] between 1980-1989 and 1999-2009, the number of disaster events reported globally increased from 1,690 to 3,886. Over this entire period, 45 percent of these events occurred in Asia and the Pacific, the region of the world that suffered the largest number of disasters over these years. While the region generates 25 percent of the world's GDP, it has suffered 42 percent of the economic losses due to disasters. The region with 61 percent of the world's population has 86 percent of the total population affected by disasters.[2]

The Birth of an Institution

The beginning of the Asian Disaster Preparedness Center (ADPC) in 1986 occurred from the insights that more disasters were having increasingly severe consequences in the rapidly growing societies of Asia and that there was a pressing need to increase both official and public abilities to save lives, reduce harm and limit future damages. While the initial interest was to improve all aspects of disaster management especially through professional training programs, there was a deeper understanding of the Founding Director, Col. Brian Ward, that it was necessary to alter the way most people considered "natural disasters". While the occurrence of natural hazards would continue to occur with the ferocity of nature, there was much more that could be done through better informed and systematic human actions to protect people and to reduce their exposure to avoidable losses and damage.

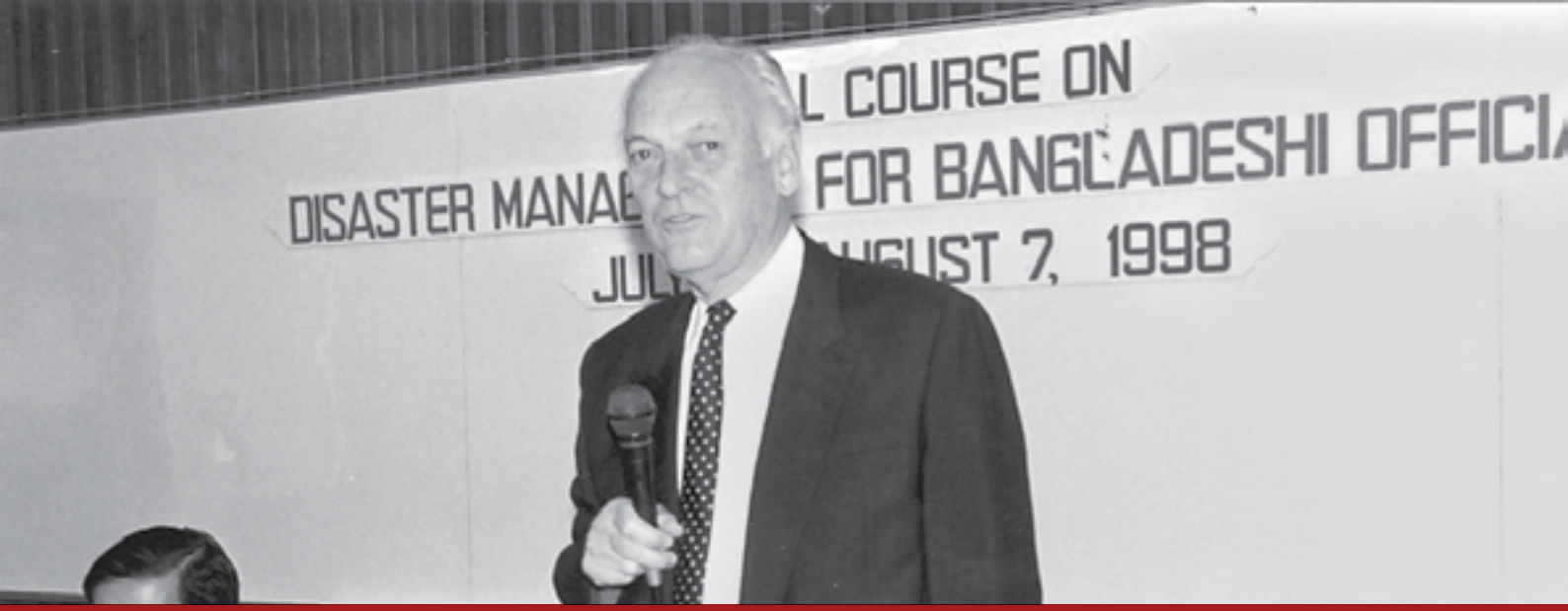
A widespread and prevailing view until the early 1980s was that natural disasters were just forceful and destructive natural events such as earthquakes, volcanic eruptions, floods and cyclones, often considered as unavoidable "acts of God", against which humankind was powerless. Therefore the emphasis of national governments and the wider international assistance community was only on responding to the events after they occurred, without taking account of either the social or the economic implications of the causes.[3] The advancements in understanding the scientific processes that underlie hazardous events and a growing recognition of people's exposure and increasing vulnerability led to further professional engagement in the subject.

A more technocratic and increasingly informed recognition of disaster risk management came into existence. This led initially to growing interest in the design and implementation of ways to mitigate losses through physical and structural measures to reduce hazards or to increase the resistance of structures.[4] Then gradually through wider international interests, governments and institutions around the world have realised that unless the underlying social and economic risk factors that continue to create more vulnerable conditions for people are properly addressed, then effective long-term beneficial developments cannot be sustained in any society. ***It is in this context that ADPC's role has evolved through innovative ways of managing disaster risk, building institutional capacities, and forging partnerships over the past 25 years.***

1 http://www.emdat.be/
2 UNESCAP, Protecting Development Gains: Reducing Disaster Vulnerability and Building Resilience in Asia and the Pacific, The Asia Pacific Disaster Report, 2010.
3 Building Disaster Risk Reduction in Asia: A Way Forward. ADPC Looks Ahead to 2015, ADPC, 2004
4 UNDP, Reducing Disaster Risk - A Challenge for Development, 2004

ADPC's Mission

To reduce the impact of disasters on communities and countries in Asia and the Pacific by raising awareness, helping to establish and strengthen sustainable institutional mechanisms, enhancing knowledge and skills, and facilitating the exchange of information, experience and expertise.



Col. Brian Ward, 1932-2004

Col. Brian Ward was the founding father of the Asian Disaster Preparedness Center and served as its first Director from 1986 to 1992. Recognising the urgent need of international assistance for disaster-prone countries in Asia and the Pacific region to strengthen their national disaster management systems, the United Nations Disaster Relief Office (UNDRO, currently UNOCHA) conducted a feasibility study for addressing country's needs. Brian, as he was widely known among associates, did the consulting work for the study in early 1985, visiting ten countries in the region to clarify their needs in disaster management. Findings of the study and the interest it conveyed from governments clearly provided the rationale for establishing ADPC in 1986.

During his time as director, he provided vision and insight, motivating all he worked with, but especially encouraging young professionals and seeking to enable government authorities to engage more productively in reducing possible disaster losses. He managed, taught and traveled widely, conducting numerous disaster-related technical advisory and liaison missions throughout Asia, the Pacific and elsewhere including to Australia, Bangladesh, Barbados, China, Costa Rica, Fiji, India, Indonesia, Japan, Nepal, Papua New Guinea, the Philippines, Singapore, Sri Lanka, Taiwan, the United Nations in Geneva and New York, the United Kingdom, the United States, Viet Nam and Western Samoa.

Brian dedicated almost his entire life to the cause of disaster risk reduction. He served in the Royal Engineers Corps of the British Army for over 20 years in the United Kingdom, Germany, Malaysia and Thailand. Upon his military retirement, he worked for more than ten years with the then League of Red Cross Societies (currently the International Federation of Red Cross and Red Crescent Societies) as a delegate and a chief delegate in several countries of Africa and Asia. During this period, he also undertook missions as a technical advisor to UNDRO on building disaster management capacities in countries in Asia and the Pacific.

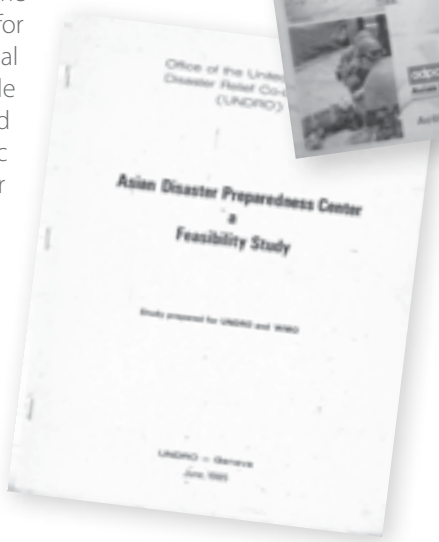
In recognition of his outstanding personal contribution to disaster reduction, Col. Brian Ward was awarded the United Nations Sasakawa Certificate of Distinction in 2001. All who have worked at ADPC admired Brian's dedication, extensive experience, but perhaps most his sensitivity and efforts to develop individuals and institutions.

To convey ADPC's honor and respect, the Center's conference room has been designated as the Brian Ward Conference Room, so his memory continues to be shared with all people ADPC meets and works with to create safer Asian communities.

ADPC and Its Values Defined

As a leading regional resource center, ADPC works towards the realisation of disaster reduction for safer communities and sustainable development in Asia and the Pacific. Since its inception in 1986, ADPC has been recognised as the major independent center in the region for promoting disaster awareness and the development of local capabilities to foster institutionalised disaster management and mitigation policies.

ADPC was originally established as an outreach center of the Asian Institute of Technology[5] after a feasibility study conducted jointly by two agencies of the United Nations, the Office of the United Nations Disaster Relief Coordinator (current the UN Office for the Coordination of Humanitarian Affairs) and the World Meteorological Organization in January 1986. Funding for the study was provided by the United Nations Development Programme in response to requests from countries in the region for international assistance to strengthen their national disaster management systems. Thus, the initial role conceived for the center was mandated by an expressed need to assist countries of the Asia and the Pacific region in formulating their policies and developing their capabilities in all aspects of disaster management.[6]



5 The Asian Institute of Technology (AIT) was established in 1959 as an autonomous international postgraduate technological institute. It was charted in 1967 by special legislation of the Royal Thai Government. It provided ADPC with an ideal location to be situated when ADPC was established in 1986. AIT is the recipient of the 1989 Ramon Magsaysay Award.

6 ADPC, Activity Report: 1986 – 1989, published in 1990.

Core Principles

Following the vision and guided by the inspiring leadership of the Founding Director of the Center, Col. Brian Ward, ADPC envisaged five core principles for its activities in disaster management. The ***first*** priority of disaster preparedness should be the safety of people most at risk, followed by the protection of critical property. ***Secondly***, concern should be for the welfare and self-reliance of individuals, their families, and their communities during a disaster, even though intervention at the time calls for provincial, national, and international coordination. The ***third*** principle is that disaster preparedness activities should be the responsibility of government and community-based organisations and integrated into development planning. The ***fourth*** and inclusive belief is that disaster preparedness requires a multi-disciplinary, all-hazards approach to addressing the many issues involved, and collaboration among government and non-government organisations, research and training institutions, and the private sector. The ***final*** principle is that access to current information on the causes and consequences of disasters is the basis of sound disaster management planning.

Goals of the Center

Since its formation, ADPC has been true to these early objectives. First, the Center aims *to promote increased awareness, knowledge and adoption of disaster reduction practices as an integral part of the development process at community, national, sub-regional, regional and international levels of engagement*.

Secondly, ADPC's primary focus lies in ***helping countries, organisations, communities and individuals strengthen their own capacities in all respects to reduce the impacts of disasters*** It is widely acknowledged that building strong local ownership through informed and motivated participation in disaster risk endeavors is the most assured way to sustain disaster risk reduction and ensure human development. Another crucial element in this respect is to translate scientific knowledge into cost effective and environmentally suited practices that are well understood by the communities concerned. In other instances successful activities proceed from the continued appreciation of elements derived from indigenous knowledge. As such, ADPC has worked to enhance capacities through the regular assessment of needs in the region and to develop specific, context-driven and appropriate capacity building products and services.

Thirdly, the Center puts great ***emphasis on promoting partnerships among the organisations with which it works and by means of networks with communities*** and other players in the field of disaster management. It has pursued this through the continuous exchange of experiences, shared practices and efforts both to document and disseminate lessons from its many activities and partners.

Fourth, the Center *strives to be an initiating and responsive regional resource center but one with international status* that can enable even wider professional relevance and recognition. While being supported by countries of the region, it should not be left behind in accessing international best practices and resources to play an active role in related endeavors. In this regard, ADPC has been a vocal advocate of South-South cooperation in the exchange of information, experiences and professional resources. ADPC has also always been an active contributor to advancing wider international agendas that have a bearing on disaster risk reduction such as the United Nations Millennium Development Goals, the International Strategy for Disaster Reduction, and current attention to climate change adaptation initiatives.

Fifth, and importantly, ADPC has not spared any efforts to *maintain and improve itself as a diverse, inter-disciplinary, international team backed by efficient, supportive management systems, focused on providing the highest quality of service* to the region.

ADPC's Roles

ADPC started as a training provider, as the UN feasibility study on the disaster management needs of the region identified training to build the operational capacities at the regional, national and community levels as "the greatest need of all." Since then, with the progress of more national policy commitments and resulting regional affiliations for comprehensive disaster management, the roles that ADPC has been performing also have evolved. These can be broadly categorised as the following:

- *Development of capacities and promotion of learning*
- *Dissemination of information and knowledge management*
- *Provision of technical and advisory services*
- *Implementation of pioneering regional programs*
- *Preparations and follow up of global and regional mechanisms*
- *Establishment of new regional mechanisms*
- *Support for inter-agency coherence and coordination*
- *Catalytic facilitator and partner of sub regional mechanisms*

ADPC Thematic Areas

As the practice of disaster risk reduction has both expanded in scope, but also become more sophisticated involving additional professional interests, ADPC has defined 'niche' thematic areas of interest and concern; and to build up institutional core competencies, technical expertise, and trusting external partnerships within these areas, while consolidating past achievements and experience gained through working on these areas. The box below shows the 12 thematic areas of focus of ADPC.

1. Good governance and Disaster Risk Management Systems Development
2. Urban Disaster Risk Management
3. Climate Variability and Change/Climate Risk Management
4. Community-Based Disaster Risk Reduction
5. Public Health in Emergencies/Health Risk Management
6. Emergency Preparedness and Response System Development
7. Geological Hazard Risk Management
8. End to End Multi Hazard Early Warning Systems
9. Mainstreaming Disaster Risk Reduction into Development
10. Post-disaster Recovery and Reconstruction
11. Risk Assessment
12. Technological Hazard Risk Management.

In sum, ADPC's activities demonstrate a wide diversity in application, address various types of natural hazard-induced disaster risks, and cover all aspects of the disaster management spectrum from prevention and mitigation, through preparedness and response, to recovery responsibilities.

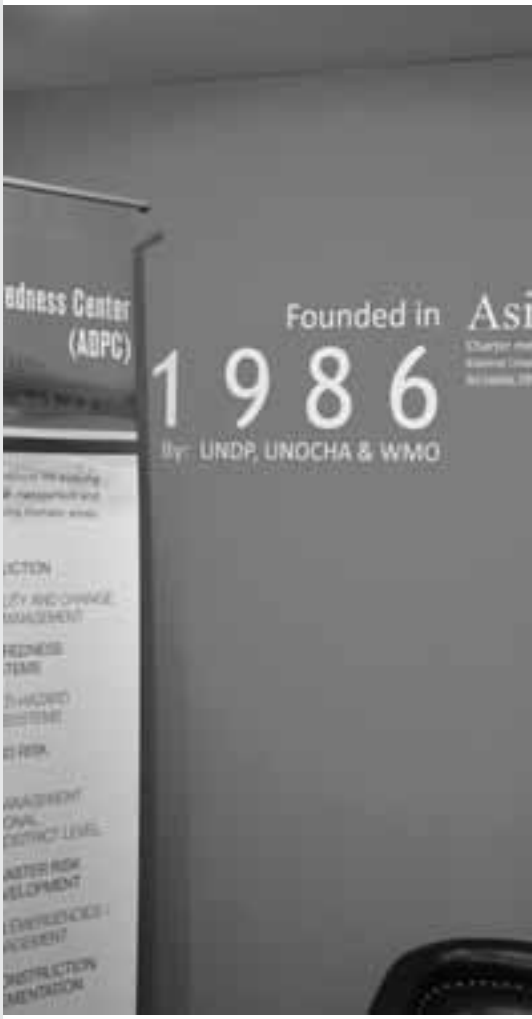
2. The Evolution and Growth of ADPC Over 25 Years 1986 - 2011

Creating an Identity, 1986 – 1990

Worldwide, in the mid- to late 1980's a limited number of academics and scientists, some development professionals and even fewer disaster management practitioners were aware that ever increasing numbers of people were being affected by disasters. Countries began to recognise too, that ever larger amounts of money were being spent on disaster relief and emergency response while little was being done in terms of public policy or through development efforts to prevent or mitigate the potential losses from disasters. The practice of disaster mitigation in Asia was not so different as there were few regulatory requirements, little information shared as to the growing cost of disasters, few programs to mitigate public exposure to known disaster hazards and only few training courses for disaster management professionals. The few academic curricula on disaster mitigation that were available were primarily to be found in Japan and India. With few exceptions, they concentrated on matters mostly of structural and civil engineering.

Disasters in most Asian countries remained a matter for civil protection agencies often under the authority of police or fire services. Valued professional skills were directed very much towards emergency response and occasionally embraced preparedness initiatives. Technical capacities for disaster mitigation were limited to a few pioneering individuals, but policy awareness or public knowledge of the importance and possibilities of disaster mitigation was very low. The subject was not a part of the development interests of the day.

When ADPC was established in 1986, its mandate was to assist countries of the Asia and the Pacific region in formulating their policies and developing their capabilities in all aspects of disaster management. At the time, there were no other professional or academic institutions which provided comprehensive and specific disaster management training for the comparatively few people in Asian countries or elsewhere who occupied leadership positions in national disaster management agencies. Thus the initial focus of ADPC's activity was to provide intensive, multidisciplinary training to key individuals and to offer other opportunities for the exchange of information and experience among contemporaries from other countries.



Developing Wider Interests and Capacities, 1990 - 1995

During 1990-1994 the international recognition of the center increased. There were more activities coupled with an increase in the number of staff and expanded material resources. There was also a significant expansion of the roster of resource people, consultants, ADPC alumni and their organisations. The frequency and severity of disasters in the region between 1990 and 1994 helped to crystallise the purpose of ADPC. The impacts of more frequent disasters on the development activities in Asian countries also sensitised ADPC to many additional roles associated with disaster management.

This led to a significant increase in the need for more multidisciplinary abilities of ADPC's staff. Significantly, it is during this period that the center expanded its attention to shelter and urban development. In addition, there was increasing attention given to public health as well. As the then ADPC Director identified, ADPC tried to ensure that its own capabilities keep pace with expectations by increasing its analytical abilities and applied research and developing a capability in hazard and risk assessments and the management of information systems related to disaster prevention.

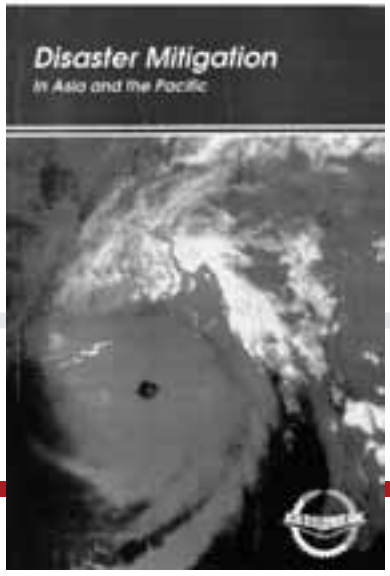
During this period, ADPC's efforts were well placed to coincide with the UN Resolution proclaiming the 1990s as the International Decade for Natural Disaster Reduction (IDNDR), calling for concerted action to promote worldwide initiatives in disaster mitigation. *ADPC served as a regional focal point for the IDNDR activities and worked to maintain a focus on the IDNDR strategy for the region by preparing a mid-term review of IDNDR efforts in South and Southeast Asia in 1994. A milestone of the IDNDR global effort was the UN World Conference on Natural Disaster Reduction held in Yokohama, Japan in May1994.*

Attitudes to disasters are changing. Whilst their occurrence is accepted as a fact of life, people are less fatalistic about their effects. Even though rising population densities have increased the pressure on land use, obliging people to settle in hazard-prone areas, and poverty is still widespread, people continue to display astonishing fortitude in the face of adversity. They strive for greater self-reliance within the limits of the scarce resources available to them. They also recognise what can be achieved through mitigation and they have higher expectations of the governments in this respect.

There is a growing awareness in governments of the interrelationship between disaster, the environment and development. Emphasis is shifting from relief to mitigation. Ad hoc response is being gradually replaced by a planned, "all hazards", inter-disciplinary philosophy. National disaster management organisations are steadily being strengthened and NGOs continue to play an important part in the overall process. There is growing awareness of the benefits of regional and international cooperation.

Disaster Mitigation in Asia and the Pacific
an ADB publication, produced by ADPC, 1991

Its resulting document, The Yokohama Strategy and Plan of Action for a Safer World: Guidelines for natural disaster prevention, preparedness and mitigation called for prioritising the compilation and exchange of information in the region and promoting regional and sub-regional cooperation between countries exposed to natural hazards, especially for the benefit of developing countries. These both coincided with and accentuated ADPC's own areas of emphasis as it proceeded into the later half of the 1990s.



Expansion of ADPC Program Activities, 1995 – 1999

Midway through the IDNDR decade, there were increased efforts to reduce the vulnerabilities of communities and encouragement to implement programs which would have direct benefits for them. This renewed global sense of purpose motivated ADPC to conduct a strategic planning process which resulted in the restructuring of ADPC activities.

In the context of growing urbanisation in the world, and particularly the rapidly increasing megacities in Asia with their adverse impacts upon vulnerable communities, the Asian Urban Disaster Mitigation Program (AUDMP) was begun in October 1995 with support from USAID. Initially involving the six countries of Cambodia, India, Indonesia, Nepal, Philippines and Sri Lanka, during four years the program was later expanded to include Bangladesh, Lao PDR, Thailand and Viet Nam with the broad objective to reduce vulnerability to natural disasters affecting urban populations, critical infrastructure and shelter in ten selected cities. It promoted the replication and adaptation of successful mitigation measures in the countries where various demonstration projects were organised until 2005.

In response to the severe but also intensively studied El Niño climatic event during 1997-1998 that resulted in numerous hydro-meteorological disasters around the world, *ADPC embarked on what would become another core technical program, the Extreme Climate Events Program. In September 1998, ADPC developed a relationship with the United States' National Oceanic and Atmospheric Administration (NOAA) to collaborate on a program to integrate disaster management concerns into numerous public sectors such as departments of agriculture, forestry, natural resources and public health by working closely with national hydrological and meteorological agencies in Asian countries and the wider climate-science community globally.* In following the example of the urban program, the climate program embedded disaster awareness and mitigation activities into additional communities of practice through combined technical partnerships and information dissemination activities.

ADPC's core commitment to disaster management practice also diversified during this period. *Aware of the growing demonstration of countries' own operational capacities and the corresponding changes in development thinking, more attention was devoted to addressing the needs of vulnerable communities through their own participation. This Community-Based Disaster Risk Reduction (CBDRR) orientation was driven by efforts to identify and involve more local capacities and resources, placing potentially disaster affected people much more at the center of planning, decision making and implementation of projects that would address their own community circumstances and needs.*

The center's involvement in *CBDRR began in 1997 when it initiated one of the first international courses in community-based disaster risk reduction in collaboration with Duryog Nivaran, a network of community-based disaster mitigation NGOs in South Asia. ADPC's approach to CBDRR concentrated on building or expanding local capacities through training; sharing experiences among practitioners and decision-makers, especially by regional exchanges and others means of "South-South" leaning, and initiating links among national and local government departments, NGOs and communities through local, national and regional platforms and associations. By 2010, the center has organised 19 different CBDRR training courses with more than 400 participants drawn from countries around the world.*

Another example of a wider regional scope for ADPC's disaster management programming was the initiation of the *Program for Enhancement of Emergency Response (PEER) launched in 1998. With support provided for a five year period by USAID and working with national disaster management organisations of ASEAN countries, this program had the aim of improving search and rescue capabilities and the performance of first responders through sustainable training at regional, sub-regional and national levels.*

David Hollister, 1953-2010

David Hollister or better known as Dave to many, worked with ADPC from 1992 to 2002, with many years in charge of the ten-year Asian Urban Disaster Mitigation Program in ten countries and the last three years as a Deputy Executive Director following the establishment of ADPC as a international foundation in 1998.

Dave was a dedicated and innovative professional and contributed greatly to the practice of disaster mitigation in Asia, to the growth of ADPC as an institution, our partnerships with organisations around the region and globally, and to the development of organisations and champions in a number of countries in the region. He pioneered our work on urban risk reduction and spearheaded the Asian Urban Disaster Mitigation Program in 1995.

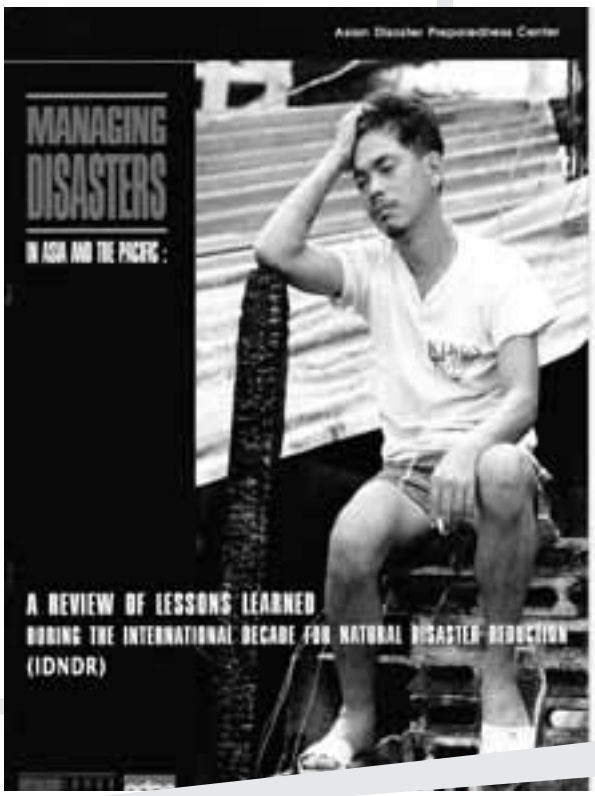
Dave was an architect by profession, but with his fond with humanitarian and development works, he had worked extensively in disaster management and development fields in Asia, Africa and other developing countries for more than 20 years.

Dave passed away in a tragic car accident on March 13, 2010.

ADPC Becomes an Independent Foundation, 1999

The period between 1995 and 1999 was very important for ADPC's organisational capacities too. After a deliberate process spurred by its expanding program activities there was a landmark event when, in July 1999 ADPC became an independent international foundation. The issue of ADPC independence had been a long time intention raised continuously, for example in the 1991 Strategic Plan which noted the need for ADPC to revert to its original concept of an autonomous center, even if initially under the umbrella of AIT. An independent Asian Development Bank study on strengthening ADPC in 1994-95, and a later external independent evaluation supported by AusAID, DANIDA and USAID in 1998 both recommended this eventual independence.

Therefore after 12 years of hard work by a growing staff, guided by three Executive Directors and a significantly expanded program, the Asian Institute of Technology's Board of Trustees endorsed the separation of ADPC from AIT in January 1999. The close and mutually rewarding relationship matured to the point that both organisations accepted that they now served different constituencies and worked towards different goals. Given ADPC's established professional standing, its growing viability with diversified support, both ADPC and AIT agreed at this time that it was appropriate for ADPC to establish itself as an independent center. This would also allow for greater ownership being exercised by its key supporters including the national governments of the region, a growing number of bi- and multilateral donors, UN agencies and international NGOs.



ADPC continued to contribute to the International Decade for Natural Disaster Reduction until its end in 1999. The center co-organised an Asian regional meeting with UNESCAP and the IDNDR Secretariat on "Risk Reduction and Society in the 21st Century", in February 1999 to evaluate regional accomplishments and to provide recommendations for future action. The meeting produced the joint ADPC-IDNDR publication Managing Disasters in Asia and the Pacific: A Review of Lessons Learned During the International Decade for Natural Disaster Reduction which was presented at the concluding IDNDR Geneva Forum in July 1999.

Changing Contexts of ADPC Programming, 2000 – 2010

The International Context

Internationally, as the IDNDR was brought to a close, the successor International Strategy for Disaster Reduction (ISDR) was launched by the General Assembly of the United Nations in 2000 to provide a global framework for action with the objective of reducing human, social, economic and environmental losses due to natural hazards and related technological and environmental phenomena.. It was created with the specific mandate to act as the focal point in the United Nations system for the coordination of disaster reduction and to ensure that disaster risk reduction becomes integral to sound and equitable development, environmental protection and humanitarian action. In this context of global coordination, regional efforts are emphasised as crucial linkages mobilise political and financial commitments to disaster risk reduction, to develop and sustain a robust, multi-stakeholder system; and to provide relevant knowledge and guidance.

Asia had improved significantly in terms of raising awareness about the need and importance of disaster risk reduction on the part of development professionals and ADPC certainly has contributed to this greater significance. Much effort and significant resources have been committed in many Asian countries to enhance national policies as disaster risk reduction rose on their national agendas, however there have been many program activities still to be realised as disasters continue to have huge social and economic consequences for many Asian societies.

Growth of the Institution

Since establishing its independence in 1999, ADPC demonstrated significant growth and important changes, both in its size and its scope of work. The number of staff tripled from less than 30 in 1999 to almost 100 in 2010; the number of its core programs increased from fewer than 10 in the 1990s to more than 70 project activities in 2010. To consolidate its new foundation, in February 2000 the center organised the first meeting of the new ADPC Board

of Trustees with 23 members under the Chairmanship of Dr. Krasae Chanawongse, the former Minister of Foreign Affairs and University Affairs, Government of the Kingdom of Thailand and a recipient of the Ramon Magsaysay Award. The Board of Trustees comprises of representatives from 9 countries in Asia namely Bangladesh, China, India, Japan, Pakistan, The Philippines, Sri Lank, Viet Nam and Thailand, representatives from Australa, Denmark, France, Norway, The Netherlands, Sweden and the United Kingdom, representatives from Cambodia and Nepal as special invitees and the Asian Institute of Technology. Since then, ADPC has held Board meetings annually.

1 The RCC is comprised of 32 members of heads of national disaster management offices, currently representing 26 countries in Asia and the Pacific.

The beginning of the Millennium also marked *two additional new organisational structures of the independent ADPC, namely the Regional Consultative Committee on Disaster Management (RCC) and an International Advisory Council. They were both conceived to provide strategic guidance for the center's future development. The RCC has provided a periodic forum for member governments to share information on national, sub-national and regional priorities and needs with the intention to systematically encourage and facilitate regional cooperation in disaster reduction.*[1] *The nearly annual meetings are organised at different venues in Asia and the Pacific and each has a specific thematic focus which provides a useful opportunity for the members to exchange lessons and to share their best practices across professional disciplines.*

The International Advisory Council was a more informal network of eminent individual professionals and senior officials from governments and other organisations committed to disaster reduction in Asia and the Pacific. Their intended role was to identify disaster-related needs of countries and communities throughout the region and to provide strategic guidance in support of ADPC's institutional growth.

While the current ADPC vision, mission, goals and guiding principles were defined shortly after its independent status was agreed, the center then embarked on a process in the early years of the decade to identify program objectives, indicators and activities under each of its goals. This process resulted in the preparation of an ADPC Strategic Plan 2001-2005 which reaffirmed the shared vision of "disaster reduction for safer communities and sustainable development".

In accordance with the strategic planning process, the center physically reorganised itself in July 2003 to move from a functionally focused organisation to specific thematic areas, in order to work more effectively with a wider range of partners and project implementers while also supporting a multi-sector approach to disaster risk management. The restructuring process resulted in creating five different teams: the Office of the Executive Director, Disaster Management Systems, Urban Disaster Risk Management, Public Health in Emergencies and Climate Risk Management.

ADPC's Expanding Scope of Work

During the course of the decade, ADPC has consciously expanded its scope of work and further developed its own expertise in more specialised areas of disaster mitigation. From the beginning of 2000, ADPC also sought to foster future opportunities in health and responding to complex emergencies through discussions with the World Health Organization, the International Committee of the Red Cross and USAID. Along with the increased awareness of linkages between disasters, development and poverty reduction, public health issues have emerged as a key focus area for disaster managers and development workers alike. The subject has had particular relevance in Asia, as the emergence of global concerns about SARS, Avian Influenza and other pandemic or zoonotic diseases have demonstrated. *The possibility of these growing threats to public safety, and particularly those which hold the possibility of wide population exposure to public health issues or mass casualty management have stimulated ADPC towards new training courses for health emergencies such as Public Health and Emergency Management in Asia and the Pacific, and Hospital Emergency Preparedness and Response.*

In addition, an increase in threatening political developments globally, rising concerns about terrorism or other "non-state" actors engaging in various threats to societies, and technological and other human-induced disaster risks have all contributed to new and growing demands for emergency and rapid response capacities among emergency responders and other services related to national disaster management responsibilities

Community-Based Disaster Risk Reduction has remained one of the center's priority areas of activity. Throughout the 2000s, the focus has been on institutionalising CBDRR and organising national and regional forums with government officials, NGOs and community representatives. *Between 2001 and 2008, ADPC implemented a regional program, the Partnership for Disaster Reduction for Southeast Asia in Cambodia, Indonesia, Lao PDR, the Philippines, Thailand and Viet Nam. Implemented under the DIPECHO*[2] *Action Plans for Southeast Asia, it focused on developing new tools and methodologies, building capacity and using training to integrate CBDRR into national disaster risk management programs and supporting community initiatives to address their own immediate risks.*

2 The European Commission's Humanitarian Aid Department (ECHO) was set up in 1992 to provide rapid and effective support to the victims of crises outside the European Union. Recognising the importance of pre-emptive measures, ECHO launched its disaster preparedness program, DIPECHO, in 1996.

Other new types of programs emerged from the mid-2000s which reflected the growing ability of ADPC to deliver technical assistance in multiple countries in partnership with recognised international organisations. One such activity was the *Flood Preparedness and Emergency Management program implemented in four of the Mekong River basin countries, Cambodia, Laos PDR, Thailand and Viet Nam between 2004 and 2010. The program has been jointly funded by the European Commission's Humanitarian Aid Department and by the Deutsche Gesellschaft Fur Technische Zusammenarbeit (GTZ). The collaboration reflects the overall project management by the Mekong River Commission with technical support, and implementation of specific project activities provided by ADPC.*

A New Era for ADPC, as an Inter-Governmental Organisation, from 2005

At the end of its 20th year ADPC marked an important turning point as the center officially became an inter-governmental organisation in February 2005 through a new Charter. Nine countries signed the Charter as Founding Members: Bangladesh, Cambodia, China, India, Nepal, Pakistan, the Philippines, Sri Lanka and Thailand. The Charter has since been ratified by seven of the nine countries with others expected. The governance of ADPC will assume a new form and role when the organisation acquires full inter-governmental status once all countries have ratified the Charter.

"Thailand as the host country and depository of the ADPC Charter shares the joy of the center on this important occasion. This Charter will now pave the way for ADPC's transformation into a fully-fledged regional organisation with international status, both in terms of governance as well as activities."

Dr. Surakiart Sathirathai
Minister of Foreign Affairs of the
Government of the Kingdom of Thailand

In 2005, ADPC successfully completed the Asian Urban Disaster Mitigation Program in ten different countries. The 10-year program had a significant impact on the attitudes, knowledge and skills in the countries with the long-term support provided by USAID's OFDA. A number of "disaster axioms" were established through program implementation which ADPC has since tried to build into its other program approaches. These include the recognition that: demonstration projects can create a safer built environment; information and awareness programs, training courses and changing policies all need to be kept current; and that capital investment in mitigation in cities was elevated to become the next priority. Another lesson from the 10-year Asian Urban Disaster Mitigation Program was that all disasters are fundamentally human-induced and the direct result of development patterns. Several later programs derived from urban risk activities introduced and then developed applications for the growing use of geo-informatics within ADPC programming and corresponding building of capacity.

An Asia 2020 Strategy based on lessons from the Asian Urban Disaster Mitigation Program was developed in 2004 to provide continued support for disaster mitigation into the next decade. The strategy consists of three distinct programmatic thrusts: the provision of policy and technical support for disaster mitigation programs, emergency management and contingency planning for individual local communities; the development and implementation of public awareness and risk communication strategies; and the use of knowledge and developed experience to build additional institutional capacities.

Thus at the *4th meeting of Regional Consultative Committee on Disaster Management in Dhaka, Bangladesh in March 2004, RCC launched a program with ADPC serving as its secretariat for Mainstreaming Disaster Risk Reduction into Development Policy, Planning and Implementation in Asia. The following 5th RCC meeting in Hanoi called upon every RCC member country to mainstream DRR into development over the coming decade and to undertake priority implementation partnerships.* The RCC member states' commitment to mainstreaming disaster risk reduction into development was confirmed at the 6th meeting of the RCC held in Kunming, China in November 2006 through reemphasising safer development and good disaster risk reduction governance, as well as seeking to "disaster-proof" the Millennium Development Goals' accomplishments.

In an important program initiative approach that suggests future directions, *ADPC signed a memorandum of understanding in May 2009 with the Ministry of Foreign Affairs of the Royal Norwegian Government to collaborate in a range of activities that can reduce disaster vulnerability in Asia. The four related areas identified for cooperation are sharing knowledge and promoting the integration of activities and policy formulation for DRR in the context of sustainable development; building disaster risk reduction capacities in the region in collaboration with technical institutions from Norway; establishing preparedness plans in the health sector in risk-prone countries; and enhancing future collaboration between Asian countries and ADPC's experience in building institutional capacities.* ADPC anticipates that similar combined programmatic approaches will prove to be conducive to longer-termed commitments and sustained engagement with both partner institutions as well as program recipients.

The RCC role has continued to expand as a means to develop programs of wider application and also encouraging more comprehensive program approaches within individual countries. *The 8th meeting of the RCC held in the Philippines in February 2010 had the special theme of "implementing national programs on community-based disaster risk reduction in high-risk communities". The resulting Manila Statement specifically requested ADPC in its capacity as secretariat of the RCC mechanism to develop guidelines on the scope and content of national programs and to provide technical support to countries in pursuing their national programs in CBDRR.*

The expanding scope of ADPC's work during this period led to the establishment of ADPC country project offices in Cambodia in 2005, Viet Nam in 2006, Bangladesh in 2008, Myanmar in 2008 and Lao PDR in 2009.

New Dimension in Post-disaster activities; Response; Needs Assessment; Recovery Program Support

Since it had successfully concluded the first phase of the Program for Enhancement of Emergency Response during 1998 – 2003 in the four countries of India, Indonesia, Nepal and Philippines, *ADPC later joined with the National Society for Earthquake Technology (NSET) in Nepal to continue work during a third phase in nine countries from 2009 to 2014.*[3] The initial work of the program established partnerships with key collaborating agencies in the countries to lay the foundation for the Program. NSET managed the second phase activities, and now both organisations have joined their efforts in the third phase to institutionalise the combined capacities each instilled in the countries to institutionalise more sustainable disaster management programs. ADPC's specific activities in the latest program feature a training program in Community Action for Disaster Response.

While the center's primary focus has been on disaster risk reduction, it also continues to identify newer types of disaster activities where its experience and services are valued. *In May 2008 there were two major disasters which motivated ADPC to take a more direct and active role in immediate disaster relief. The first was when Cyclone Nargis ravaged Myanmar in leaving more than 140,000 people dead, with 2.4 million more severely affected including and over 800,000 people who were displaced from their homes. In response to this disaster, the Tripartite Core Group comprising representatives from the Government of Myanmar, the ASEAN Secretariat and the United Nations, was organised to coordinate external assistance to the devastated country. ADPC was requested to provide emergency technical support to the coordinating office of the ASEAN Humanitarian Task Force by deploying three staff.* This initially involved matters related to fulfilling delivery requirements to the specified arrangements, but was later expanded to include issues related to early and longer term recovery and planning for disaster risk reduction.

In the same month the very strong magnitude 8.0 earthquake struck Sichuan province in China, killing at least 68,000 people. ADPC again was able to provide technical advice on emergency response and later recovery to the Asian Development Bank's assistance program.

3 To the initial four countries, Bangladesh and Pakistan were added in Phase II, and Cambodia, Lao PDR and Viet Nam have now been included in Phase III.

The Lasting Impact of the Indian Ocean Tsunami

Following the unprecedented losses from the Indian Ocean Tsunami in December 2004, ADPC was tasked to design, develop and implement a regional multi-hazard early warning center. The Ministerial Meeting on Regional Cooperation on Tsunami Early Warning Arrangements held in January 2005 in Thailand requested ADPC to provide a crucial component of a coordinated network of early warning centers throughout the Indian Ocean and Southeast Asia. This presented an excellent opportunity for ADPC to work within an international technical framework of the Intergovernmental Oceanographic Commission (IOC/UNESCO) and the World Meteorological Organization. Between 2006 and 2008 ADPC received grants from the UNESCAP Regional Tsunami Trust Fund, supported by the Royal Thai Government, the Swedish International Development Agency and the Danish International Development Agency.

ADPC proceeded to identify and define the appropriate specifications and then acquired and installed the detection, monitoring and communications equipment required. The assignment also included the creation of real-time data-processing and dissemination facilities, which obligated ADPC to recruit and train technical specialists able to manage and sustain a new regional institution. By early 2008, the Regional Early Warning Center (REWC) became operational and was able to provide much needed early warning for hydro-meteorological hazards throughout the region.

In November 2009, an external international technical committee (headed by the Director of the Pacific Tsunami Early Warning Center) endorsed the REWC's technical readiness to provide full tsunami early warning services as prescribed by the IOC/UNESCO for the Indian Ocean region. To assure the sustainability of the early warning center, with the approval of the REWC Steering Committee, *ADPC facilitated the establishment of an inter-governmental entity, the Regional Integrated Multi-hazard Early Warning System for Africa and Asia (RIMES), which assumed institutional, managerial, operational and financial responsibility of the REWC from January 2010. This milestone accomplishment is a testament to common efforts of both international agencies and regional interests to marry shared policy and technical abilities to create a new institutional capacity for early warning and safer communities.*

ADPC's Board of Trustees has continuously supported these expanded roles of the center as more Asian countries pursue dedicated programs in disaster reduction. A Steering Committee was created as a sub-committee of the Board in 2010 to enable more direct Board involvement for strategic guidance within the framework of the ADPC Charter, and in contributing the Trustees' leadership for overseeing the policies and executive management of the center. The most recent Board meeting held in December 2010 was instrumental in finalising plans for the strategic use of the center's 25th anniversary year during 2011 to plan for further accomplishments and expanded resource commitments with ADPC's partners. Consistent with its roots, the emphasis shall continue to be in building safer communities and sustainable development through disaster risk reduction across Asia into the future.

3. ADPC Roles

Though initially established as a training center, over the years the roles that ADPC performs have evolved with respect to progress in government commitments for disaster risk reduction and the demand for wider professional involvement in comprehensive disaster management. These can be broadly categorised as the following:

1. Development of capacities and promotion of learning
2. Dissemination of information and knowledge management
3. Provision of technical and advisory services
4. Implementation of pioneering regional program
5. Preparations and follow up of global and regional mechanisms
6. Establishing new regional mechanisms
7. Support for inter agency coherence and coordination
8. Catalytic facilitator and partner of sub regional mechanisms

The following sections provide a description of the scope of each of these roles and the major actors that ADPC relates to. Comments are provided about the development and performance by ADPC's in these roles, the importance they provide to the institution, as well as citing some challenges in delivering professional values and creating impacts in realising ADPC's objectives.

1 Development of capacities and promotion of learning

Core Disaster Management Training Programs

Providing intensive training on various aspects of disaster management has been the foundation for ADPC's establishment and the primary focus of its activities during its initial years. For the first five years, ADPC focused on training disaster managers from developing countries. The pioneering training course from 1986 became ADPC's "flagship" *Disaster Management Course* (DMC). The six-week course addressed regional interests, provided cross-country learning, and was designed to equip the mid-level managers and practitioner with a variety of skills. Later, the DMC course was shortened to three weeks duration and delivered regularly once or twice a year. The curriculum remained as a balanced introduction to the full spectrum of disaster assessment, preparedness, mitigation and response. The course has been conducted 40 times and many of its alumni credit the course with having provided the basis for their careers in disaster and risk management.

ADPC's second flagship course, on ***Community-Based Disaster Risk Reduction (CBDRR)***, was introduced in 1997 and has been delivered 19 times in the past 13 years. Originally derived from International Federation of Red Cross and Red Crescent Societies (IFRC) approaches on community- based disaster preparedness, it was also inspired by the work of the Latin American Research Education and Development (LaRED). The first course was conducted jointly by ADPC and Duryog Nivaran and then reshaped over the next five offerings through 2001 by drawing on the community-based disaster management experiences of several NGOs working in Asia. The first phase of ADPC's EU-funded Partnerships for Disaster Reduction in South East Asia (PDRSEA) provided an opportunity for ADPC to prepare a robust curriculum. Besides the European support, additional ADPC programs funded by the United Kingdom's Department for International Development (DFID), and USAID enabled the Center to develop customised national versions of the course for Bangladesh, Cambodia, India, Lao PDR, Sri Lanka and Viet Nam. The course has continued to be shaped by curriculum reviews undertaken in 2002 and 2007 and followed by curriculum update.

Along with the Disaster Management Course, this Community-Based DRR training course remains ADPC's most popular course, a distinction borne out by its being participant-funded since inception. Together these two courses have demonstrated ADPC's abilities to develop and deliver courses to a wide range of audiences, meeting their diverse needs without external donor funding. However, the need for updating curriculum, maintaining advanced adult learning teaching techniques, and managing the various learning needs of different audiences against unpredictable participant enrollment remain continuing challenges.

Diversified Training Opportunities

Additional ***specialised training courses on various aspects of disaster risk management with both single and multiple hazard emphasis have remained part of ADPC's portfolio throughout the past 25 years, with shifts in focus based on needs and funding mobilised***. In ADPC's first decade alone, there were five Seismic and Cyclone Hazard Mitigation courses (1992 - 1997) co-organised by the Japanese International Cooperation Agency (JICA) and the UN's Department of Humanitarian Affairs, two other courses on Flood Loss Prevention, Mitigation and Management and a series of eight training workshops on Improving Cyclone Warning Response and Mitigation supported by the European Union between 1990-1993.

From the mid 1990s, the opportunities afforded by the experiences of the Asian Urban Disaster Management Program (AUDMP) contributed to developing training courses related to urban disaster mitigation. These included specific courses on Risk Communication, three hazard-specific courses on **Earthquake Vulnerability Reduction for Cities, Urban Flood Mitigation** and **Technological Risk Mitigation for Cities**. Since their introduction, some of these later adopted a broader focus and became institutionalised as specialised training courses such as Earthquake Vulnerability Reduction and Flood Disaster Risk Management catering to wider audiences. Each of these courses has been conducted nine times over a 10-year period. More recently, a new course was developed around **Mainstreaming Disaster Risk Reduction in Local Governance** and has been conducted four times within the context of ADPC's Program for Hydro-meteorological Disaster Mitigation in Secondary Cities in Asia.

ADPC continues to develop courses to meet the emerging needs in selected thematic sectors, and by building upon the interests associated with ADPC activities in specific countries. Topics such as **Climate Risk Management, End-to-end Early Warning Systems, Incident Command System and Public Health in Complex Emergencies** have all stimulated training courses to address rising interests across Asia. Each of these has now been conducted between three and ten times on a regional basis with fee-paying participants.

Over the years, ADPC has also sought to be responsive to meet the needs of specific institutions, particularly in designing and conducting customised training courses at regional or national levels. Clientele have included national, provincial or local governments, UN Agencies, international NGOs and Red Cross/Red Crescent societies and program staff of local projects. The resulting courses have ranged from shortened versions of regular ADPC courses, to entirely distinctive training designed to meet specific needs of these various actors.

The development of a solid comprehensive curriculum that is tested and refined through use within a program and later institutionalised for wider delivery by charging an instructional fee for participants or client institutions has become a successful marketing strategy for ADPC's training services. While it provides a fixed identity for one of ADPC's well-developed abilities, it also enables training resources to contribute to ADPC's institutional sustainability without being subsidised unduly by other program resources.

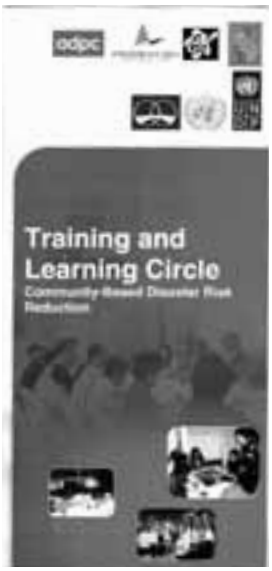
The Lasting Value of Professional Association

ADPC is proud of the many participants, lecturers and contributors that have been associated with its various training courses. The extent to which these training alumni have sought to remain in touch with ADPC, and even more importantly with each other professionally, is a testament to the power of their combined professional dedication and commitment. **The fact that the variety of training opportunities, the many countries and organisations which provided participants, and the very wide range of professional abilities represented have all combined to create an association of more than 5200 disaster and risk management practitioners who have a common bond.**

Partnerships With National Academic and Training Institutions

Another strategy pursued by ADPC for the wider outreach and long-term sustainability has been its efforts to establish and strengthen **partnerships of national training institutions and universities**. The Urban Disaster Mitigation course has worked to become institutionalised in national training programs dedicated to training local administrators. This objective was successfully realised through partial incentive funding from the AUDMP, and later continued by the collaborating institutions charging fees commensurate with local markets or by availing of national or local budgets. This occurred in Nepal, Philippines and Sri Lanka with varying degrees of success. ADPC also sought to develop a network of such collaborating national institutions through an "**Asian Disaster Mitigation Training network" (ADMIT)**, which had 12 institutions from six countries.

Embedding professional development courses into academic curricula for architects and urban planners was a specific objective of the continuing education component of AUMDP. Some success was achieved with some ADMIT partners from India, Indonesia and Sri Lanka. A more robust arrangement was developed under the program on **Capacity Building in Asia using Information Technology Applications (CASITA)**. This latter example developed rich urban planning teaching material for master's degree level programs in universities from several Asian countries including Bangladesh, Indonesia and Sri Lanka.



In order to meet the **continuing learning needs of DRR trainers** in South and Southeast Asia, ADPC served as a regional focal point and secretariat for the process of creating a "**Training and Learning Circle**"; a membership-based, national network of trainers, training institutions and universities offering disaster management.

Although each of these initiatives has merits, they have yet to become a mainstay of ADPC's work in the field. The values they display are crucial to the future as mentoring national institutions; being responsive to their needs and supporting national educational networks are all essential for closer collaboration.

Accreditation of ADPC Training Programs in Higher Education

With the growth of bachelor's and master's degree programs associated with disaster management and risk reduction subjects especially in industrialised countries, and a developing interest in similar studies among universities in Asia, ADPC has attempted to associate its short-term professional development courses with higher education programs through accreditation, credit transfer and recognition of continuing education criteria. Such credit transfer would also serve as an incentive to students or their sponsors, and also a marketing opportunity for the university. The challenge in accreditation in absence of a specific measurement of performance in ADPC courses have been overcome through an optional test added at the end of the course and undertaking a post-course assignment. Such arrangements were operationalised with the **Swinburne Institute of Technology, in Melbourne, and by the Asian Institute of Technology's Masters program on Disaster Preparedness Mitigation and Management**.

Forays into Distance Education

ADPC has been interested in providing structured education through a mix of distance learning and direct contact, ever since 1995. Such distance learning has been considered to be particularly well-suited for the continuing professional development of mid-career DRR practitioners. **Distance instruction in ADPC training courses was an initial step, and later a virtual learning platform was developed under the CASITA program. Another example is the electronic delivery of the Community-Based Disaster and Risk Management course during the fourth phase of the PDRSEA program in 2008**. Unfortunately, progress has been slow and uneven and further direction is needed in the future.

2 Dissemination of information and knowledge management

ADPC has intended to serve as information clearing house and hub for knowledge on disaster management in the region since its inception, and that is an activity that has been central to everything else it has pursued. The pride in ADPC's unparalleled library of gray literature is justified, as the Center has consistently collected publications through participants, alumni, and partners and catalogued them. Over the past decade with the increased reliance on websites, the role of archiving hard copy reference materials has become costly and has diminished Nonetheless experience suggests that past documentation is still worth preserving, and the earlier vision of ADPC serving as the information clearing house of disaster and risk management material for Asia was expressed emphatically in the Asian Development Bank study on Strengthening of the Institutional Capabilities of the ADPC in 1994. Similar views were expressed in strategies proposed for the information management components of the AUDMP and the PDRSEA formulated in 1996 and 2001 respectively. The vision has been constant, and most recently stated as a specific goal in ADPC's strategy for 2010.

Key Publications and Compiled Experience

Significant practical guidance was included in two handbooks on disaster management produced by ADPC in collaboration with the Asian Development Bank in 1991 and 1992. **Disaster Mitigation in Asia and the Pacific**[1], was written to enhance the awareness of developing countries to the need for mitigating the effects of natural disasters through development efforts, to provide documentation on disaster management practices in the region, and to advance the understanding of feasible techniques to implement mitigation practice. The second book, **Disaster Management: A Disaster Manager's Handbook**,[2] was prepared as a ready reference guide for people involved in the management of disasters before, during and after disaster situations. It was published specifically to guide agencies and officials of disaster-prone developing countries, and in that respect was the first of its kind in disaster management operational literature. Together the two volumes also marked the Asian Development Bank's early institutional commitment to support efforts in disaster management, and later risk reduction, throughout its operational domain. These books remain in print, continue to be among ADB's best-sellers and remain in demand after almost 20 years.

Later, to reflect the evolution of disaster risk management during the IDNDR and based on its experiences in implementing regional programs such as the AUDMP, in early 2000 ADPC embarked on an extended effort to develop a series of instructional operational "primers" for practitioners. These thoroughly researched and professionally vetted volumes were designed to provide basic concepts, terminologies, effective methodologies and available techniques to engage in actions that could reduce disaster risks in the practical circumstances of the reader's daily work. The first volume, **A Primer on Disaster Risk Management in Asia** was developed over three years in close consultation

1 Asian Development Bank, Manila, 1991. ISBN 971-561-004-8.
2 By W. Nick Carter, Asian Development Bank, Manila, 1992. ISBN 971-561-006-4.

with numerous local, national and international experts in disaster risk management and published by ADPC in 2005. In the same period a second volume was produced during the same period which focused on floods, **A Primer on Integrated Flood Risk Management in Asia**. This effort by ADPC to produce thematic primers continues presently with three more volumes planned for publication by 2012 on the subjects of urban risk reduction, climate hazards risk management, and mainstreaming disaster risk reduction into development. An additional handbook on recovery program planning and implementation also is planned.

The development of other knowledge products concerned with various thematic areas relevant to disaster risk management has remained an important function of ADPC. Primarily targeted at practitioners, examples include the **Field Practitioner's Handbook for CBDRM**, **the Critical Guidelines on CBDRM**, **Guidebook on Advocacy for CBDRM** and a **Media kit on CBDRM**.

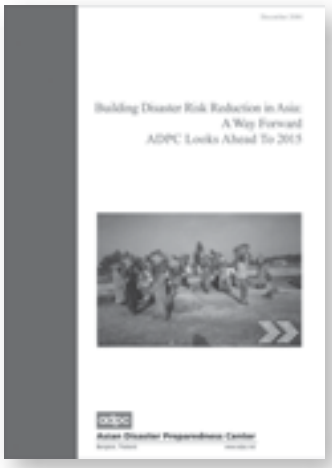
Program Case Studies

Over the years as ADPC increased its implementation of project activities, it has continued to compile and disseminate its accumulated experience through three sets of case studies: **Safer Cities, Safer Communities and Safer Development**. The Safer Cities series began from the AUDMP and has continued since as part of the Program for Hydro-Meteorological Disaster Mitigation in Secondary Cities of Asia. It presently consists of 29 case studies and illustrates how people, communities, city officials, governments and businesses have been able to make cities safer before disasters occur. Similarly, the 15 case study booklets in the Safer Communities series focus on the experience gained during the seven years of implementing the Flood Preparedness Programs in the lower Mekong basin. The eight titles in the Safer Development series reflect the primary examples of implementing partnerships under the RCC Program on Mainstreaming Disaster Risk Reduction in Development.

Proceedings of Periodic Regional Forums

Organising periodic forums to providing opportunities for the exchange of information and experience among contemporaries has been an important focus of ADPC's work. The publication of forum proceedings in hard copy and on the internet, provides avenues for wider dissemination of these lessons learned. For example, the publication of proceedings of the Regional Workshop on Best Practices in Disaster Mitigation: Lessons Learned from the AUDMP and other initiatives, held in 2002 in Bali, provides critical reflections on themes fundamental to urban disaster mitigation and in

many ways provided a number of "disaster axioms" which were established through program implementation in urban areas and which ADPC has since tried to build into its other program approaches. In the thematic area of CBDRM, the proceedings from a series of five Disaster Management Practitioners Workshops organised by ADPC in collaboration with UNESCAP and IFRC, from 2001 to 2009 provides a rich record of the evolving experience and diverse approaches used which shaped ideas and subsequent action. So too proceedings of the regional workshops on Innovative practices in Flood Risk reduction in Khon Kaen in 2007and Luang Prabang in 2011 spread the word and shaped wider replication of these practices.



Publications for Major Conferences

Since 1990s ADPC has been well placed in its efforts to contribute as well as receive guidance from global agenda on disaster risk management. As a contribution to the global discussions, it has developed publications, which reflect key concerns in the region, reviews ADPC contribution and provides overview on needed future directions. As a regional focal point for the International Decade for Natural Disaster Reduction (IDNDR) in Asia, ADPC supported the IDNDR strategy for the region by preparing a mid-term review of IDNDR efforts in South and Southeast Asia in 1994 and circulated at the World Conference in Yokohama. It co-organised an Asian regional meeting with UNESCAP and the IDNDR Secretariat on "Risk Reduction and Society in the 21st Century", in February 1999 to evaluate regional accomplishments and to provide recommendations for future action, and produced the joint ADPC-IDNDR publication **Managing Disasters in Asia and the Pacific: A Review of Lessons Learned During the International Decade for Natural Disaster Reduction** which was presented at the concluding IDNDR Geneva Forum in July 1999. In 2005, for the World Conference on Disaster Reduction, held in Kobe, ADPC's paper entitled **ADPC's Look Ahead Towards 2015**, provided an overview on how ADPC is responding to evolving issues in disaster risk management and focusing on key themes including urban, health, community and climate. More recently, in 2008 ADPC in partnership with Asian Disaster Reduction Center and UNISDR developed the joint publication on **Regional Synthesis Report on HFA Implementation in Asia and the Pacific** during 2005 to 2007. Based on the reports submitted by countries to the World Conference on Disaster Reduction in 2005 and First Session of Global Platform on Disaster Risk Reduction in 2007, the synthesis presented the progress made against the core indicators of HFA priorities in the first three years after HFA adoption, identifies challenges and provides recommendations for action by Government and partners.

ADPC Website

The ADPC website was established in 1997 and has evolved over the years. It primarily still serves the purpose of hosting information on all activities undertaken by ADPC, program outputs and documents. It has never fully realised its function ofproviding a platform for other partners to share information on their programs and highlight upcoming important events in the region on disaster risk reduction, except when these were an active part of the program activity in itself like the ADPC newsletter, thematic web pages on urban risk reduction, CBDRM and mainstreaming disaster risk reduction in development. Some recent efforts at utilising the increased interactive functionality of the web and the power of the social media, were to host e forums and the CBDRM web based course under PDRSEA, a virtual learning platform under CASITA, and an attempted online dialogue among practitioners in the run up to the 4th AMCDRR and an ADPC Facebook page and Twitter feed, with a specific page for PEER Phase 3. More robust have been the program initiatives of the CBDRM database and the DRR Project Portal developed under the auspices of the ISDR Asia Partnership, but the challenge remains how to integrate these into the routine functions of information and knowledge management at ADPC.

ADPC Newsletters

The **Asian Disaster Management News** is the longest lasting information product to come out of ADPC. Launched as a news letter in 1987, it has expanded its scope in the late 90s beyond just news on ADPC organised events and has focused on a specific theme in every issue with articles by ADPC staff and writers and thinkers from the region or worldwide. Over the 25 years there have been 18 volumes of the newsletter with 70 issues. In addition there have been two more project based, thematically focused Newsletters. These include the e news letter called "Disaster Mitigation in Asia, begun in 1999 under AUDMP, continued under PROMISE and published approximately once in 2 months with a total of 74 issues published to date. So too the print newsletter " CBDRR in Asia" begun under PDR SEA as its newsletter, and later continued under TLC till 2010. A total of 6 volumes and 16 issues were published.

DRR related Databases

Linked with website are efforts to develop and maintain databases on initiatives on disaster risk reduction, with a purpose to improve synergy during implementation. An early example of it includes the **database developed for practitioners focusing on CBDRM in South East Asia**, to provide information on CBDRM related projects implemented in the region, to maintain a roster of organisations, academic institutions, training courses and experts as well as good practices, tools and publications. This was robustly and imaginatively conceived, and executed with dedication by ADPC staff and partners, but has not yet been able to sustain itself and expand, beyond program funding. Herein lies a challenge for ADPC, to be able to convert its project initiatives into products focused and branded thematically and meeting specific needs of a particular group to sustain itself.

The other database is the ongoing initiative being implemented under the umbrella of ISDR Asia Partnership (IAP) and to which ADPC is acting as a executing agency. This initiative has developed a robust online system to host information on DRR projects being implemented in Asia-Pacific since 2005. The system or better known as the **DRR Project Portal** (www.drrprojects.net) is envisaged to act as platform for improving synergy, building coherence and cooperation among partners involved in implementation of DRR by providing update information on 'who is doing what and where'.

3 Provision of technical and advisory services

Short duration consultancies

Providing technical advice has been a core service of ADPC, since its inception. These assignments have been undertaken for a range of partners and over a wide array of themes and type of inputs. They have contributed in developing institutional capacities and reputation of ADPC and have played an instrumental role in future partnerships with the institutions thus served. Such institutional involvement in delivering service has also been beneficial to the client, who has the benefit of an institution behind its recommendations. These services as described in the adjacent box, typically include program design, program evaluation, documentation of good practices, developing manuals for practitioners or supporting development of institutional strategies.

However, there are specific challenges when implementing such short-term consultancies. First of all, most of these assignments come with expectations for delivery of discrete services, normally part of larger project and programs, where ADPC has not been involved and hence the challenge of not having enough information. Secondly, contrary to the earlier practice of ADPC deploying international experts for specific assignments, increasingly ADPC staffs with specialist expertise and experience are nowadays deployed to work on these short-term assignments and hence the challenge to balance it with other ongoing program implementation they are involved in. Lastly, in case of post-disaster situation, there is often expectation from ADPC to participate in response related activities and in post disaster assessment. These are invaluable experiences for ADPC staff, however is a strain on ADPC's human resources.

Program Design	1. ***ASEAN Regional Program on Disaster Management***, ASEAN Committee on Disaster Management : 2002-2003 2. ***Prevention and Mitigation Component of the Agreement on the Disaster Management and Emergency Response Work Program***, ASEAN Committee on Disaster Management : 2009 3. ***Component 4 of Flood Management and Mitigation Program***, MRC and GTZ : 2003 4. ***Asian Regional Community Resilience Program***, World Vision : 2007 5. ***Co-designing several Programs of LANGOCA***, Save the Children Australia : 2006-2008
Program Evaluation	1. ***Cyclone Preparedness Program in Bangladesh***, Red Cross and Red Crescent Societies : 1995 2. ***Setting up Disaster Management Center in Viet Nam***, Red Cross and Red Crescent Societies : 1997 3. ***Emergency Shelter Program in Viet Nam***, Red Cross and Red Crescent Societies : 2001 4. ***Disaster Risk Management Program in India***, Government of India- UNDP : 2009 5. ***Post Typhoon Ondoy Recovery Program in Bicol Region, Philippines***, UNDP Philippines : 2010
Documentation of good practices	1. ***Building Safer Communities in South Asia***, IFRC and Bangladesh Red Crescent Society : 2007 2. ***Compendium of Good Practices on CBDRR in South Asia***, SAARC Disaster Management Centre : 2009
Manual for practitioners	1. ***Disaster Management Training Manual***, Ministry of Civil Affairs China : 1997 2. ***Training Manual on CBDRR***, National Red Cross and Red Crescent Societies of South Asia : 2008-09 3. ***Manual on Hazard Vulnerability Capacity Assessment***, Netherlands Red Cross and Viet Nam Red Cross : 2009-10 4. ***Manuals on School Preparedness, Search & Rescue, First Aid and CBDRR***, UNDP Myanmar : 2009 5. ***Manual on Exercise Design and Management***, KEENAN Institute and ASEAN : 2008-09 6. ***Module on ICT and Disaster Management***, UNESCAP : 2010-11
Institutional development strategies	1. ***National Disaster Management Centre Srilanka***, Government of Srilanka : 1998 2. ***Disaster Management and Mitigation Centre in Uttaranchal (India)***, Government of Uttaranchal : 2001 3. ***Institutional Strategy Planning Session of Tsunami & Disaster Mitigation Research Centre in Aceh***, Government of Indonesia : 2009 4. ***National Disaster Management Training School in Myanmar***, Government of Myanmar : 2010 5. ***ASEAN Centre for Trans-Boundary Haze Pollution Control***, ASEAN : 2003 6. ***ASEAN AHA Centre***, ASEA***N*** : 2006-09

4 Implementation of pioneering regional programs

Regional Programs

In a definitive way since 1995, and begun as early as 1988, programs, especially regional programs have been the key way of 'business" at ADPC. Thematic regional programs were specifically enshrined in the mission statement of ADPC's strategic plan 2000 to 2010: " developing and demonstrating innovative disaster risk reduction practices". Such programs are, multi year and multi country and have multiple components covering a range of activities including demonstration projects, advocacy, capacity and institutional development, and knowledge sharing. A common characterisation of these programs at ADPC is a **"series of thematically linked but differentially organised national projects"** that often have distinct national characteristics. The regional element promotes economies of scale in planning and tool development and benefit from peer learning between countries. Some of the pioneering thematic work undertaken by ADPC arose from the following four regional programs:

- Improving Cyclone Warning, Response and Mitigation (ICWRM) implemented from 1988 to 1991
- Asian Urban Disaster Mitigation Program (AUDMP) implemented from 1995 to 2005
- Extreme Climate Events Program (ECE) implemented from 1998 to 2002 followed by Climate Forecast Applications (CFA) from 2003 to 2009
- Public Health and Emergency Management in Asia Pacific (PHEMAP) implemented from 2001 -2010,

These initial four programs have paved the key ways for developing and implementing new programs and projects (both regional and national), thus contributing to mobilisation of resources and overall stabilisation the organisation. The programs are discussed in detail in section 4 of this document.

Incubator for innovative good practice pilots

In many sense these regional programs have acted as incubators for good practice pilots. For example the **AUDMP** introduced the innovative element of working directly with cities to focus on a particular hazard and addressing range of DRR interventions. Even more than the impact in the specific cities, the experience in more than 20 pilot cities spread over 10 countries, gave a diverse base to draw some generic lessons on how to undertake urban mitigation projects. The diversity of city partners in providing technical assistance also allowed for experimenting with different types of partnerships. Of course the other contribution of kick starting, or accelerating growth of new entities such as the National Society for Earthquake Technology-Nepal, Institute Technology of Bandung in Indonesia, Centre for Housing Planning and Building and National Building Research Organization in Sri Lanka was another example of ADPC's role in incubating "champion institutions"

So too the **ECE** and **CFA** programs nurtured the concepts of downscaled climate outlooks, identifying sectoral impacts, using climate information to advance beneficial impacts of early information, and to way flow of information between users and produces of climate information. It also built partnerships between the national meteorological agencies and their counterparts in development ministries particularly agriculture and water resources, to take decisions well in advance based on projected patterns of precipitation as well as long-term partnerships with United States' National Ocean and Atmospheric Administration and The National Center for Atmospheric Research at the Georgia Institute of Technology in Atlanta.

Similarly the **PHEMAP** and its national courses triggered the development of national Emergency Health/Medicine programs. Moreover, it has now lasted for over 10 years and has allowed a meaningful area of specialised work to take deep roots. More importantly, in countries, a tangible program has developed, and been a fertile environment for the mass casualty management, hospital preparedness and later safe hospitals campaign and program.

Four important ideas were incubated/legitimised under **PDRSEA** as follows: Firstly the evolvement of national networks of NGOs/CBDRM practitioner organisations to periodic forums and finally leading to joint programming such as the case of Joint Advocacy Network Initiative in Viet Nam and Joint Activities Group in Cambodia. Secondly the need for documentation of experience and lessons learned across the cluster of projects implemented by different organisations. Thirdly, common capacity building through training and development of manuals. Lastly an initial effort at harmonising methodologies and setting common approaches / "standards" for CBDRM. The RCC Program on Mainstreaming Disaster Risk Reduction into Development program has made several contributions to innovation in practice. These include moving mainstreaming from an advocacy concept to an operational activity in government by undertaking Priority Implementation Partnerships (PIP) and laying out specifics, no doubt in bare essentials a 27 point list of specific action areas for mainstreaming, across the development agenda.

Support to networks of practitioners and institutions

The regional programs have also established networks of practitioners and institutions such as the ADMIT, PDRSEA practitioners network, CASITA, TLC and National network of NGOs. There is mixed experience in sustainability of these mechanisms after the nurturing environment of project financed meetings and activities has dwindled. CASITA and the national networks have been more successful at continuing in a low cost, no cost modality. ADPC has had a range of relationships to these national networks from being a member, a close partner, one source of idea sustenance and a facilitator of dialogue and showcasing the work of these partner networks.

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5 Preparations and Follow up of Global and Regional mechanisms

One role that ADPC has played throughout its life is to serve as an active, well-informed voice at global and regional forums and mechanisms, representing Asian perspectives and experience, and contributing to and shaping the discourse. It has also seen as its responsibility to serve as a disseminator of the outcomes of the global forums and as well as an institution in Asia which supports the implementation of these commitments in countries of the region.

World Conference on Disaster Reduction

Since the late 1980s, ADPC has lent a regional voice to the global advocacy of the scientific community for a decade for disaster reduction. It was involved as a key regional partner throughout IDNDR. In the run up to the World Conference on Natural Disaster Reduction in Yokohama in 1994, ADPC held a consultation and provided an pan Asian perspective on DM. With the increased community focused orientation in the **Yokohama Strategy for a Safer world**, some of the milestones in ADPC partnership with the Decade included the collaboration between the IDNDR Radius Project and the AUDMP; co-organising the World Disaster Reduction Day campaigns every October with UNESCAP and the IDNDR Secretariat, the release of ADPC-IDNDR publication "Managing Disasters in Asia and the Pacific: A Review of Lessons Learned During the

International Decade for Natural Disaster Reduction" as an input to the Geneva Forum in July 1999 whose deliberations led to the establishment of the International Strategy of Disaster Reduction (ISDR).

At a regional level, ADPC actively contributed to pre WCDR 2005, Kobe consultations and deliberations shaping some of the global frameworks. At its **4th Meeting of the RCC** held in Dhaka in 2004, which acted as a **preparatory event in Asia for the WCDR**, it organised a special session in partnership with UNISDR on the preparations of the WCDR. The session facilitated discussion on the constraints faced by the various countries for effective disaster risk management in their respective countries, processes for national reporting and information for WCDR 2005, Kobe and priorities that need to be addressed. So too, the **5th Meeting of the RCC** acted as a **follow-up event in Asia for the WCDR**, with a special consultation session organised in partnership with UNISDR and UNDP on the implementation of the HFA. The session introduced the HFA, the concept of National Platforms and provided good examples of the implementation of the HFA by National Governments. The objective was to ensure that the HFA is kept on the agenda of the RCC Member Countries such that its implementation is discussed and planned for in the future. Subsequent RCC meetings (2006, 2008, and 2010) have discussed implementation of HFA in Asia and contributed to preparation and follow up of the 1st and 2nd session of the Global Platform for DRR in 2007 and 2009.

UN Inter Agency Task Force on DRR (2000 to 2006)

At the closing of IDNDR, ADPC was invited to be a member of the 22 member **UN Inter-Agency Force on Disaster Reduction (UN IATF DR)** and maintained close relationships with International Strategy for Disaster Reduction (ISDR) which was adopted by the UN General Assembly in 2000 as a successor to the IDNDR. ADPC served as one of 6 regional entity members of the UN IATF DR, and with ADRC was one of two members from Asia, throughout the period 2000 to 2006, when the IATF expanded into the Global Platform on Disaster Risk Reduction. ADPC served on several of the IATF working groups including on the Preparatory committee of the WCDR 2005, and the later Thematic Platforms. With others, ADPC was an active advocate for giving shape to the organisational concepts of the ISDR System, Thematic and National platforms. In partnership with DKKV (the German National Platform) ADPC conducted a study in 2005/2006 on the potential and role of national platforms in Asia.

Steering Committee of ProVention Consortium (2000 to 2007)

ADPC was consulted and involved in the foundation of ProVention Consortium, served as a member of the **ProVention Steering Committee** from 2000 to 2007, and worked closely with the Consortium on specific projects in Asia. It was an important advocate for regional replication of the ProVention partnership arrangements in each of the regions, and contributed to the decision to move the annual meetings away from Washington and Geneva. ADPC actively participated in the ProVention Forums in Bangkok (2006) Tanzania (2007) Panama (2008) and Istanbul (2009) and facilitated the 3 phases of the ProVention Applied Research Grants Program in Asia.

IOC working group to establish Indian Ocean Tsunami Warning System (IOTWS) 2005 to 2010

Following the Indian ocean tsunami and the IOC led initiative to establish an Indian Ocean Tsunami Warning System, ADPC was an active participant in the planning meetings and conferences in 2005, and the technical Working Groups established, particularly Working Groups 3 and 6 dealing with "technical specifications" and "preparedness and mitigation"

Asian Ministerial Conferences on Disaster Risk Reduction

ADPC has been a key partner of the Asian Ministerial Conferences on DRR (AMCDRR), which serves as the Regional Platform on DRR for Asia. Till date for each of the Asian Ministerial Conference on DRR, namely 1st AMCDRR in 2005 in Beijing, 2nd AMCDRR in 2007 in New Delhi, 3rd AMCDRR in 2008 in Kuala Lumpur and 4th AMCDRR in 2010 in Incheon, ADPC has worked closely with the respective governments and UNISDR Asia Pacific in preparations and follow up of the events.

As emphasised by the Beijing Action for DRR in Asia, adopted at the 1st AMCDRR, intergovernmental meetings such as the RCC organised by the ADPC, were considered as important mechanisms that provided opportunities to review progress of HFA implementation in Asia. Thus from RCC 7 onwards, special session was introduced to brief on the preparation of the forthcoming AMCDRR and discuss the follow of the previous meeting. Accordingly, the **RCC 7** held in Colombo, 2008 discussed the preparations of the 3rd AMCDRR. Further the RCC 7 meeting agreed on the greater integration of RCC into the regional and global system namely linkages with the AMCDRR and Global Platform for DRR and greater alignment of meetings organsied by UNISDR Asia Pacific, ADRC and ADPC. The meeting recognised that intensive discussion among senior officials was needed and the RCC served as a welcome forum and mechanism to translate ministerial commitment, as reflected in AMC Declarations, into action. It encouraged **RCC to serve in preparing for, and following up on, Regional and Global Platform Meetings**. Further based on the call made by the Kuala Lumpur Declaration on Disaster Risk Reduction adopted at the 3rd AMCDRR, for the ISDR-Asia Pacific Regional office to collaborate with IAP members to prepare a regional action plan on the three declarations of the AMCDRR till date, ADPC provided technical support as a member of the IAP and secretariat of the RCC to develop the **HFA Implementation Regional Action Plan** (HIRAP).

So too the **RCC 8 Meeting** held in Manila, 2010, included a session on consultations with RCC members on the preparations for the 4th AMCDRR. The session provided an opportunity for the RCC member from the Republic of Korea namely National Emergency Management Agency to brief the other RCC members on the preparations and to seek their guidance. The meeting greatly benefited from the inputs of past hosts of AMCDRR namely Government of China, Government of India and Government of Malaysia.

At the 4th AMCDRR, ADPC acted as one of the technical chairs for the event along with ADRC and UNESCAP and supported the Republic of Korea in formulating the

outcomes of the meeting namely the Incheon Declaration, Incheon Road Map and Incheon Action Plan on DRR.

Member of WMO/UNESCAP Typhoon Committee and Tropical Cyclone Panel since 1990

Since 1986, ADPC has been a special invitee to both the regional networks set up by World Meteorological Organization (WMO) and UNESCAP, i.e. the Tropical Cyclone Panel (TCP) in the WMO region 5 i.e. Indian Ocean, and the Typhoon Committee (TC) WMO region 6 South China Sea and West Pacific. It has actively collaborated with the Secretariats and particularly with the activities of the Technical Working Group on Preparedness and Mitigation. In 2006 to 2008, ADPC and UNESCAP made a further effort in convening joint forums of the ASEAN's ACDM, Haze Technical Task Force (HTTF), Typhoon Committee (TC) and the Mekong River Commission (MRC) to promote dialogue and collaboration between these four mechanisms in South East Asia.

6 Establishing New Regional Mechanisms

Regional Consultative Committee on Disaster Management

In 2000, ADPC established a mechanism called the Regional Consultative Committee on Disaster Management (RCC) to identify the disaster-related needs and priorities of Asian countries, to develop action strategies and promote cooperative programs on a regional and sub-regional basis; and provide strategic guidance to ADPC in its future activities. This was possible because of the long-standing relationship that ADPC enjoyed with the National Disaster Management Offices in Asia as well. The RCC comprised of members who are working in key Government positions in the national disaster management systems of 26 countries in Asia-Pacific. Recognising the value and importance of such periodic meetings, in the Bangkok RCC 2 Declaration adopted at its second meeting in 2001, the RCC established itself as a mechanism and mandated ADPC to serve as its secretariat The above role of the RCC was formally enshrined in the Intergovernmental Charter of 2005, with a special status as one of ADPC's governance mechanisms. A mechanism of Chair and Vice Chair has been established since 2006, with the host country serving as chair and the incoming host serving as vice chair. Over the last 10 years, eight meeting of the RCC has been held at different venues in partnership with host countries. UN Agencies and DRR development partners in the region are invited as observers and RCC partner agencies.

The RCC has served countries as a valued regional intergovernmental "closed door" forum for candid exchange, peer learning and networking among national government DM and DRR leaders. Over the years, the mechanism has been strengthened and owned by the member countries. This is reflected in the continued ministerial participation and presence in the meetings, high level of representatives from national agencies of planning and sectoral ministries, generous support by host countries in organising the meeting and interest and willingness of countries to host future meetings. The candid exchange of views among the governments at the meetings have emphasised the importance of regional cooperation and better synergy among partners at regional level for improved coherent support to countries.

The Bangkok declaration of 2001which prioritised action areas for RCC and ADPC in the decade 2001 to 2010, have over the years helped shape the thematic and program direction of ADPC.

So too in 2004, the RCC took a turning point in consolidating the RCC mechanism and moving form valued talk shop towards a more action-oriented venue to shape actions. The RCC Program on Mainstreaming DRR into Development Policy, Planning and Implementation in Asia, launched in 2004, has had valuable impact as described in section 4 of this publication. Another milestone was the deliberations on National Programs on CBDRM and the Manila RCC 8 Statement on Implementing National Programs on CBDRR in High-Risk Communities.

Over the last decade the RCC has strengthened ADPC's working with Governments and enabled ADPC to play a meaningful role in the regional DRR architecture. The RCC represents a purposive forum, and plays a unique pan Asian role in the plethora of regional meetings, duly aligned with and a Senior Officials Meeting (SOM) supportive of the Ministerial meetings.

REWC to RIMES: regional Multi hazard End-to-End early warning System

Following the unprecedented losses from the Indian Ocean Tsunami in December 2004, ADPC was among several agencies confronted with the challenges of developing a sustainable Indian Ocean Tsunami Warning System. The Ministerial Meeting on Regional Cooperation on Tsunami Early Warning Arrangements held in January 2005 in Thailand requested ADPC to provide a crucial component of a coordinated network of early warning centers throughout the Indian Ocean and Southeast Asia and became the basis of ADPC efforts to design, develop and implement a regional multi-hazard early warning center. This presented an excellent opportunity for ADPC to work within an international technical framework of the Intergovernmental Oceanographic Commission (IOC/UNESCO) and the World Meteorological Organization (WMO). Between 2006 and 2008 ADPC received grants from the UNESCAP Regional Tsunami Trust Fund, supported by the Royal Thai Government, the Swedish International Development Agency and the Danish International Development Agency.

ADPC proceeded to identify and define the appropriate specifications and then acquired and installed the detection, monitoring and communications equipment required. The assignment also included the creation of real-time data processing and dissemination facilities, which obligated ADPC to recruit and train technical specialists able to manage and sustain a new regional institution. By early 2008, the Regional Early Warning Center (REWC) became operational and was able to provide much needed early warning for hydro-meteorological hazards throughout the region.

In November 2009, an external international technical committee (headed by the Director of the Pacific Tsunami Early Warning Center) endorsed the REWC's technical readiness to provide full tsunami early warning services as prescribed by the IOC/UNESCO for the Indian Ocean region. To assure the sustainability of the early warning center, with the approval of the REWC Steering Committee, ADPC facilitated the establishment of an inter-governmental entity, the Regional Integrated Multi-hazard Early Warning System for Africa and Asia (RIMES), which assumed institutional, managerial, operational and financial responsibility of the REWC from January 2010. This milestone accomplishment is a testament to common efforts of both international agencies and regional interests to marry shared policy and technical abilities to create a new institutional capacity for early warning and safer communities.

7 Support for inter agency coherence and coordination

Organiser of Annual Inter-agency Consultative Meetings in 2001, 2002 and 2004

ADPC has been at the forefront of efforts to enhance coordination and cooperation among regional organisations and regional offices of UN agencies in the region. A first consultative meeting on regional cooperation in Disaster Management was convened by UNOCHA and ADRC in Kathmandu in July 2001. This meeting called on firstly the national authorities and the donor community to adopt a common comprehensive disaster risk management framework, identifying the full range of activities required to effectively mitigate and manage risks, secondly for ADPC, ADRC and UNOCHA to take stock, establish and maintain a database of current and future activities undertaken by the governments and agencies; and lastly the donor agencies to coordinate Total Disaster Risk Management (TDRM) interventions among themselves. Based on this call and continuing discussions among key participating agencies; ADRC, ADPC, UNOCHA, UNDP and WHO agreed among themselves to collaboratively organise a series of regular meetings to serve as a forum for sharing information among regional institutions and regional offices of international organisations and identify opportunities for enhanced collaboration in ongoing work. A second and third meeting co-organised by the above were held in June 2002 in Bangkok and February 2004 in Manila. The 3rd meeting urged ADRC, ADPC and UNDP to work together to undertake a stocktaking of 'who is doing what and where' at national and regional level.

Active Member of ISDR Asia Partnership

To take forward the agenda of improving regional cooperation, the six member agencies of the UN IATF, the UNISDR, ADPC, ADRC, UNDP, UNOCHA and UNESCAP, took the initiative of launching in 2003 an open-ended regional partnership called the **ISDR Asia Partnership (IAP)**. The IAP's aim was to promote disaster reduction in the region by conducting strategic initiatives in countries or sub-regions in partnerships with other entities, support the process towards the WCDR, nurture a forum for discussion, experience sharing and information exchange to allow all sectors of civil society to have a say and to become active players, ensure that recommendations adopted at WCDR are followed up in the region and paving the way for further development in the region, including fund raising for major projects in areas such as education, information management and regional networking. With limited resources, and even without the presence of an ISDR regional office till March 2005; ADPC and ADRC took the joint responsibility of producing the first two issues of the Asia regional publication "**ISDR Asia Informs**" and organising preparatory meetings for and a special session at the WCDR in Kobe in January 2005. As a founder member of the IAP, ADPC took an active lead in 2007, at the first session of the Global Platform on Disaster Risk Reduction, to organised an IAP special session on 'Working towards community resilience in Asia: Innovative efforts of IAP members and stakeholders'. In September 2007, the IAP was expanded and six functional roles identified. ADPC, UNESCAP's DRR Division and ADRC, as IAP member organisations devoted full time to DRR, work closely with UNISDR Asia Pacific to deliver on the six identified functions.

One function, which built on the longstanding need identified since 2001, was to undertake regular stocktaking and mapping of DRR interventions in the region with an aim to improve synergy and coherence. Accordingly the **IAP initiative on Regional Stocktaking and Mapping of DRR interventions** was initiated in February 2009. ADPC as a technical agency and member of the IAP acted as the executing agency of the IAP initiative and developed the online portal for DRR projects (www.drrprojects.net). It is currently developing the outline framework and design of the DRR Project Partnership Marketplace (DPPM). These are key tools and systems for fostering cooperation, and minimising overlap, a much-desired objective that ADPC sincerely works hard to achieve.

ADPC's role in another core IAP function, namely the planning, organising and follow up of the Asian Ministerial Conferences on Disaster Risk Reduction (AMCDRR) has already been described earlier. So too, ADPC's stewardship and contribution to shaping the HFA Implementation Regional Action Plan and Incheon Action Plan on Disaster Risk Reduction, the two action plans to implement the outcomes of the four AMCDRRs, has been based on promoting effective and coordinated joint interagency collaborations in delivering organised coherent support to countries of the region.

Member of Regional Thematic DRR Task Forces: Education, Environment and Urban Risk

Recognising the importance of inter agency partnerships in bridging the link between key sectors and DRR, ADPC has been in the forefront in establishing 'theme based partnership mechanisms' in the region and more importantly actively participating and advocating for information sharing, networking and joint action by the mechanisms. Some of these have been triggered by the Global DRR campaigns of the ISDR system. Examples include the **Regional Task Force on Education and DRR, the Regional Organising Committee for the Global Safe Hospitals Campaign, the Disaster and Environment Working Group of Asia** and **the Regional Urban Task Force on Disaster Risk Reduction**. Each of these working groups / taskforces has its mirror global taskforce of the ISDR system, the so called Thematic Platforms on Education, Health, and Environment &DRR and the Local Government/Cities Alliance for DRR.

8 Catalytic facilitator and partner of subregional mechanisms

ADPC has been partnering with sub-regional intergovernmental mechanisms since its earliest days. Recognising the increasingly important roles of sub-regional mechanisms and with the priority attached by Governments attending the first two RCC meetings; ADPC has prioritised working with and enhancing the effectiveness of regional action led by sub-regional mechanisms. This includes the political and economic cooperation forum of Association for South East Asian Nations (ASEAN), South Asian Association for Regional Cooperation (SAARC), South Pacific Applied Geoscience Commission (SOPAC); Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) the Asia-Pacific Economic Cooperation (APEC) and the ASEAN regional forums; as well as technical and specialist regional mechanisms including Mekong River Commission and International Centre for Integrated Mountain Development (ICIMOD). This kind of partnership was prioritised in the RCC 2, Bangkok Declaration of 2001, ADPC Strategy Plan of 2000-2010, which called for "enhancing effectiveness of sub regional mechanism named above" as a priority area for the RCC and ADPC.

Association for South East Asian Nations (ASEAN)

ADPC has participated in meetings of the ASEAN experts group on Disaster Management (AEGDM) since 1993; and first offered technical assistance to the ASEAN secretariat in 1996. With the acceptance of this offer in the 10th meeting of AEGDM, ADPC supported the development of the **ASEAN Regional Program on Disaster Management (ARPDM)**. The ARPDM was launched in 2004 by the newly established ASEAN Committee on Disaster Management (ACDM) and covered six-year period till 2010. ADPC continued to support the ACDM in implementing specific components of the ARPDM such as the one on public education and awareness and specific training courses. *Following the passage of the ASEAN Agreement on Disaster management and Emergency response (AADMER), ADPC provided support for the development of the prevention and mitigation component of the AADMER work program and in capacity building of focal points and competitive authorities on implementing responsibilities under AADMER and its Standby Arrangements and Sandard Operating Procedures (SASOP).*

Following Cyclone Nargis in Myanmar in 2008; and the role, played by the ASEAN Humanitarian Task Force; ADPC seconded three staff to serve as ASEAN Hub Officers in the delta. Subsequently ADPC supported ASEAN Humanitarian Task Force and ASEAN in their work with Myanmar Government and the UN Agencies in developing guidelines on Mainstreaming DRR into recovery operations.

ASEAN Regional Forum - Inter Sessional Meeting on Disaster Relief (ARF ISMDR)

Since early its establishment as a priority theme for the ASEAN Regional Forum (ARF) in 1997, the Inter Session Meetings (ISMs) on the disaster relief have had ADPC participating in 6 of the 10 meetings between 1998 and 2010 and contributing to specific activities including an ARF workshop on common disasters management terminology and a stocktaking matrix on bilateral, multilateral cooperation among ARF member countries in 1999 and support to development of ARF work Program in 2008.

South Asian Association for Regional Cooperation

South Asian member countries in the first three meetings of the RCC (2000-2002) were keen for ADPC to work with the SAARC Secretariat and constitute action-oriented programs for its technical committee. ADPC signed an MOU in 2006 with SAARC and the partnership continued with participation of SAARC at RCC 1, 2 and 6 Meetings, technical contribution by ADPC in development of SAARC Road Maps for Disaster Risk Reduction, supporting the SAARC Disaster Management Centre in developing good practice document on CBDRM and Guidelines on Mainstreaming DRR in National Development Planning as part of implementation of SAARC Road Maps.

Pacific Island Countries

In its first decade; ADPC was active in Pacific Island countries and partnered with the UN led South Pacific Disaster Management Program (SPDMP). Several current heads of the Pacific Island NDMOs had their first training at ADPC Disaster Management Courses. With SPDMP findings it's organisational home in SOPAC; ADPC continued to collaborate in the Pacific and through SOPAC and its CHARM and Community Resilience Program. It co- organised a regional CBDRM course with SOPAC in 2006 in FIJI. ADPC has closely collaborated with SOPAC and UNISDR in establishing the DRR Project Portal for Asia and the Pacific; learning and benefitting from the Pacific Disaster Net and Pacific Disaster Management Partnership.

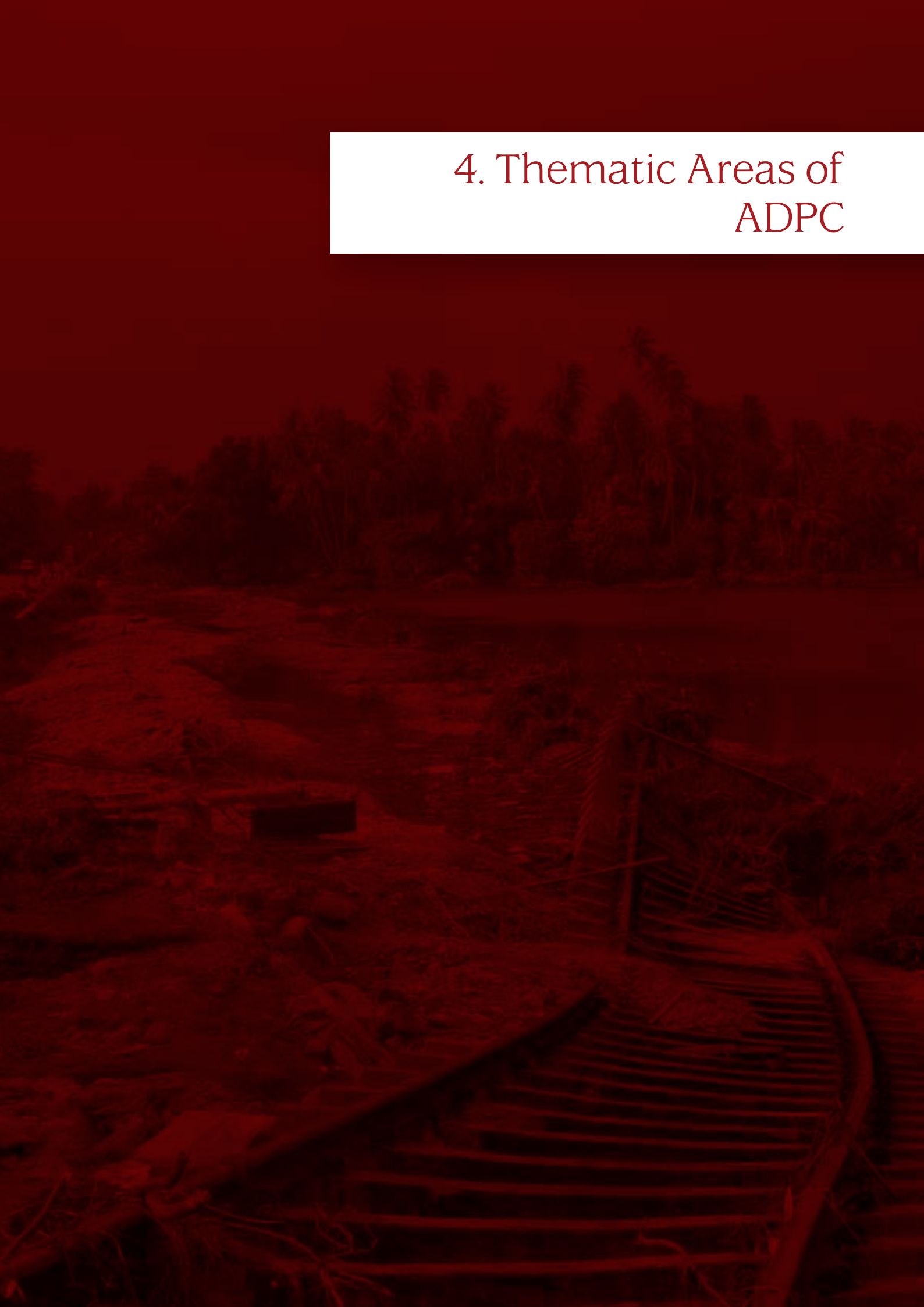
International Centre for Integrated Mountain Development

ADPC has been in close contact with the International Centre for Integrated Mountain Development (ICIMOD) in Kathmandu; an Inter-Governmental body of eight mountainous countries in Hindukush and Himalayas. This includes participation in the Regional Flood Information Exchange Workshop Series Programs among China, India, Bangladesh and Nepal; Programs on Landslide Risk Management; Stocktaking on Preparedness; and collaborating in organising a Regional Earthquake Vulnerability Reduction Course.

Mekong River Commission

The long years of ADPC's work in the lower Mekong basin has been in close partnership with the Mekong River Commission and providing inputs in development of the Flood Management and Mitigation Strategy, in implementing its Flood Management and Mitigation Program, participating in the Annual Flood Forums and influencing in shaping of the risk reduction agenda and its linkages with Climate Change Adaptation within the lower Mekong countries.

4. Thematic Areas of ADPC



4.1 Disaster Risk Management Systems

Evolution of Disaster Risk Management Systems at ADPC

The building of disaster management systems in Asian countries was identified as the "greatest need of all" at the beginning of the Asian Disaster Preparedness Center in 1986 and has continued to be a core element of the center's evolution. ADPC has consistently emphasised this purpose and has sought to meet the needs of countries to shift their primary attention from disaster response to a more sustained commitment to disaster preparedness, mitigation and reduction capabilities.

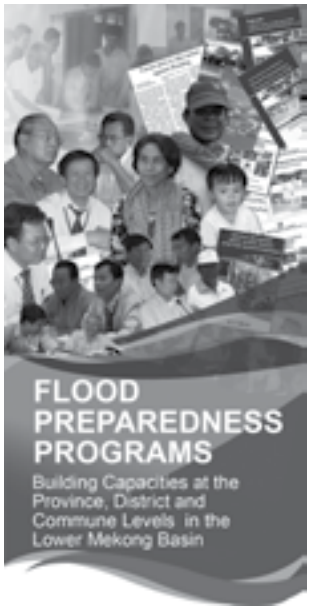
The original mission statement of ADPC became the basis for effective partnerships to establish and strengthen sustainable disaster risk management (DRM) institutional mechanisms, enhancing nationally based knowledge and skills, and facilitating the exchange of information, experiences and expertise. At the wider international scale of interest, this approach served to advance the commitments made during the United Nations' International Decade for Natural Disaster Reduction by countries throughout the 1990s.

These policy issues have continued to progress into practice through the inception of the International Strategy for Disaster Reduction in 2000, and specifically by individual country commitments guided by the Hyogo Framework of Action for 2005-2015 adopted at the World Conference of Disaster Reduction in Kobe, Japan in January 2005. With this global support for the subject, ADPC has been able to encourage much better DRM institutional and legal arrangements in Asian countries while also gaining a growing reputation for its professionalism in other regions of the world, too.

ADPC's vision expresses one its main goals as developing and enhancing sustainable institutional disaster risk management capacities, frameworks and mechanisms, and supporting the design and implementation of government policies in Asia and Pacific. ***The primary ADPC emphasis of building DRM system initiatives is specifically dedicated to strengthen capacities of disaster management authorities at the national, provincial and district levels of countries to develop and enforce disaster mitigation action plans, policies, regulations, while also seeking to encourage innovative risk reduction initiatives.*** DRM institutional development has focused on clarifying roles and responsibilities of the key government ministries and departments, and creating new arrangements, if required. A key element in this process is to inventory existing human and material resources at each of these various levels of engagement among the primary agencies to accomplish their mandates.

Throughout its formative period, ADPC has routinely recognised that effective disaster risk management requires inputs from a wide variety of professional disciplines and related partnerships. These range from engineering to anthropology, medical science to economic planning, and architecture to meteorology. ADPC has built this insight into its various training courses that it has initiated over the years. The Disaster Management Course series has been conducted since 1986 and another core set of courses has been built around Community-Based Disaster Risk Management. In both instances, ADPC training has been guided by the conviction that DRM strategies at both national and local levels of engagement must be implemented simultaneously with various and distinctive efforts to build capacity at both levels.

As the Disaster Management Courses evolved with subsequent adjustments for special interests and improvements in implementing DRM strategies in different countries, they have led to more focused activities and specific training programs. These initiatives resulted in expanded emphasis in its programmatic areas of Urban Disaster Risk Management (UDRM), Climate variability, change and Risk Management (CRM), and Public Health in Emergencies (PHE). As these program domains were realised by learning through both training activities and progressively more institutional capacity building, they also came to define the various dimensions of ADPC's own applied program activities.



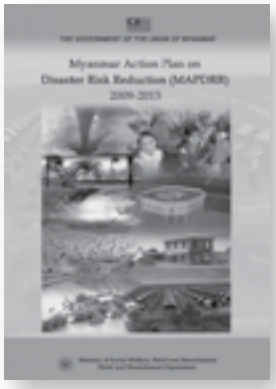
Through this dual process of teaching and learning, and both extending and gaining practical experience in implementation, the identification of more effective tools, research and demonstration projects were used to convert theories into practice. The varieties of ADPC efforts have been used more extensively to develop and update DRM systems and related arrangements with more implementation partners in the region. While ADPC's primary audience has remained government officials and government DRM institutions, meaningful partnerships have been forged with the International and National Red Cross and Red Crescent Societies, international and national NGOs, other civil society organisations and bilateral and multilateral development partners. Over the years, ADPC has valued the support it has received from its partners which have helped to expand its advocacy and the further implementation of disaster risk management programs and projects at national, sub-national and community levels.

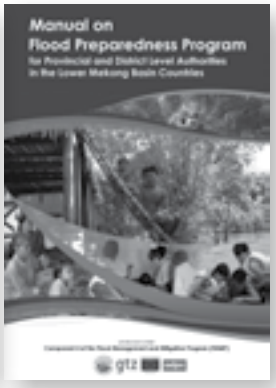
A Program Review of ADPC's DRM Systems Development

ADPC efforts to build DRM systems through strengthening institutions are embedded in almost all of the thematic areas and services provided by ADPC. These combined services are provided at regional, national, sub-national and municipal or local community levels. Some representative and indicative examples are shown in the following box:

- **Regional**: Technical assistance is provided to The Association of Southeast Asian Nations (ASEAN), The South Asian Association for Regional Cooperation (SAARC),and The Mekong River Commission (MRC).
- **National**: Technical assistance is provided to the national government authorities, national Red Cross / Red Crescent societies, technical, professional and educational institutions, as well as with development and other civil society partners which implement programs in Asian and Pacific countries at various levels.
- **Sub-National**: Efforts are extended to developing or improving provincial and district level DRM institutional and legal systems by strengthening capacities of key officials and improving program implementation with innovative partnerships.
- **Municipal or Local Community**: Initiatives are conducted to formulate and implement community-based DRM approaches and to integrate them into local development planning processes.

ADPC's DRM systems development activities may be grouped in four broad areas of emphasis, concentrated mostly in countries of South and Southeast Asia. First, seen most readily at regional and sub-regional levels of involvement, ADPC is engaged in the institutional assessment of disaster and risk management capabilities and related efforts to strengthen regional cooperation mechanisms. Other efforts to develop DRM



capabilities further are focused on working in partnership with national, provincial and district government authorities to upgrade their DRM policies, program design and implementation. This is often supplemented by additional efforts by ADPC projects to develop, test and apply new operational or analytical systems or other professional tools, methods and techniques. These methods typically identify, communicate, or manage disaster risk and contingency disaster management abilities. Many of these skills are further advanced by helping to build effective enabling environments that can contribute more directly to populations at local levels of disaster exposure.

All ADPC projects reflect an overall commitment to efforts that can expand the understanding of DRM responsibilities and to encourage the formation and use of more effective partnerships among the many people involved with ensuring safer communities.

Selection of ADPC projects that have contributed to strengthening DRM systems over the past 15 years follows:

- Implementing Strategic Plan for Disaster Management, in Lao PDR (2010-2012)
- Myanmar Action Plan for Disaster Risk Reduction (2008-2010)
- Cambodia Strategic National Action Plan for Disaster Risk Reduction (2008-2013)
- Thailand National Strategic Action Plan for Disaster Risk Reduction (2008)
- Laos – Australia NGO Cooperation Agreement (LANGOCA)- Sayaboury Integrated Hazard Mitigation Project (2007-2012)
- Support for Disaster Management in Sri Lanka (2005)
- Capacity Building for Provincial and District Authorities in Flood Preparedness and Emergency Management in Lower Mekong Region (2003-2010)
- Partnership for Disaster Reduction in South East Asia (2002-2008)
- Support for Disaster Management Development in East Timor (2001-2002)
- Disaster Reduction Program in Cambodia, Lao PDR and Viet Nam (2001-2003)
- Strengthening Disaster Mitigation and Management at the State Level in India (2000-2002)
- Capacity Building for Integrated Disaster Management in Cambodia (1997-2000)
- Asian Urban Disaster Mitigation Program (1995-2004)

Key Accomplishments of ADPC DRM Systems Development

ADPC's programs related to building Disaster Risk Management systems over the years have contributed to strengthening institutional capabilities at regional, national, provincial district and local levels in both direct and indirect ways.

At the regional level in southeast Asia, the Partnership for Disaster Reduction in South East Asia (PDR-SEA) project was implemented by ADPC during 2002-2008 with support from the European Commission's Humanitarian Aid and Civil Protection department (ECHO). This contributed to the development of an explicit regional ASEAN Regional Program on Disaster Management in March 2002 which then was approved by the ASEAN Committee for Disaster Management in 2003. This was further supported through a joint training workshop on disaster management the following year. As this program progressed through the implementation of individual activities in member countries, there was additional progress on the formulation and official endorsement of an ASEAN Agreement on Disaster Management and Emergency Response. Throughout these strategic regional policy developments, ADPC continued to play an important role in providing technical and training services to the countries concerned for the ASEAN Secretariat and to the ASEAN Regional Forum in advancing disaster relief cooperation.

Another dimension of the PDR-SEA program led to the institutional strengthening of national disaster management organisations in Cambodia, Indonesia, Lao PDR, Philippines, Thailand, Timor Lesté and Viet Nam. Working through a tripartite partnership with the UN Economic and Social Commission for Asia and the Pacific (UNESCAP) and ECHO, ADPC's program contributed to increasing the extent of community-based DRM activities within individual government projects. This was accomplished by supporting policy dialogue, advocacy and the development of specific country guidelines. The program also displayed the added benefit of improving coordination among various government agencies, the National Red Cross Societies and participating non-governmental organisations.

ADPC maintained an effective partnership from 2002 with the Mekong River Commission (MRC) in working with the lower Mekong basin countries of Cambodia, Lao PDR, Thailand and Viet Nam under the overall Flood Management and Mitigation Program framework. Efforts to improve the institutional capacities of provincial and district authorities responsible for flood preparedness and emergency management have contributed to much improved technical and administrative abilities to manage the annual flooding of the Mekong River. Specifically, the Flood Preparedness and Emergency Management Strengthening project focused on flood preparedness activities and promoted more opportunities for cooperation among authorities and organisations of the countries concerned. Attention was given to apply appropriate disaster preparedness measures more efficiently, and to improve flood emergency management strategies and policies.

The success of the program was demonstrated through abilities of the provincial and district authorities during Typhoon Ketsana in 2009 and the Mekong River floods of 2008. **A direct outcome of the ADPC involvement in the MRC partnership led to the installation of improved "people-centered" flood risk reduction systems in 11 of the most flood-prone provinces and 28 districts in Cambodia, Lao PDR, Thailand and Viet Nam**. This effective partnership was possible because of the continued support provided since 2003 by the German technical assistance agency, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), and the European Commission's Humanitarian Office (ECHO).

ADPC also supported the South Asian Association for Regional Cooperation (SAARC) and its member countries in developing the SAARC Road Map for CBDRM. ADPC's collaboration with the SAARC Disaster Management Center in New Delhi, India contributed to the development of a document on good practices on community-based DRM in South Asia.

At national and sub-national levels of involvement, ADPC's focus remained on building capacities for effective disaster risk management systems through disaster management offices at various administrative levels. ADPC also partnered with non-governmental organisation (NGOs) and national Red Cross/Red Crescent societies as well as other national and international development partners.

The LANGOCA Programme in partnership with the Save the Children, an international NGO is one of the good example to build on and maximise the unique strengths of NGOs; particularly in relation to their long-term experience, capacity and linkages with partner organisations and communities in Lao PDR. The Programme include a range of activities that aim to directly address Laos-Australia Development Cooperation Strategy 2004-2010 (LADCS) Strategic Objectives to reduce the vulnerability of the poor, with specific focus on reducing the impact of natural disasters, and to reduce the impact of unexploded ordinance (UXOs).

Noteworthy Recognition of DRM Systems Accomplishments

ADPC acknowledged at the 14th ASEAN Summit

The Heads of State/Government of ASEAN Member States gathered in Cha-am Hua Hin, Thailand, for the first time under a new charter, for the 14th ASEAN Summit on 28 Feb–1 Mar 2009 under the theme of "ASEAN Charter for ASEAN Peoples". In his statement on disaster management initiatives, the Chairman noted the success of the ASEAN-led mechanism to help the victims of Cyclone Nargis and pledged to continue supporting Myanmar in its recovery efforts following the launching of the Post-Nargis Recovery and Preparedness Plan. He also stressed the importance of developing a regionally integrated system to respond to future large scale disasters and to enhance Myanmar's disaster relief capacity. The statement acknowledged Thailand's offer to provide training and capacity building facilities for disaster management through the Asian Disaster Preparedness Centre.

Prime Minister Hun Sen appreciates ADPC for the National Action Plan for Disaster Risk Reduction in Cambodia

Prime Minister Hun Sen of the Kingdom of Cambodia conveyed his appreciation to ADPC for providing support for the establishment of the National Action Plan for Disaster Risk Reduction for 2008-2013 at the launching ceremony of the project on "Bird and Human Influenza Prevention and Management and the National Action Plan for Disaster Risk Reduction Strategy, on 17 March 2009 in Cambodia.

Thailand commends ADPC's contribution to Strategic National Action Plan

H.E Mr. Chavarat Charnvirakul, the Royal Thai Government's Minister of Interior, acknowledged ADPC's contribution in the implementation of the five priorities of the Hyogo Framework for Action through projects and programs in his keynote address at the inaugural session of the Committee on Disaster Risk Reduction on 25 Mar 2009. He specifically mentioned ADPC's technical contributions to the preparation of the Strategic National Action Plan for Thailand. The event was organised by United Nations Economic and Social Commission for Asia and the Pacific in Bangkok, Thailand.

Cross-cutting Approaches in Developing DRM Systems

ADPC programs in DRM system development have been positioned strategically to provide technical support in several important cross-cutting issues. These include socially significant matters such as ones relating to gender, social cohesion, special program considerations for children and elderly populations, and for physically challenged people. Concern for both environmental risks as well as increased vulnerabilities due to dense urban living conditions also feature in ADPC program sensibilities. Throughout its many activities, ADPC strives to maintain a focus on facilitating partnerships among its various stakeholders, while also providing the basis and motivation for linkages with other global, regional and national initiatives. The guiding objective is to encourage

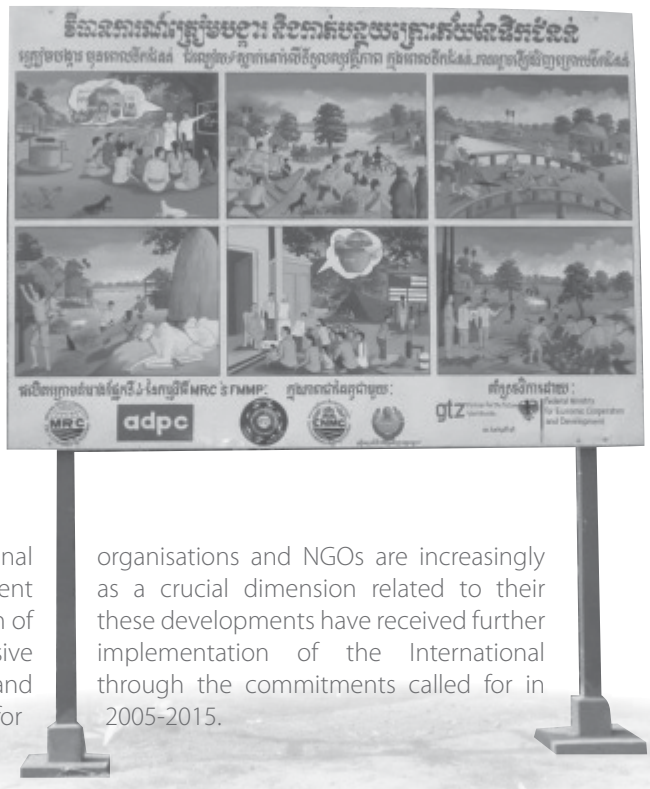
participatory approaches and community empowerment which experience clearly shows contributes to success and sustained commitments.

In this respect, *ADPC has promoted partnerships and provided technical support through provincial partnerships in Viet Nam to promote children's safety in flood conditions. In Cambodia, activities which enhance capacities in women-headed households and supported others related to DRM system planning and implementation. Other activities have increased the abilities of key disaster officials in Thailand dealing with older people and physically challenged members of the population.*

Likewise, DRM systems have been advanced in allied sectors such as the tourism industry by developing the Phuket Province Tourism Risk Management Strategy 2007-2012 in Thailand. Other, DRM systems have been introduced or enhanced in agriculture and forestry activities in Thailand. Promising work in DRM systems is emerging with respect to technological hazards such as in expanded chemical accident prevention programs. Public exposure to industrial and technological disasters is likely to increase in coming years, thereby motivating ADPC in its efforts to relate better DRM system development with good governance practice.

Future Directions for the Development of DRM Systems

ADPC's efforts towards building disaster management systems in Asian countries that were first identified as a top priority in 1986 have been pursued through contributions and achievements along with the interests of partners and direct beneficiaries. While supporting national governments and development partners engaged in strengthening DRM systems are working to build more resilient communities, accomplishments are also proceeding within government technical agencies. More carefully considered approaches also are being pursued by development partner agencies. National governments are formulating their own disaster risk management strategies and future strategies to build their own capacities and to manage ever increasing risks. Countries like India, Indonesia, Pakistan, Sri Lanka, Viet Nam and others have initiated new or improved national and community-based DRM programs with the involvement of their own skilled staff and less external support. More innovations are being developed or applied to meet specific local conditions, needs or operational requirements.



United Nations agencies, international organisations and NGOs are increasingly identifying disaster risk management as a crucial dimension related to their respective program activities. Each of these developments have received further impetus through the progressive implementation of the International Strategy for Disaster Reduction and through the commitments called for in the Hyogo Framework of Action for 2005-2015.

At the same time, the rise in global awareness during recent years in climate-induced risk issues further demands deeper partnerships and revised strategies to address the combined needs of reducing disaster risks and adapting to changed climatic circumstances in many local communities and with important national implications.

In looking to the future, ADPC fully recognises that the relevance of its interests and the need for its services are only likely to increase, driven by the dynamic growth throughout Asia. Therefore the Center remains committed to consolidating its experience of building systems while also devising new and effective means to relate climate change adaptation and disaster risk reduction endeavors.

ADPC's over-riding objective will continue to be the delivery of competitive and high quality goods and services that address its partners' needs, and to provide technical support to strengthen DRM DRR institutional systems at national and sub-national levels in partner countries. The Center's current focus is investing to help national governments lead and implement comprehensive risk reduction agendas and to coordinate multiple initiatives being pursued by various ministries and activities which span different development sectors. This includes DRR and Climate Change Adaptation planning and implementation within sector ministries and departments of national and provincial governments. Success will depend upon the continued promotion of innovative and comprehensive community-based disaster risk reduction, and the expanded recognition of environmental issues and resources in both humanitarian assistance and development domains..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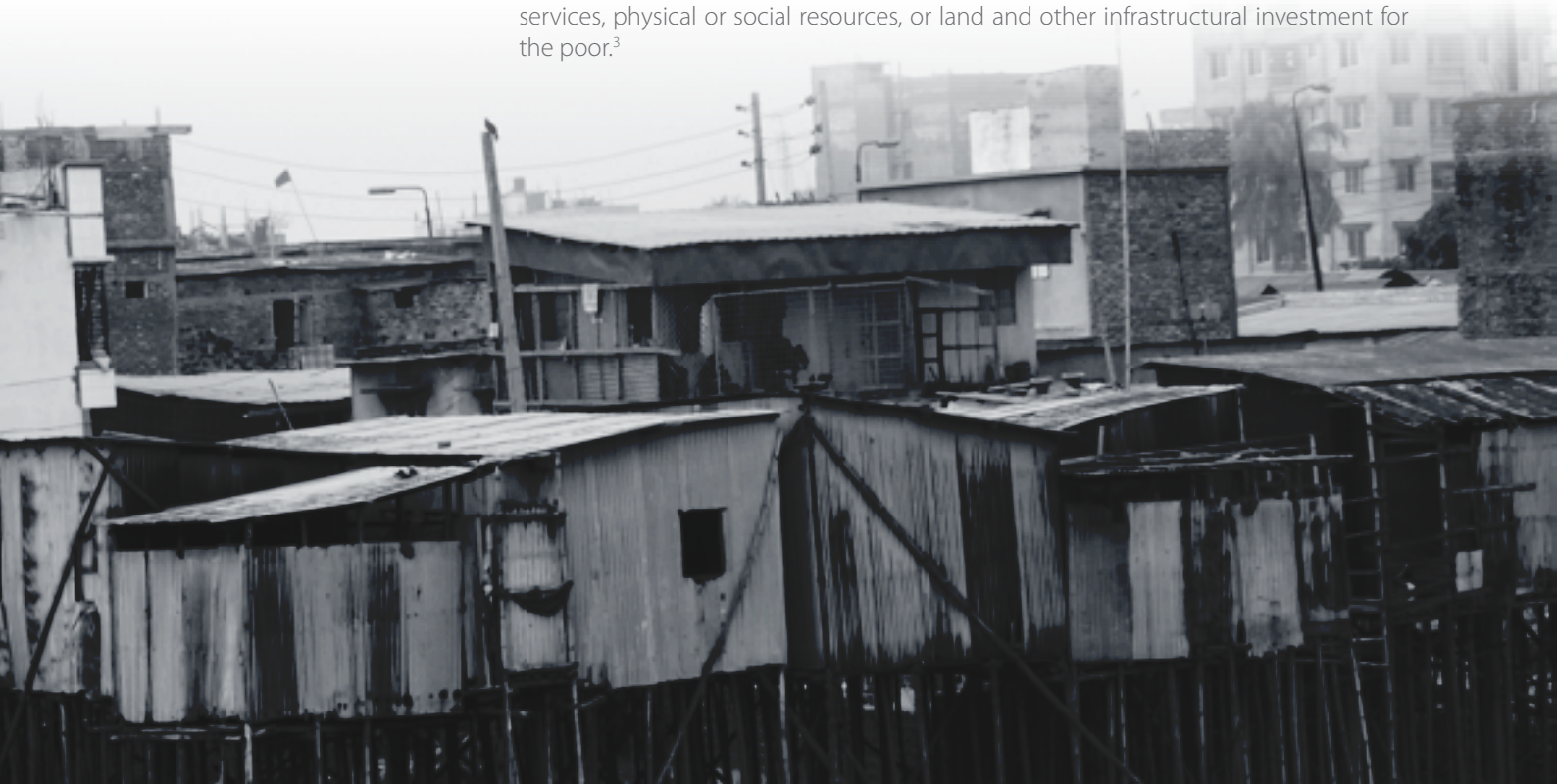
4.2 Urban Disaster Risk Reduction

The Growth in Urban Risks

For the first time, in 2008 over half the world's populations lived in urban areas. More than 70 per cent of the world's urban population currently are in low or middle-income countries. The urban population in Asia is expected to reach 43 per cent of the total population[1] and fifteen of the world's 30 largest cities are situated within the region[2]. As the result of rapid urbanisation in Asia and the sheer magnitude of these urban populations and the areas they occupy, many cities are not able to keep pace in terms of adequate urban planning.

Urban growth has resulted in the expansion of populations into known hazard-prone areas, such as flood plains, on seismic fault lines and adjacent to coastal shores. Over one billion people in high-risk urban areas lack routine access to basic needs and social infrastructure. These problems are particularly evident in low and medium-income countries as endemic poverty and unregulated urban development activities are the underlying factors behind highly vulnerable populations and areas. For these reasons, highly concentrated populations are living in places exposed to natural hazards at the same time that they exert growing demands on available resources. These results in the fact that disaster impacts in urban settings are felt much more intensely than in the past. The frequency of their devastation is only expected to increase and this may be attributed to occurrence of extreme events as a result of Global Climate Change and other climate variations such as La Nina and El Nina.

In relative terms, the fatalities and destruction caused by disasters in high-income countries are significantly lower than in low- and medium-income countries. To a large extent even the poorest populations in these countries have access to the physical infrastructure and basic needs as may be provided by the state. However, in many low and medium income countries the poorest populations are seldom included in social "safety nets" and they figure much less in systematic planning strategies. Often they inhabit within "unofficial" make-shift settlements with an estimated 900 million people living in informal settlements near cities in developing countries. By definition, these under-served, poorly situated and badly constructed human environments are severely hazard-prone areas. The exposure and resulting disaster risks of these populations is worsened by the low institutional capacities that governments provide in official services, physical or social resources, or land and other infrastructural investment for the poor.[3]



ADPC's Urban Disaster Risk Reduction Program

The physical growth and demand for resources through rapid urbanisation in Asia in recent decades has created the need for a focus in ADPC with an urban concentration placed within the realm of wider disaster preparedness and disaster risk management.

ADPC's vision for urban areas is to assist cities in managing and mitigating the urban disaster risks of the urban poor and rich alike by creating an enabling environment through providing technical assistance to cities for planning and building, enhancing their capacities, helping in development of necessary information such as spatial distribution of potential hazardous areas and promoting interventions for effective emergency response planning and management systems in cities. Additionally, ADPC facilitates both science-based solutions as well as promotes community-based, sharing of knowledge and effective implementation of policies and practical experience elsewhere.

Overarching Goals of ADPC's Urban Disaster Risk Reduction Program

- Create receptive, sensitive and reactive urban communities in Asia capable of undertaking organised approaches to mitigate and manage disaster risks by transferring information, technical knowledge and skills.
- Advocate for socially acceptable and compatible policies with farsighted community values, legal mechanisms and investments to have effective disaster risk mitigation in place to build safer urban communities in the region
- To become a resource center on urban disaster risk management and recognised clearing house of information on the subject

ADPC believes that working in secondary cities which are growing faster than the megacities, can yield better results and provide more opportunities for undertaking innovative solutions to reduce the urban risks. On the other hand this will help in developing working models that can be used for replication of experience in megacities as well as smaller cities when the effectiveness of the measures are known.

Urban disaster risk reduction pursued by ADPC is primarily focused on demonstrating sound practices for responding to, preparing for and mitigating against multiple hazards and disaster events.

Efforts are also made to strengthen national-level institutions, working in the urban sector such as urban development authorities and expanding their influence in exercising good urban governance. City governments are the fundamental components of initiating efforts for reducing the risks, whereas ADPC promotes the participation of grassroots and local communities in decision-making processes in order to reduce the vulnerabilities of the poorer segments of the population. Often it is the impoverished, marginalised and underserved communities which become the primary victims of disaster events, particularly when they are categorised as "illegal settlers". Building DRR capacity is inherently linked with other socio-economic issues such as poverty alleviation and food security as well as the protection of natural resources and the wise use of the environment. ADPC believes that understanding and developing the linkages between these program interests will enrich the work of the organisation as a whole.

1 ISDR (2009) Global Assessment Report on Disaster Risk Reduction. United Nations, Geneva.
2 UNDESA (2009) World Urbanization Prospects: The 2009 Revision. United Nations, Geneva.
3 ISDR (2009) Global Assessment Report on Disaster Risk Reduction. United Nations, Geneva.

In addition, many of the urban DRR issues are connected with unregulated development. The more crucial elements can be handled easily through better physical planning as well as with better compliance to building codes and appropriate construction practices based on the potential hazard exposure and risk evaluation. The assessment of hazard, vulnerability and potential risk is a vital factor in any city development process, yet it is often not considered in planning and building cities by official authorities. ADPC assists cities by providing technical services in assessing the risk and building the capacities of cities to undertake regulatory functions for creating a culture for hazard resistant construction. This can be done through creating sensitive and informed city dwellers as well as decision-makers. Accordingly awareness building and information sharing and dissemination are vital components of urban disaster risk reduction.

ADPC believes that many of the city-level services offered by urban local governments need to integrate disaster risk reduction as an integral part of routine services in order to sustain the development gains and also to ensure safety and security of urban populations, who generate finances for turban development by paying annual taxes and other payments. Hence ADPC believes that private-public partnerships are a vital component of urban disaster risk reduction and it advocates for the private sector to be an important investor and participant in creating a resilient and vibrant urban society.

Major Urban Disaster Risk Reduction Programs undertaken by ADPC

Asian Urban Disaster Mitigation Program (AUDMP)

ADPC's first program with a specific urban focus was the Asian Urban Disaster Mitigation Program (AUDMP) which began in 1995. The AUDMP was implemented by ADPC over a 10 year period between 1995 and 2005, with the goal of reducing the disaster vulnerability of urban populations, infrastructure, and lifeline facilities and shelter in the Asian region. The Center worked with a wide coalition of partner organisations, including local and national government agencies, city authorities, NGOs and academic institutions. These institutions collaborated in national demonstration projects, worked as partners to create methodologies, strategies and working models on urban disaster risk reduction considering the multi-hazard and multi-stakeholder environments prevailing in the target cities.

The program helped to create a wide coalition of urban disaster risk reduction champions among politicians, practitioners, academia and community members through building a network to serve as a forum of communication, information dissemination and knowledge exchange on urban disaster risk reduction. AUDMP projects were implemented in more than 20 cities in ten countries, namely Bangladesh, Cambodia, India, Indonesia, Lao PDR, Nepal, the Philippines, Sri Lanka, Thailand and Viet Nam. Success of the program was evident due to the fact that ADPC could generate the interest of more countries to join the program and could consistently expand the number of participating cities. It also worked continuously to develop new partnerships with professionals from various disciplines, technical organisations, collaborators and sponsors.

With the support of USAID's Democracy, Conflicts and Humanitarian Assistance and the Office of Foreign Disaster Assistance, AUDMP became a significant signature program that helped to change the disaster risk management paradigm in the urban context throughout Asia. It opened a new chapter in urban risk management not only in the ten target countries but also throughout the region. AUDMP initiatives made their impact through many urban risk reduction interventions, policies, approaches and strategies in the fields of risk assessment, mitigation planning and implementation, community based disaster risk management, hazard forecasting, and emergency management. Urban risk reduction was also increasingly being recognised as an integral part of the development process and governance rather than within the traditional relief, response and rehabilitation interventions by UN agencies, National Governments and development partners as a result of the pioneering initiative by ADPC in the region.

During the implementation of the AUDMP, ADPC recognised the importance of urban areas and accordingly identified Urban Disaster Risk Management as one of its five core thematic areas of work. ADPC has developed its "Strategy 2020 for Urban Disaster Risk Mitigation in Asia" which aims to have an impact in 200 cities by the year 2020.

Program for Hydro-Meteorological Risk Mitigation in Asian Cities (PROMISE)

One of the major Urban Programs undertaken by ADPC for urban disaster risk reduction as a follow up to AUDMP was the Program for Hydro-Meteorological Risk Mitigation in Asian Cities (PROMISE). It was implemented during 2006-2010 with the financial support of USAID/OFDA. The program was executed with the aim to promote hydro-meteorological disaster preparedness and mitigation activities in selected highly vulnerable secondary cities in South and Southeast Asia through building upon successful elements of the AUDMP experience. This Program was expected to contribute to furthering the goal of, sharing lessons from and utilising technical resources (both human and material) developed during the course of the AUDMP.

ADPC initially proposed one highly vulnerable secondary city from each of the five project countries, namely Bangladesh, Pakistan, the Philippines, Sri Lanka and Viet Nam. for implementation of demonstration project activities. Subsequently Indonesia was added to the program. During five year period of program implementation three more cities in Bangladesh, the Philippines, and Sri Lanka also were added as target cities. ***ADPC's rationale in having such an approach was that the geographically dispersed demonstration projects initiated under the program should yield easily replicable cost effective methods and mechanisms for widespread dissemination of mitigation and preparedness practices at local, national, sub-regional and regional levels.***

These nine target secondary cities are rapidly growing urban areas in the respective countries, which have had significant impacts from hydro-meteorological disaster events during the past. Even during program implementation the cities faced several major disaster events and the successful management of disaster events was a testimony to the program interventions undertaken by the ADPC. The program interventions at community, city, national and regional levels contributed to the reduction of losses and deaths and the cities could recover after the events faster than other cities which had similar effects. For example, the two cities in the Philippines, namely Pasig and Dagupan, were subjected to typhoons Ondoy/Ketsana and Pepeng/Parma in 2009 and had successfully recovered from the event as a result of better preparedness capacity. ADPC employed a "cluster cities' approach" to enhance the program's outreach and effectiveness. Through this approach the intervention in the target city will reach a cluster of other cities, which share a common watershed or coastline with common type of vulnerabilities to hydro-meteorological hazards. That way several other cities could get benefited from replicating the strategies and methodologies used in PROMISE target cities

The Program also advocated for replication of the success through the existing ADPC institutional linkages in the region for networking and sharing of experiences. On a macro level, the Program has offered a major support to the respective national and local Governments of target countries, helping to achieve an ambitious goal of upgrading to a high standards its urban development policies, institutions, and capabilities for preparedness, mitigation, and response to hydro-meteorological hazard events. Drawing on the five years of experience, at the end of the program ADPC prepared a working paper on Mainstreaming Disaster Risk Reduction: A Road Towards Sustainable Urban Development and Creating Safer Urban Communities.

Capacity Building in Asia Using Information Technology Applications program (CASITA)

The Program on Capacity Building in Asia Using Information Technology Applications, (CASITA) implemented in two phases from 2003 to 2006 is a good example of a useful knowledge exchange forum for urban disaster risk reduction professionals. The CASITA program was implemented with the financial support of EU and the network provided support for the integration of information technology and communication tools within university courses and for training disaster risk reduction professionals throughout South and Southeast Asia. ITC Netherlands provided technical support in the program implementation.

The Program has developed a network of about 25 universities in Asia to assist in capacity building of urban planners, engineers, geographers and other professionals in applying Geographical Information Systems in risk assessment and disaster risk reduction planning in larger urban areas. The beneficiaries are assisting the cities in South and Southeast Asia in hazard mapping, risk-based spatial planning using geographical information systems as well as in preparedness and mitigation to reduce the multiple hazard risks in cities. The program has supported undergraduate and post-graduate curriculum development in a shared platform through participatory processes involving the university faculty members and professionals of the two technical partners, ADPC and ITC. The Network remains active even beyond the project period, demonstrating the sustainability of the project activities.

Asian Program for Regional Capacity Enhancement for Landslide Impact Mitigation (RECLAIM)

ADPC has been engaged in building the landslide risk management capacity of the partner countries in Asia for more than 8 years with the financial assistance from the Royal Norwegian Government. The ADPC and Norwegian Geo-Technical Institute (NGI) are facilitating a network of 16 different agencies/universities/research institutions in more than 11 countries (Bangladesh, China, India, Indonesia, Lao PDR Nepal, Pakistan, Philippines, Viet Nam, Sri Lanka and Thailand) to advocate for good practices on landslide risk management. The limited number of interventions in landslide mitigation and preparedness in the Asian region based on mountain areas was the rationale behind the initiation of the RECLAIM. This aspect is more important considering the urban development in mountain areas of the respective target countries of the program.

The first phase of the RECLAIM program concentrated on raising awareness of landslide risk and developing a regional course on landslide risk mitigation. The second phase focused on demonstrating cost effective mitigation measures as well as national and regional level knowledge sharing of best practices on landslide risk mitigation. The third phase is intended to promote sound practices for landslide monitoring and early warning in a Changing Climate Scenario. Institutions mandated with the task of landslide risk management in the target countries do recognise the importance of landslide monitoring, early warning for better preparedness to save lives. Several Governments such as Thailand, Nepal, India, Indonesia, and Sri Lanka have already endorsed the concept of integrating landslide risk management in their mountain development plans and undertake community based risk management initiatives in landslide prone areas. However, the national partners require continuous facilitation, exposure, guidance and technical support to intensify the landslide risk management interventions.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The RECLAIM program included city demonstration projects as well. The second phase of this program demonstrated cost effective mitigation measures through pilot demonstration projects in Kalutara of Sri Lanka, in Patong City of Thailand, and in Baguio City of the Philippines. By sharing good practices for landslide risk mitigation in cities through the documentation of project activities, it is expected to promote sound urban planning and construction practice in other landslide-prone urban areas.

Asian Cities Climate Change Resilience Network (ACCCRN) Program

ADPC was involved in the Asian Cities Climate Change Resilience Network (ACCCRN) program, implemented by the Rockefeller Foundation since 2009. ADPC was involved in the Thailand chapter of the program and through its partnership with the Thai Environmental Foundation (TEI) it provided assistance in the process of selection of cities for the program. The program conducted an evaluation of the degree of climate hazard impacts as well as vulnerabilities evident in five target cities in Thailand, in order to formulate preliminary findings. Those findings were helpful for ACCCRN to identify the two most promising pilot cities in the context of data availability, the level of climate change impacts and relative risk factors, and the capacities of the respective cities to undertake further studies under the second phase of the program.

The findings of the ADPC team was based on the technical parameters associated with building climate change scenarios, the physical risk factors associated with vulnerability of the built environments, infrastructure, lifeline facilities, natural and environmental resources whereas TEI was responsible for the evaluation of the human, social and economic aspects of vulnerability. The findings of this joint city assessment process created the basis for the design of the second phase activities.
Subsequently acting in its capacity as a regional partner, ADPC extended its support to the ACCCRN program by providing additional resources for implementing future program activities. Under current arrangements ADPC is developing a two week course on Climate Change and Disaster Risk Management in Changing Urban Environments. The course will be tested through a pilot activity in later 2011 and thereafter will become a regular feature of ADPC's training calendar. ADPC will further contribute to the regional network in a number of areas as a technical consultant contributing its expertise in urban disaster risk reduction, climate risk reduction and preparedness, public health and emergencies.

Scenario-Based Contingency Planning for Earthquakes in Bangladesh

As the present capacities in disaster management in Bangladesh are largely focused on emergency response and post-disaster recovery, there is a continuing need for a comprehensive geo-hazard risk reduction contingency planning strategy. When attached to an easily implementable framework the strategy can work to anticipate as much as possible, probable future earthquake threats throughout the country. This holds particular value for the areas of high vulnerability and especially for large urban centers so that plans can be formulated for early recovery after and future earthquake emergencies. In a similar respect ADPC has been involved in the preparation of scenario-based contingency planning for the cities of Dhaka, Chittagong and Sylhet. This project was implemented as a component of Bangladesh's Comprehensive Disaster Management Program implemented by the country's Ministry of Food and Disaster Management.

Key Program Approaches in ADPC's Urban Activities

ADPC have implemented urban disaster risk reduction programs throughout South and Southeast Asia. ***The activities have focused on assessing urban risks, risk management planning, sharing information and increasing the capacities of the institutions most immediately involved in urban localities, including poor communities.*** One can find urban vulnerability reduction activities implemented by ADPC in various projects across Asia, from Jakarta and Bandung in Indonesia, north to the urban centers of the Kathmandu Valley in Nepal, and from the western reaches of Kerman and Gourgan in Iran, to Naga City in the Philippines in to the east and to Matara in Sri Lanka to the South.

Each component of these programs contribute through a comprehensive framework for institutionalising improved private and public sector mechanisms for community preparedness and mitigation of multi-hazard disaster risk in urban areas of the target countries. Program components focus attention on indigenous practices, community empowerment as well as on the more innovative approaches to risk management realised through sustained efforts that go beyond the respective programs' duration. The program activities are designed to foster a multi-stakeholder, multi-sector, multi-disciplinary approach to urban disaster risk management. As illustrated by the preceding key program activities, ADPC's urban programs are linked to a set of mutually supporting activities implemented at community, urban local government, national and regional levels. They also address many different urban issues and contribute toward achieving a number of positive results which help to attain a culture of safety and resilience within urban communities.

Activities undertaken by ADPC's urban programs

City demonstration projects

ADPC usually selects pilot cities through an analysis conducted in South Asia and Southeast Asia among the secondary cities subjected to high impacts of disaster events in the recent history. They are among the most rapidly urbanising areas and have the potential to be severely affected by multiple disaster events in the future. City authorities of the respective cities need technical assistance for disaster risk management as one of the priority issues among the problems faced by residents and they usually show a keen interest to become involved in DRR activities. Based on its experience in previous city demonstration projects conducted by programs such as AUDMP, PROMISE, RECLAIM and others in more than 50 cities, ADPC believes that this strategy of demonstration projects can provide a useful model of urban disaster risk reduction for other cities.

The city demonstration projects usually cover the following subject areas:

- Hazard vulnerability and risk assessment
- Preparedness and mitigation action planning workshops at city level
- Community level projects to demonstrate enhanced preparedness and mitigation
- Pilot initiatives to promote community based end-to-end early warning at city level
- Promotion of understanding among officials responsible for linking urban governance and risk management
- Risk-based, urban land use planning
- Construction practices integrating hazard resistance methodologies and the promotion of building code compliance
- Use of "Emergency Operations Centers"in cities and the development of related "standard operating procedures"
    - Development of neighborhood networks of community-based organisations to support the functioning of DRR mechanisms initiated by city authorities

- Campaigns for raising public awareness
- Promotion and involvement in disaster safety day events in cities

Strengthening capacities through training activities

Training is a key component in all of the urban disaster risk management programs conducted by ADPC. This is realised by developing training materials and expanding continuing education opportunities. ADPC activities institutionalise disaster practitioners' abilities to recognise sources of urban disaster risk, to develop mitigation and risk reduction solutions, as well as to advocate for risk reduction with other partners.

The many different training courses ADPC provides have expanded considerably since the initial flagship Disaster Management Course which was first conducted in 1986. Under the AUDMP, ADPC has developed several regional training courses, specific to the urban context. These training programs have covered new disciplines such as the following subjects:

- urban disaster mitigation,
- earthquake vulnerability reduction for cities,
- urban flood management,
- technological risk management for cities,
- risk communication,
- land use planning for risk management,
- construction in disaster-prone areas. among others.

In addition the PROMISE program has initiated a course on Risk Assessment and Community Preparedness, Geographical Information Systems for DRR and another on Mainstreaming Disaster Risk Reduction Into Local Governance.

The course contents of AUDMP training is designed to capture the successful practices undertaken in programs such as AUDMP, PROMISE and others in preparedness, mitigation and response. The same experience has been converted into information material, case studies and also used as training material for wider dissemination. The urban programs of ADPC have created a network of training partners in Asia and the training courses have been successfully institutionalised and piloted at national level by them. In early 2005, in collaboration with Georgetown University and through financial assistance from the Bill and Melinda Gates Foundation ADPC organised a workshop for institutions involved in capacity building in Asia. That activity led to the development of a white paper on future directions for capacity building initiatives in Asia within the urban context.

ADPC is currently developing a new course on Information and Communication Technology for Disaster Risk Management in response to a growing need for these applications. The course particularly highlights the use of computer and web-based digital technologies which encourage the flow of information between decision-makers and disaster risk management activities and resources. The course is part of UNESCAP's Academy of ICT Essentials for Government Leaders and the UN Asian and Pacific Training Center for Information and Communication Technology for Development in Incheon, South Korea.

Sharing information and experience

Sharing knowledge and experience has been a crucial aspect of ADPC's urban disaster risk management programs. These information and networking components aim to build public and private networks as a forum for exchanging information and experience on urban disaster management. They create sustainable forums of communication to serve as foundations for other urban

disaster mitigation initiatives. Information exchange networks target a wide variety of participants from local to regional levels of involvement. Participants include individual local community activists, disaster management professionals, national and local government officials, researchers, students, training institutions and academic institutions.

Several programs included "working group meetings" to bring implementing cities and partners from different countries together to learn from their experiences. AUDMP and PROMISE in particular emphasised the documentation of processes, capturing experience through case studies, guidebooks or primers, and then disseminating the knowledge freely through projects' respective websites. Additionally, ADPC connects urban communities throughout Asia through a Safer Sister Cities Network that enables information to be disseminated about good disaster management practices and methods drawn from successful demonstration cities.

In addition, an electronic-newsletter has been published by ADPC since October 2005, to foster the wider dissemination of DRR experience throughout South and Southeast Asia. Subjects include city-specific case studies, regional news, information about upcoming conferences and courses, calls for professional submissions for journals and the listing of useful resources.

Regional and national level experience sharing forums have been organised to promote urban risk mitigation practices, create awareness, initiate appropriate environmental policies, and for advocacy. This has resulted in the publication of a number of useful reference materials:

- Safer Cities, including 29 case studies on urban DRR
- Primer for Disaster Risk Management in Asia
- Primer on Integrated Flood Risk Management in Asia
- Urban Community Resilience Guides, in four volumes
- Manual for training masons for construction in earthquake-prone area
- Handbook for housing in flood-prone areas based on Bangladesh experience
- Proceedings of Regional workshop on best practices in disaster mitigation.

These publications and other program outputs are disseminated through the ADPC website and nearly 20,000 entries have been recorded during the past year. This is a testament both to the popularity of the website and the validity of the information contained therein.

Mainstreaming DRR in Urban Development

One of the ADPC approaches for advancing urban disaster risk management is its advocacy for the decentralisation of disaster risk management activities to local government relevance and for increasing the integration of DRR into policy and planning at the local level. Priority sectors such as housing and physical infrastructure benefit from integrating mitigation and preparedness measures into policy and planning initiatives as well. This advocacy strategy, commonly referred to as "mainstreaming", can encourage local governments to assimilate DRR into their routine responsibilities, thus facilitating the creation of safer communities and the allocation of portions of annual budgets towards risk management activities. The PROMISE program is the first of its kind in ADPC to combine urban disaster risk management with the concept of mainstreaming.

Various city demonstration projects implemented through PROMISE further display the integration of DRR into the daily efforts of city authorities. **A noteworthy example is the demonstration project conducted in Dagupan City in the Philippines. This project was particularly notable as the city mayor created a "technical working group" for DRR in 2006. Composed of city officials holding key development functions in planning, health, social welfare, agriculture, and other relevant departments it encouraged the integration of action plans within the city's annual plans and budgets. It preceded, and perhaps presaged, the creation of the new Local DRR Management Councils and Offices by the national Philippine Congress in 2010.**

The important examples of integrating DRR into local government and planning strategies of rapidly urbanising areas have the potential to be impacted severely by hydro-meteorological events in the future. Similar demonstration projects in each country participating in PROMISE serve as other working examples of urban hazard mitigation in practice. The municipal authorities of these targeted cities now consider risk management to be one of their priority issues among the many problems faced by urban residents and are proceeding to incorporate additional DRR activities into their future budgetary allocations.

Empowering urban communities

ADPC supports community-based program activities in urban areas as a means of empowering urban residents and local leaders to reduce their vulnerabilities to severe natural hazards. The activities pursued by AUDMP, PROMISE and the other urban programs and define much of the work done in vulnerable urban communities to support urban disaster risk reduction. The involvement of local inhabitants in disaster mitigation and preparedness initiatives is crucial for gathering information from their knowledgeable local sources and contributes to integrating societal and cultural habits and outlooks within mitigation strategies. These ADPC urban programs have always sought to engage the most vulnerable communities within secondary cities. Their associated demonstration projects have routinely emphasised the importance of approaching every community with disaster mitigation methodologies representative of the diverse cultural contexts in Asia, but have also been responsive to the particular traditions or needs of individual locations.

PROMISE approached communities through multiple levels, focusing specifically on integrating participatory risk assessments and action plans with the formal disaster management plans of the city. Effective disaster preparedness of communities is integrated with and built within the emergency response system of cities. In the case of extending national early warning systems for floods, the program incorporated hazard monitoring, data collection, and early warning procedures by city authorities and local communities.

Noteworthy Recognition for Urban Disaster Risk Accomplishments

ADPC is the pioneering institution in Asia in promoting urban disaster risk reduction. There have been various sponsors supporting ADPC's efforts in undertaking this strategy, but it is worthwhile to mention that the Office of Foreign Disaster Assistance of the United States Agency for International Development (USAID/OFDA) has been extending its generous support to ADPC continuously for more than 15 years. Financial support for AUDMP and for PROMISE has been provided by the same institution. It must also be noted that ADPC's efforts in reducing urban disaster risk in Asia equally have been well supported with dedication and commitments by the participating national and local governments and other urban stakeholder organisations.

The World Landslide Forum has recognised ADPC as a "Center of Excellence" in landslide risk management in its meeting held in Japan in 2008. This largely can be attributed to ADPC's involvement in RECLAIM as the implementing partner, working alongside the Norwegian Geotechnical Institute. This partnership has facilitated the development of landslide mitigation practice in Asia.

Following its participation in the PROMISE program, Dagupan City won the national Gawad Kalasag disaster preparedness award in 2009, a commendation of the Philippine government. One of the city's barangays (neighborhoods), and the city's NGO partner, the Center for Disaster Preparedness, also received the award at the regional level. However, if the real validation of the accomplishment is to be seen, then one can appreciate that the communities of Dagupan conducted an orderly pre-emptive evacuation prior to Typhoon Parma in 2009. This was followed again, by a second evacuation when the typhoon returned again to their location. Even though the entire city was inundated by subsequent floods, no one died and relief distribution was orderly. In 2010, when Super Typhoon Megi passed through Luzon Island, Dagupan City was the only locality within the province that did not need to declare a state of calamity because of its good state of preparedness and readiness.

Future Directions for Urban Disaster Risk Reduction

ADPC's work with Asian cities and urban areas has evolved from promoting disaster risk reduction planning and practice towards promoting urban risk assessment, prepardness and risk mitigation through structural as well as non-strutural means. This reflects the maturation of the work begun under AUDMP 15 years ago. Both national and local governments are now proceeding into more strategic and technical scientific assessments of risks, and ADPC itself has increased its own abilities in this critical professional field.

Climate change adaptation and the needs for fostering the greater resilience of Asian cities are other pressing concerns that will demand future attention and professional dedication. ADPC's potential contributions to the expanding portfolio of disaster risk management abilities will proceed from its current work in developing a pre-disaster loss estimation methodology for use in urban development planning. This will serve as a means for discouraging development in potentially high risk areas or in allocating more resources in developing most vulnerable areas through scientific practices. One may expect that as long as Asians live in cities and the natural environment remains dynamic, urban disaster risk reduction will be a major emphasis for ADPC.

In future ADPC will devote its efforts in meeting some of the essential needs for building urban resilience. These requirements have been identified by ADPC during the implementation of the past urban programs, and are noted below:

- Developing more field level champions to promote awareness and political will for urban vulnerability reduction.
- Providing more simple and cost-effective methods, technologies and tools for conducting regular vulnerability assessments for the benefit of practitioners.
- Promoting the creation of participatory governance mechanisms sensitive to community perceptions and needs, making the most vulnerable groups a partner in decision-making processes.
- Increasing the awareness of cost-effective solutions and options for reducing peoples' vulnerability through more demonstrations.
- Developing plans and formulating short and long-term strategies for risk reduction in cities.
- Providing more decision-making tools for policymakers related to macro-level issues in terms of physical planning and construction in hazard-prone areas. Promoting more types of collaboration between public, private and non-government sectors to increase the their involvement and investment in risk reduction activities.
- Encouraging community-based financial mechanisms for improvements in shelter and community infrastructure.

4.3 Climate Risk Management

It has long been recognised that if society could have access to advance information on weather and climate, the adverse effects associated with it could be minimised. The concentrated and global management experiences particularly during the severe 1997-98 El Niño and 1998-99/ 2000-01 La Nina conditions revealed that a large gap exists between the potential values to be derived from forecast information, such as medium range or seasonal climate forecasts, and the actual utilisation of this information for managing agricultural and other livelihood systems for societal benefits. For example, when armed with a forecast of rainfall deficit, farmers can be encouraged to switch to crops that require less water.

It has been realised that the prediction of impending climate hazards such as droughts, floods etc. is the key for managing climate risks in all time scales. This requires prediction skills of such weather and climate hazards that occur in medium to seasonal time scale. The current extent of such abilities remains less when compared to the prediction of short-range phenomena such as likely cyclone tracks, associated heavy precipitation and possible storm surges. Advances in climate prediction and climate risk management as a thematic area promise huge benefits for societies, and there is a continuing need to make concerted efforts to encourage and support them.

Early warning is an integral part of climate risk management. It requires establishing an improved end-to-end early warning systems, which require the introduction of state-of-the-art atmospheric and hydrological models for National Hydrological and Meteorological Service (NHMS). They also link national, provincial and district level institutions which are responsible for the dissemination of early warning to communities and local users such as farmers.

ADPC Programs in Climate Risk Management

The Extreme Climate Events Program

The Extreme Climate Events (ECE) program was the first activity undertaken by ADPC aimed to document the time-series forecasts, impacts, institutional responses and policy frameworks related to extreme climate events (such as El Niño, La Nina, Indian Ocean Sea Surface Temperature patterns) over the past 10 to 15 years in some of the most affected countries of the Asian region. The systematic collection and continuing analysis of such data is crucial in order to improve the understanding of the impacts of these events particularly as they relate to the occurrence of disasters.

The program demonstrates additional collective benefits as it draws upon the climate forecasting research community, regional meteorological agencies, and a number of specialised institutions. These include the ASEAN Specialized Meteorological Center based in Singapore, the United States' National Oceanic and Atmospheric Administration (NOAA), the World Meteorological Organization (WMO), and the International Research Institute (IRI) for Climate and Society in the United States. Other similar technical organisations also are working to identify event indicators and to develop prediction capabilities.

The ECE program has used various forums, workshops and local networks or partnerships to provide an interface between the scientific and research communities that generate climate information and the users of the information products. The time-series forecasts, impacts, institutional responses and policy frameworks related to extreme climate events in the three target countries over the past 30-40 years have been collected and analyzed by the program. The results are presented to both the producers of the data, as well as the intended users, which are most often national governments, NGOs, national and regional press bureaus.

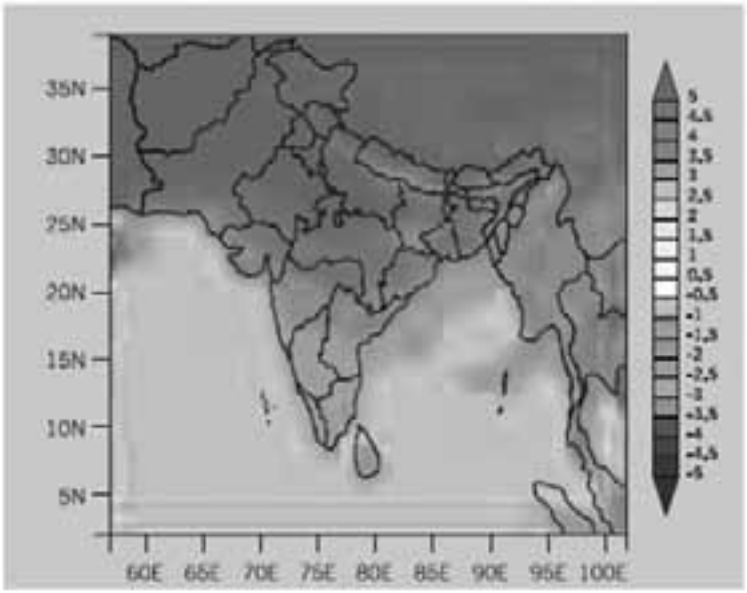
The program has explored various means to provide more localised forecast information to match individual user needs, with particular attention given to the needs of farmers for climate information products for the agricultural sector. These localised analyses were developed, piloted and tested for one season. To ensure the sustainability and replication of the project outcomes, institutional mechanisms were created to generate and supply climate information through expert committees established at national, provincial and community levels of use.

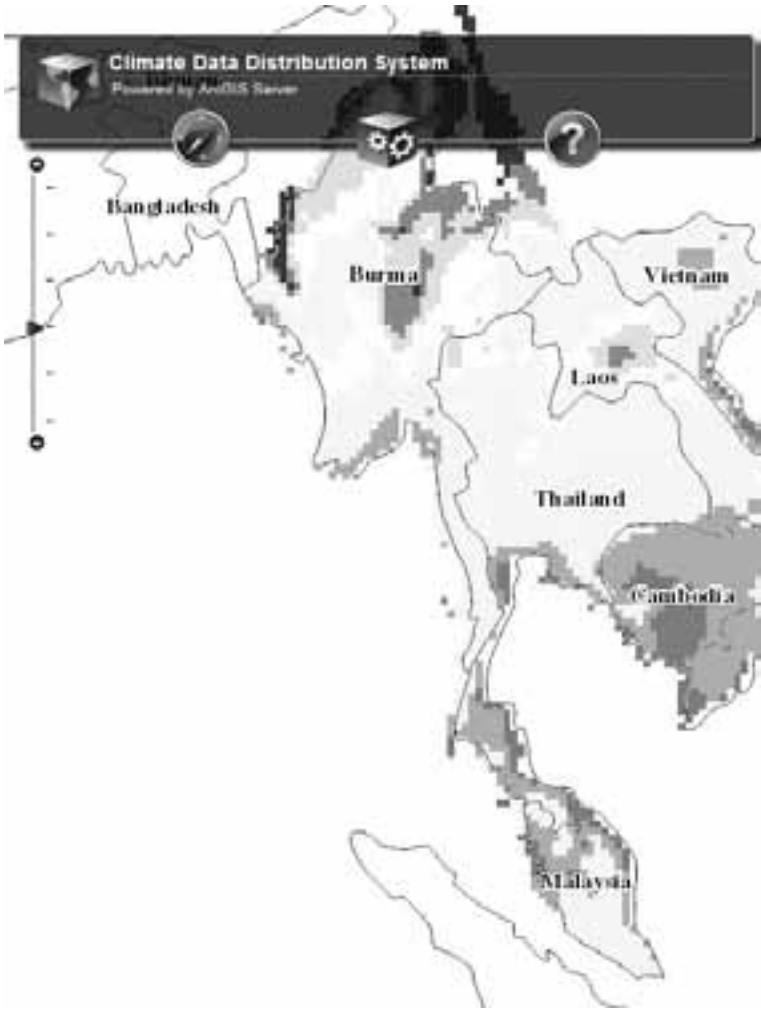
A multi-disciplinary applied research group was established at the national level to support climate prediction, to translate the technical impact outlooks into practical response plans, and to communicate this information effectively and in a way that encourages its use. An essential part of the program consolidated this informed practice in the development and delivery of a regional training program for climate forecast applications.

The experiences in Indonesia and the Philippines resulted in tangible ownership and support by the local government units leading to sustainable impacts. Climate forecast applications received priority attention and a budget allocation in the Indramayu (Indonesia) district development plan. The district agriculture office concerned then developed a curriculum and implemented "climate field schools" for farmers. In the Dumangas municipality in Iloilo, Philippines, the mayor earmarked about $ 40,000 to establish a climate observation station for localised climate information, and made a special provision in the municipal development plan to support climate forecast application on a continuous basis.

The Climate Forecast Applications Program

The Climate Forecast Applications Program stimulates local capacities to implement climate risk management strategies and innovative approaches that are initiated by people who are directly involved in the program. One such example was in the Philippines, where program activities successfully demonstrated the economic benefits of climate forecast information during the 2002-03 and 2004-05 El Nino events. By anticipating significantly reduced rainfall during the second cropping season, farmers were convinced to change their crops from rice to corn, watermelon or cash crops. This effective strategy resulted in a reversal from a potential loss if they had planted rice to a production gain valued at $ 6 million in 2003 and $ 20 million in 2005.



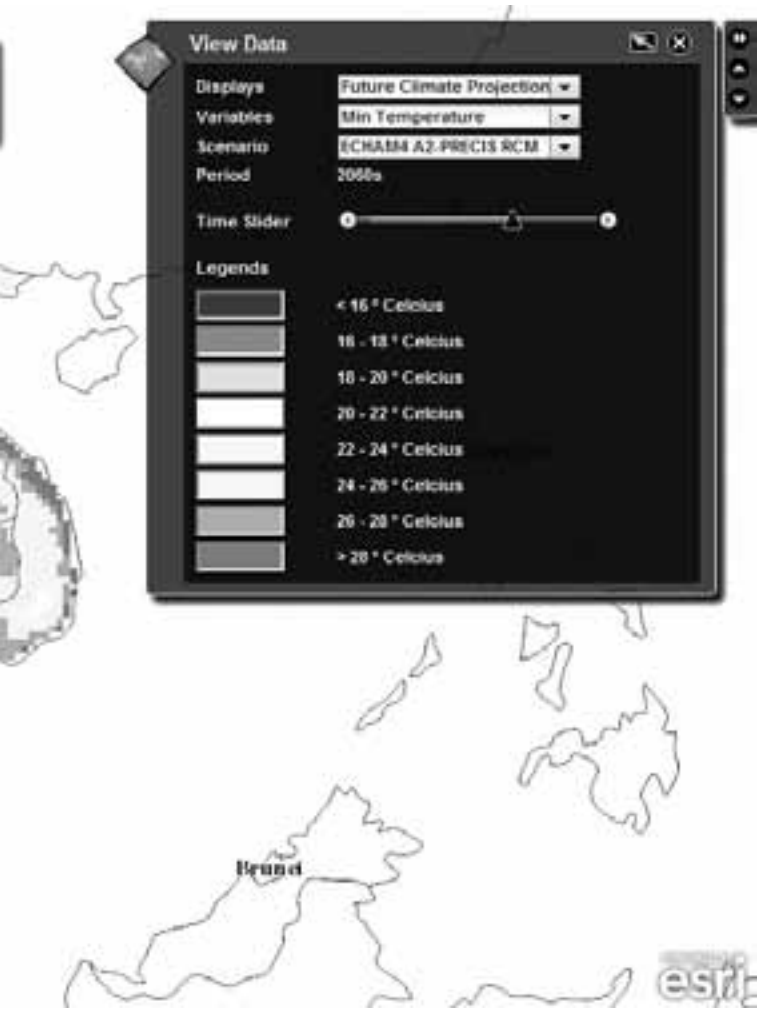


Another innovative and pioneering initiative was the establishment of a "climate field school" which the Indramayu District in Indonesia has piloted in 2003 with support from NOAA, USAID's OFDA, the Bogor Agricultural Institute, and the Indonesian Meteorological and Geophysical Agency. The climate field school employs practical and field-based learning for agricultural extension workers and farmers to enhance their expertise in using climate forecasts to make appropriate and more beneficial farming decisions.

While dialogues between farmers and extension workers extended only over a few seasons, the school has become a permanent and valued institution that connects producers of climate information, intermediaries (agricultural extension workers), and end users (small-scale farmers). The meteorological agency has been utilising this mechanism to distribute seasonal forecasts and to evaluate forecast effectiveness and user responsiveness.

Because of these positive impacts, local and national investments have been mobilised to replicate the climate field school concept in other locations. The Indramayu district government decided to sustain the initial school beyond the pilot phase and has allocated 100 million rupiah ($ 10,000) to replicate the institution concept in four or five sub-districts every year. At least 1,000 farmers participated in these schools in Indonesia. In addition, the Directorate of Plant Protection in the Ministry of Agriculture has adopted the innovative concept as part of its own nation-wide agricultural development program.

There were several noteworthy results of the program. In such a large district as Indramayu with a very heterogeneous rainfall pattern, the Indonesian Meteorological and Geophysical Agency responded to the needs of resident farmers by downscaling seasonal forecast in spatial terms. It divided the district into different rainfall regions and then produced forecasts for each separate area. Information regarding the different dates for the onset and termination of rain in different locations was instrumental in setting up a more suited cropping strategy (such as dry seeding vs. wet seeding) as well as in determining the timing of planting activities. In Kupang, Indonesia the program institutionalised a sustained dialogue between forecast providers and users, while progress in developing forecast products took more time in Kupang because of the scarcity of rainfall data.



In another example, the Climate Forecast Applications Program was implemented in Bangladesh from 2003-2009 with ADPC working together with the Bangladesh Meteorological Department and the Bangladesh Water Development Board. Other technical project partners included the Climate Forecast Application Network, the Georgia Institute of Technology in Atlanta, USA, and both the Institute of Water Modeling and the Centre for Environmental and Geographic Information Services in Dhaka. The program was supported by USAID in Dhaka through a household development opportunity program implemented by the NGO, CARE-Bangladesh.

This program developed a three-tier flood forecasting technology and transferred it to Bangladesh institutions such as the Flood Forecasting and Warning Centre, the Water Development Board and the Meteorological Department. Program activities established a generic framework for a sustainable and comprehensive flood forecasting system that was able to generate and deliver flood forecasts through pilot locations. These could thereby demonstrate measurable improvements in warning capabilities. Five districts were selected throughout the country to demonstrate the feasibility and value of the flood forecasts. The program supported capacity building on climate and flood forecast development, the generation of technical discharge data and the feasibility of communicating forecasts to local levels of use.

The program focused broadly on the two dimensions of technology development and forecast applications. The program supported technology development for flood forecasting in Bangladesh with a lead-time of 1-10 days, 20-25 days and a full season ahead. These flood forecast models were then tested and validated in selected pilot locations. Under the application component, five pilot unions (Rajpur, Uria, Kaizuri, Bekra, Gazirtek) were selected and consultation workshops were conducted with various Upazilla and Union level departments. The program also supported analysis of locally developed technical data about flood impacts. Following the reports of the local level Upazilla coordination meetings, the consolidated data was able to contribute to the assessment of needs and decisions at pilot locations and to guide related discussions about flood forecasts for the monsoon season of 2006 and 2007 with national focal points.

The primary results of these combined activities led to the development of a successful long-lead time of 10-day flood forecast technology for riverine flooding in Bangladesh, and its successful application at the pilot sites. The utility of the technology was proven during the flood events of 2007 and 2009 and has since been transferred to the Flood Forecast and Warning Center of the Government of Bangladesh.

Climate Risk Management Technical Assistance Support Project

This project was first implemented in four countries (Armenia, Ecuador, Indonesia and Mozambique) during 2009 - 2010 with nine more countries in Asia (Bangladesh, Bhutan, India, Maldives, Mongolia, Nepal, Pakistan, Papua New Guinea and Timor-Lesté) added in the second phase from 2010-2011. It aims to build capacities and to develop abilities to analyze risks related to climate variability and change in the target countries, and within UNDP and other participating United Nations and regional agencies. The overall intentions are to be able to define feasible risk management solutions.

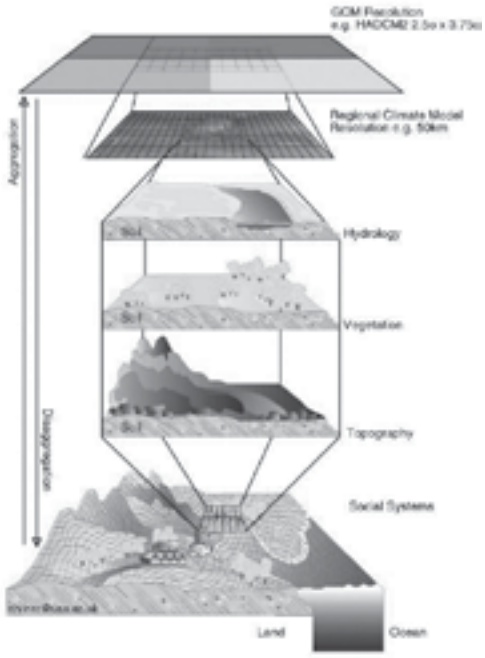
This climate risk management approach seeks to maintain and improve the societies' abilities to achieve socio-economic and development goals in the face of climate variability superimposed on a changing climatic background. It also promotes the achievement of development goals through precautionary programs that can improve the likelihood of favorable climate-related conditions being experienced by communities, governments, the private sector and agencies alike.

Climate risk management strategies focus on climate-related development outcomes in areas that are sensitive to both climate variability and change, such as in agriculture, water resources, food security, public health, the environment and livelihoods. ADPC's involvement in this program supports evidence-based strategies that rely on information about current and future risks from three planning dimensions:

- historical and current patterns of climate-related hazards and losses;
- observable trends creating foreseeable new patterns of risks and losses; and
- predicted global warming-based climate scenarios and the potential future status of other societal drivers of risk and loss.

An evidence-based approach is a means of achieving consensus among people likely to be affected concerning their own risk management priorities. This information can be used to mitigate risk factors that could otherwise lead to contrary or negative developmental outcomes. Specific examples that may benefit would include reduction in crop failures, flood damage, disease outbreaks, individual livelihood or production losses, food insecurity, or other conditions that threaten increased mortality.

The project intends to develop and then apply a methodology that integrates risk considerations over short and longer time scales to arrive at an assessment of risk associated with both climate variability and change. The results will feed into a set of selected country programmes as well as to inform the practice of climate risk management in general and contribute to the achievement of three distinct outcomes. These are an increased convergence concerning risk management priorities among national and local stakeholders and the international community; increased climate-risk management capacity of key national and regional institutions; and increased climate-risk management capacities within UNDP and UN country offices. The resulting country reports are expected to assist countries in prioritising their risk management and adaptation activities over the next two decades.



Climate Data Digitisation and Downscaling of Future Climate Projections in Nepal

ADPC has taken another forward step in working with Asian Development Bank funded Technical Assistance from 2011 on downscaling future climate scenarios for Nepal. The country has been identified as a hot spot for climate change due to its geographical location and the fact that its future climate scenarios are vital for developing adaptive measures in climate-sensitive sectors such as agriculture and food security, water resources, energy and health. A web portal for accessing grid-referenced observed data and downscaled future climate information would be developed under the initiative. This is expected to assist help sector-specific policymakers, researchers and technical experts in planning their activities. ADPC has been partnering with Bejknes Centre for Climate Research of Bergen, Norway, The Energy Resources Institute of India, and ITC of the Netherlands for achieving this project goal.

Future directions of climate change and climate risk management

Climate issues have always been important in consideration of both developmental and risk management strategies. However, current public issues such as the documented concerns of global-warming induced climate change and intense international efforts to mitigate climate change have now increased the awareness and willingness among many segments of the populations in all societies. These include decision-makers at local, national, and international levels of responsibility, contributors to government policies, and within civil society and communities people's efforts to improve capacities to manage negative outcomes.

Adaptation to a changing climate is seen as a key in these efforts. ADPC, which has established itself as a leading regional institution in the area of managing risks associated with climate variability is well placed to contribute to practical solutions in the area of climate change adaptation. With its rich experience of integrating disaster risk concerns into development policy and practice through multiple approaches, ADPC has much to offer in efforts to institutionalise climate variability and climate risk management and climate change adaptation into national, sub-national and local planning and sector development efforts. The following are some of the future programmatic directions for ADPC in the thematic area of climate change adaptation and climate risk management:

- Developing decision support tools for climate change adaptation.
  - Downscaling of future climate projections;
  - Assessing impacts and vulnerability to climate change in climate-sensitive sectors;
  - Developing suitable sector-specific adaptation measures for climate-sensitive sectors and initiating related demonstration projects;
  - Linking institutions and stakeholders and raising awareness of climate change through climate forums

- Improving the capacity for responding to and preparing for climate-related hazards and managing climate risks.
  - Assessing impacts and vulnerability to hydro-meteorological hazards and extreme events at the regional, national and local levels;
  - Development of Seasonal Weather Forecasting Systems for managing climate risks in climate-sensitive sectors;
  - Linking institutions and stakeholders and raising awareness on climate risks and extreme events through climate field schools and climate forums.

4.4 Community-Based Disaster Risk Management

The move towards community leadership for disaster risk reduction and greater engagement, partnership and integration with local government mechanisms for disaster management and development evolved in late 1990s and gained additional international momentum in the new millennium as it was distilled from several strands of practical experience in field operations. The role of communities has been given phenomenal attention with the widespread application of the community based disaster risk management (CBDRM). It found a prominent place in the national disaster management frameworks of all the countries of Asia and Pacific. Most of the countries recognised the efforts by the civil society organisations to empower the communities, enhance their capacities, involve them in every phase of disaster management including assessment of risks and preparation of plans for prevention, mitigation, preparedness, response and recovery and integrate community structures and processes with local governing institutions

CBDRM gained further prominence in the Hyogo Framework for Action 2005-15 (HFA) adopted at the World Conference on Disaster Reduction in 2005 which identified one of its strategic goals as *"development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards"*. It further emphasised that "both communities and local authorities should be empowered to manage and reduce disaster risk by having access to the necessary information, resources and authority to implement actions for disaster risk reduction" as one of the eleven principles of the HFA. One of the priorities of action identified is to *"promote community participation in disaster risk reduction through the adoption of specific policies, the promotion of networking, the strategic management of volunteer resources, the attribution of roles and responsibilities, and the delegation and provision of the necessary authority and resources"*.

ADPC Programs in CBDRM

Community based[1] disaster risk management (CBDRM) has been an important principle of ADPC's disaster management programming since the mid-1990s. The techniques and projects undertaken have varied since then in terms of both responding and contributing to the evolution of professional thinking and practice associated with community-based participation and DRR. As a result of these efforts, the phrase community-based disaster risk reduction (CBDRR) represents the broader conceptual dimensions rooted in disaster and risk management activities at local community levels.

The CBDRR thematic focus of ADPC's programming concentrates on the following aspects:

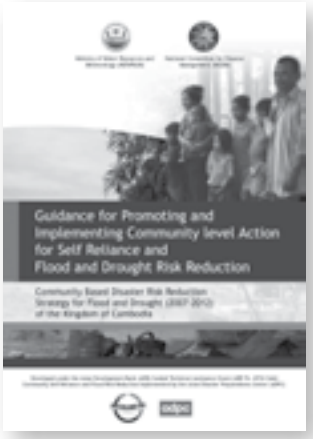
- Mobilise of support from local, sub-national and national ministries and departments for CBDRR;
- Expand partnerships with multiple stakeholders to promote CBDRR; e.g. media, private sector, civil society organisations, women's unions, youth unions, religious organisations;
- Develop technical capacities of the local authorities, national disaster management offices, NGOs and other development workers through training and developing of technical guidelines and handbooks;
- Facilitate sharing across multiple sectors and amongst countries on their experiences with CBDRR;
- Identify and implement innovative programs to explore new dimensions in CBDRR practice;
- Develop frameworks and tools to support the work of decision-makers and practitioners;
- Document good practices and tools, as well as develop databases and publications which map CBDRR practices in various regions;
- Develop new training modules to enhance the capacity of practitioners;
- Continue support to sub-regional and regional entities for promoting CBDRR practices.

ADPC's Community Based Disaster Risk Management Course (CBDRM) was initiated in 1997 to build capacities of DRR practitioners within non governmental organisations and development partners in promoting a "culture of prevention" and creating safer communities. So far nineteen international courses have been held. The courses have also been adapted to the national context in India, Sri Lanka, Lao PDR, Cambodia, Thailand and Viet Nam.

The following discussion describes some of ADPC's work in CBDRR by presenting representative examples of project accomplishments, publications, strengthened partnerships and training activities that it has pursued.

1 Community-based programmes are also known as community-based disaster preparedness (CBDP), community-based disaster risk reduction (CBDRR), integrated community based risk reduction (ICBRR) and community-based disaster risk management (CBDR).

CBDRM in Projects



One of the primary community-based initiatives which have been implemented by ADPC has been the *Partnerships for Disaster Reduction in South East Asia (PDRSEA)*. It was a regional project implemented in partnership with the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and with support from the European Commission's Humanitarian Aid Disaster Preparedness Program (DIPECHO). *Implemented over four phases from 2001-2008, the project focused on developing technical capacity of professionals through designing and conducting various training courses. It facilitated the sharing of experiences, across countries and organisations through newsletters, websites and email list serves. It supported the national networks of CBDRR practitioners and led efforts towards regional networking. Tools for practitioners have been developed to support community action. Over the last two years of the project, the focus was on institutionalising CBDRR in government policy, planning and implementation, as well as in supporting government departments at local level to develop strategies and action plans to support community action.*

Another important initiative that contributed to the process of institutionalising CBDRR was *Community Self-Reliance for Flood and Drought Risk Reduction in Cambodia*. It was supported by the Asian Development Bank and implemented during 2005-2007. The initiative attempted to *institutionalise CBDRR in government policy and plans of Cambodia by developing the National CBDRR Strategy. These efforts provided guidance to practitioners and organisations involved in CBDRR and community development work in approaches for implementing CBDRR with special emphasis on linking it with commune development planning processes, as well as with national strategies for development.*

Community-based Early Warning System and Evacuation, the Philippines

Initiated by the PROMISE Project in the Philippines, the experience of Dagupan City illustrates the significance of pursuing a local community focus. The project was implemented in eight barangay neighborhoods, drawing people together to plan and prepare for disasters systematically, working together to establish an early warning system and to prepare a community evacuation plan for flooding. Their work proved to be effective at times of need and then led to additional protective activities.

Improved dissemination of flood forecasts through community-based early warning systems, Cambodia, Lao PDR, Thailand and Viet Nam

In order to provide the communities with access to reliable flood information a Community Based Early Warning System (CBEWS) was established under the Flood Emergency Management Strengthening (FEMS) project. The CBEWS has been one of sub-priority project within the existing Flood Preparedness Programs (FPP) of the Provincial and District Committees for Disaster Management (PCDM/DCDM). The CBEWS built capacities of village chiefs and community authorities in the operation and maintenance of flood marking and recording, thus enhancing community ownership and sustainability

After the 2004 Indian Ocean Tsunami, ADPC provided technical support to the Royal Thai Government's Department of Disaster Prevention and Mitigation to implement *CBDRR activities in the southern provinces of Thailand*. Another example is the one on *Enhancing Community Resilience to Natural Disasters in Southeast Asia* was implemented in Cambodia and Viet Nam from 2005 to 2008 with support from DANIDA. *Implemented under the framework of the end-to-end early warning, the program contributed to increasing the capacities of general communities and local government authorities in water-related disaster risk management activities and capacity for longer-lead time, high-resolution early warning information.*

So too, community initiatives have been integrated in all major ADPC programs since the mid-1990S. Under the Asian Urban Disaster Management Program (AUDMP) it has been demonstrated in several urban areas such as: Tongi and Gaibanda

municipalities in Bangladesh, Vientiane in Lao PDR, Ratnapura and Nawalpitia municipalities in Sri Lanka, in Hatyai province in Thailand and among other locations within Cambodia. So too in case of climate related projects, information about climate forecasting has been provided to farmers in Indonesia, the Philippines and Viet Nam where it has been part of the Climate Risk Management program strategy to integrate a community focus into its activities. Pioneering work on developing community-based risk communication strategies in Cambodia, Lao PDR and Viet Nam was implemented under ADPC's Disaster Reduction Program for those countries in 2002. Work also has been done on community-level action, planning and risk communication, supported by the Asian Development Bank in Uttaranchal and Uttar Pradesh states in India.

Community-based flood mitigation in Bangladesh

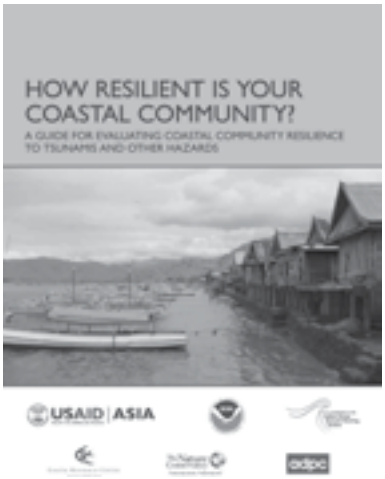
In 2000, the AUDMP initiated collaboration with CARE Bangladesh to develop the Bangladesh Urban Disaster Mitigation Program. Inspired by existing community initiatives, this program encouraged communities to decide how best to use limited budgets to meet their locally assessed needs. Access to indigenous knowledge, the use of local materials and labor, and minimal financial resources were combined to initiate a community strategy in four selected municipalities. Encouraging the residents to participate in the project and to decide the best way to "flood proof" their municipality strengthened participants' confidence in their own abilities and to assume responsibility for taking action during a flood. This project has now successfully repeated this participatory flood-proofing activity in two other municipalities.

Development of Tools for CBDRR

With an objective to support the work of decision-makers and practitioners involved with CBDRR, ADPC has been working over the years with partners to develop context-specific tools on CBDRR. Some examples of these professional resources follow.

CBDRM Field Practitioners' Handbook, developed to help equip CBDRM practitioners with theories and practical tools that can be applied in community work. The handbook contains a framework which clarifies the basic concepts on risk reduction in community contexts; a set of essential tools for implementing various stages of the CBDRR activities; and information about including disaster risk communication and gender-sensitive approaches in community-based activities.

Critical Guidelines for Community-Based Disaster Risk Management: Inspired by the development of minimum standards in other discipline such as the humanitarian sector, *the Guideline was developed in 2006* to cater to the needs of the CBDRR community to formulate minimum standards for practice.. The aim of the guidelines is to provide development practitioners with common principles, processes and approaches in the identification, design, implementation, monitoring and evaluation of community-based projects in disaster risk management.



How Resilient is Your Coastal Community? A guide for evaluating coastal community resilience to tsunamis and other hazards: This guide was developed, building on lessons learned and experience gained in the Indian Ocean region after the 2004 tsunami to address coastal hazards and reduce the risks to vulnerable communities. It attempts to guide development along Asian coasts by broadening the perspective of sector plans so that a more holistic and robust planning framework evolves to truly elevate the potential for community resilience.

CBDRR Database: In order to provide an online tool of available CBDRR resources for practitioners, this database has been conceived and developed under the PDRSEA with an aim to provide information on activities implemented in the region on CBDRR. It also maintains a roster of organisations, academic institutions, training courses and experts involved with CBDRR, as well as serving as a singular location for CBDRR- related good practices, tools and publications. However, the database has not yet been able to sustain itself, nor expand beyond program funding.

Strengthening Partnerships and Networks on CBDRR

An important component of ADPC's involvement in CBDRR has been expanding partnerships on CBDRR and facilitating the development or strengthening of national networks of agencies involved in CBDRR. Examples includes working in close collaboration with national networks of NGOs such as the Disaster Preparedness Network-Nepal (DP-Net), the Disaster Management Working Group (DMWG) and the Joint Advocacy Network Initiative (JANI) in Viet Nam, the Masyarakat Penanggulangan Bencana Indonesia ((MPBI) and the University Forum in Indonesia, the Community Disaster Risk Reduction Forum and Joint Activities Group in Cambodia, PDRM Forum in the Philippines, the National Alliance for Disaster Risk Reduction in India, Network for information, Response and Preparedness Activities for Disasters (NIRAPAD) in Bangladesh, the Inter-Agency Standing Committee and Partners Forum of the Lao-Australia NGO Cooperation Agreement in LAO PDR and the Civil Society Forum in Myanmar.

Since 1999, *Disaster Management Practitioners' Workshop for South East Asia*, has been organised in close partnership with IFRC and DIPECHO project partners. Since that time, six workshops have been conducted with the most recent one being in 2009. The workshops provided an opportunity for disaster management practitioners to gather on a periodic basis to share experiences and lessons, identify emerging issues and strategies, and develop partnerships to promote community-based approaches in disaster risk management on a regional basis. The third, fourth and fifth workshops were conducted as a component under the PDRSEA project. Each workshop has had a different theme, as indicated below.

- Institutionalising Community-Based Disaster Risk Management in Government Policy Making, Planning and Program Activities (3rd DMP SEA, held in Thailand, 2004)
- Learning from Community-Based Practices: Strengthening Policy and Partnerships (4th DMP SEA, held in Thailand, 2006)
- Sustaining Partnerships: Meeting The Challenge of Scaling-Up CBDRM Programs (5th DMP SEA, held in Cambodia, 2008)
- Building Safer and More Resilient Communities in Asia and the Pacific (6th DMP SEA, held in Thailand, 2009)

Training and Capacity-building in CBDRR

The Annual Regional Learning Workshops for Community-based Disaster Risk Reduction have been one of the flagship training courses offered by ADPC for the purpose of developing the capacity of practitioners in the region. It has been conducted 19 times between 1997 and 2010. The course also has been adapted to the national contexts and delivered in collaboration with local partners in Afghanistan, Cambodia, India, Lao PDR Sri Lanka, Thailand and Viet Nam. Through this regional course participants acquire tools and obtain knowledge about how to design and implement programs that help reduce disaster risk and vulnerability while also building the community's capacity to promote a "culture of safety". Through exercises and simulations, participants practice risk analysis leading to risk assessments and risk management planning techniques. They also learn about exemplary globally recognised community-based programs, with a particular focus on Asia and the Pacific.

Supporting the South Asian Regional Delegation of IFRC in developing ***standardised CBDRR training curriculum for South Asia***. The initiative targeted field practitioners and community leaders in order to improve the overall quality and impact of the DRR training programs conducted in South Asia by Red Cross and Red Crescent Society staff and volunteers.

Training and Learning Circle for Community-Based Disaster Risk Reduction: Training and learning has been a key component of capacity development in CBDRR and has been used extensively in both classrooms and field settings. Although the trainers involved have been well-versed in their subject, they constantly seek ways to maximise the effectiveness of their training and means to improve their facilitation techniques, methodologies and tools. The Training and Learning Circle has been designed to respond to these specific needs. It builds on the long years of experience within institutions in Asia of both developing and delivering training and undertaking knowledge management. Partners in this initiative have included the UNDP Thailand's South-South Cooperation Unit, ProVention Consortium, the All India Disaster Mitigation Institute and the Center for Disaster Preparedness.

Key Program Accomplishments on CBDRR

The Manila RCC 8 Statement on Implementing National Programs on CBDRR in High Risk Communities was a key accomplishment of ADPC's work in the CBDRR thematic area when the RCC members adopted it at the RCC 8 meeting. *The statement demonstrates the importance the RCC members attached to community-based risk reduction approaches and their commitment to undertake national CBDRR programs for particularly vulnerable communities.* The Statement provides guidance on essential components of national CBDRR program and which would be expected to contain the following components: legal and enabling policy frameworks; technical support for community actions; strengthened partnerships among local authorities, implementing partners, community and other civil society organisations, and private sector interests; risk reduction resources linked with local development programs; and capacity building measures.

Specific accomplishments on CBDRR have been recorded under various thematic projects of ADPC and the successes attributed to the involvement of communities in the project. Examples include the Kathmandu Valley Earthquake Risk Management Project from 1997-2001, in which the project activities have been replicated in communities beyond the originally intended locations. *Similarly, in the case of the Dagupan City in the Philippines, with the interventions of the Program for Hydro-meteorological Risk Management in Secondary Cities of Asia (PROMISE), the community awareness on risk reduction was successfully enhanced. This was demonstrated in 2010 when Super Typhoon Megi passed through Luzon Island, and Dagupan City was the only locality within the province that did not need to declare a state of calamity because of its good state of preparedness and readiness.*

As described earlier, an important contribution of ADPC in the thematic area of CBDRR has been to provide practitioners with practical tools that can be used by them in developing, implementing and evaluation CBDRR related interventions. These tools have been developed based on actual ground experience in implementing CBDRR by ADPC and other partners and have been formulated through considerable consultations with various experienced specialists. *A good example of one such tool*

MANILA RCC 8 STATEMENT ON IMPLEMENTING NATIONAL PROGRAMMES ON CBDRR IN HIGH RISK COMMUNITIES

We the delegates from RCC member countries, viz., Bangladesh, Bhutan, Cambodia, China, India, Jordan, Korea, Maldives, Mongolia, Myanmar, Nepal, the Philippines, Sri Lanka, Thailand, Timor-Lesté and Viet Nam, having met in Manila, The Philippines from 22nd -24th February, 2010 for the 8th Meeting of the Regional Consultative Committee on Disaster Management (RCC) organised by the Asian Disaster Preparedness Center (ADPC) in collaboration with the Government of the Philippines;

Recognising, the most serious impact of a disaster is always felt by the local communities and their immediate environment;
Realising, disaster risk is mostly shaped at the local level depending on the way communities and local stakeholders interact with the local environment, manage the natural resources and built environment;
Recalling that the RCC had at its second meeting in 2001 identified 'Building community level programs for preparedness and mitigation' as one of the Key Action Areas for the RCC;
Recalling the seventh meeting of the RCC held in Colombo in May 2008, with the theme of 'Rights based community led disaster risk management', affirmed the commitment of RCC Members to take up national programs on Community-based disaster risk (CBDRR) reduction in high risk communities;
Affirming the commitment to implement the Hyogo Framework for Action (HFA) 2005-2015: Building the resilience of Nations and Communities to disasters'; adopted at the World Conference on Disaster Reduction in January 2005, the first priority for action of which calls for 'Ensuring that disaster risk reduction is a national and local priority with a strong institutional basis for implementation' and in the process ensuring community participation, so that local needs are met.
Affirming the priorities identified by our honorable Ministers at the Third Asian Ministerial Conference on Disaster Risk Reduction held in Kuala Lumpur on 2 -4 December 2008, which adopted the Kuala Lumpur Declaration on Disaster Risk Reduction, which included as one of the priority areas 'Decentralised DRR: Empowerment of local government and civil society in DRR';
Recognising the need to scale up community level action for DRR in all high risk communities

This 8th Meeting of the RCC calls upon every RCC member country to develop and implement national programs on CBDRR in high-risk communities with the following components:

A. Legal and policy frameworks enabling CBDRR

A1 National DRR policy and legislation in place and providing an enabling environment for community level action on DRR
A2 Legislation on related sectors (such as urban development, water resource management, local government) which recognises the importance of community level action for reducing risk from natural hazards
A3 National DRR Action Plan and programs prioritising CBDRR as a key component
A4 National CBDRR Strategies developed to guide scaling up implementation of CBDRR especially in larger countries where large number of districts are at risk from natural hazards.
A5 National Action Plans for Climate Change Adaptation recognising CBDRR as a key strategy for adaptation and building resilience to climate change at local level
A6 Post disaster recovery and reconstruction programs identifying CBDRR as a key element

B. Technical support to community level action on DRR

B1 National risk maps identifying high risk provinces, districts and communities for prioritised implementation of CBDRR
B2 National technical agencies disseminating hazard and risk maps to community organisation through local authorities
B3 Forecasts and early warning disseminated by local authorities through community level organisation in order to reach communities at risk
B4 Shared methodologies and tools developed for hazard, vulnerabilities and capacity assessment and local level DRR action planning

C. Strengthening partnership on CBDRR between local authorities, implementing partners and community organisation (CBOs), civil society organisations and private sectors

C1 Promotion of effective mechanisms for collaboration and information sharing between Governments at various levels and NGOs, civil society organisations and private sector to achieve accountability and sustainability of CBDRM Programs, as well as coordination with national and local level planning processes
C2 District DM Plans developed by local authorities are effectively linked to DRR plans at all levels from national to community level
C3 Award schemes established for recognition of good practices in CBDRR
C4 Institutionalising the role of educational institutions in promoting CBDRR by raising awareness among communities and participating in community level initiatives.

D. Resourcing CBDRR and linking with local development programs

D1 National DRR program budgets including specific budgetary allocation for CBDRR activities
D2 Local governments in high risk districts earmarking budgetary resources for CBDRR
D3 Community-based measures identified in the local (provincial, district, commune, village) DRR plans included as inputs to the local development plan
D4 DRR integrated into community development projects carried out by NGOs and community based organisations in line with national and local policies
D5 Recognising and building on community capacities, coping mechanisms and indigenous knowledge

E. Strengthening capacity on CBDRR

E1 Investment in orientation and training on CBDRR for Government staff working at district, commune and village level through making use of existing capacity building systems such as college extension services
E2 Expansion of systems and institutions delivering training on CBDRR for local authorities, implementing partner NGOs and community organisations
E3 Adopting cost effective approaches for building capacity, such as by institutionalising CBDRM courses within educational system at tertiary level

Requests RCC members who have been implementing national programs on CBDRR to provide technical support to other RCC members in developing similar programs; the Government of the Philippines in its capacity as RCC Chair to carry the message in this Statement to the 4th Asian Ministerial Conference on DRR, in Incheon, Korea, October 2010 and beyond; ADPC in its capacity as secretariat of the RCC mechanism to contribute through the following actions:

- Development of customised regional advocacy manual covering guidelines on the scope and content of national programs, building on experiences of RCC member countries
- Providing technical support to interested RCC member countries in developing national programs on CBDRR

Calls on development partners UN agencies, donors, Red Cross Societies and NGOs to partner with the RCC and its member countries in implementation of national programs on CBDRR;
Acknowledges the support provided by the **Government of Australia** to this important RCC mechanism;
Acknowledges with great appreciation the gracious hosting and warm hospitality extended by the **Government of the Philippines** for the RCC8 Meeting.

Thanks **ADPC** for effectively fulfilling its role as RCC secretariat.

has been the CBDRM Field Practitioners' Handbook, which now has been adapted and translated into Burmese, Khmer, Lao, Thai and Viet Namese since it was first developed in 2004. This handbook and the earlier discussion publication on Critical Guidelines on CBDRM were influential in shaping the national CBDRM strategies and national programs developed by the national governments in Cambodia and Viet Nam. So, too other guidance materials like the Media Kit for Community-Based Disaster Risk Management and the Media have been well received by specialised users, such as media professionals who play a vital role at the time of disasters.

There has been a strong focus by ADPC on the training and capacity development of practitioners involved in community level risk reduction activities. *These capacity building programs have included regional flagship courses on CBDRR initiated in 1997 and delivered 19 times since then, national CBDRR training courses and other courses developed for specific partners such as the Red Cross and Red Crescent Societies.* Apart from focused courses on CBDRR, all training courses organised by ADPC be it hazard specific courses such as Earthquake Vulnerability Risk Course or thematic courses such Climate Risk Management typically include specific session on CBDRR approaches, good practices and challenges in relation to the overall theme of the course.

The content of these courses have evolved over the years based on advances in the CBDRR thematic area. For example ADPC's regional course on CBDRR have evolved over the years to address implementation challenges in systematic ways. *The newer version of the course addresses DRM issues from a development perspective, adapting local practices, and integrating risk management plans into development plans. The course has increased emphasis on the important roles of women and children in reducing disaster risks, and more recently has promoted more attention about climate change adaptation.* The table below shows the changed content of the course between 2001 and 2010, clearly showing advances in subject matter and the increased linkages between CBDRR and community development domains.

Community-Based Disaster Risk Reduction Course - 6 (2001)	Community-Based Disaster Risk Reduction-Building Community Resilience And Self Reliance - 19 (2010)
• Module 1: Disaster Situation in Asia-Pacific Regions • Module 2: Framework For CBDM • Module 3: Introduction to Community Based Risk Assessment • Module 4: Strengthening Local Capacities • Module 5: Planning Exercise	• Module 1: Context Of Cbdrr. • Module 2: CBDRR Framework. • Module 3: Participatory Community Disaster Risk Assessment. • Module 4: Participatory Stakeholder and Resource Analysis. • Module 5: Participatory Disaster Risk Reduction Planning. • Module 6: Community Disaster Risk Reduction Implementation. • Module 7: CDRR Program Implementation: Challenges and Solutions. • Module 8: Re-Entering the Real World- Making a Difference

Sharing information and knowledge about CBDRR has been an essential component of the PDRSEA project as well as in other programs of CBDRM. As introduced earlier the Disaster Management Practitioners Workshop for South East Asia organised under the PDRSEA has been valuable for sharing experiences and identifying emerging issues and strategies about the subject. It has also proven to be very effective in

developing or expanding partnerships to promote community-based approaches to DRR on a regional basis. Six of these workshops have been organised since 1999 with participation increasing from 70 people from 12 countries at the fourth meeting to 180 participants from 24 countries two sessions later. Building on previous work throughout the region, the workshops highlight successful activities and seek to encourage emerging partnerships.

Future Direction on CBDRR

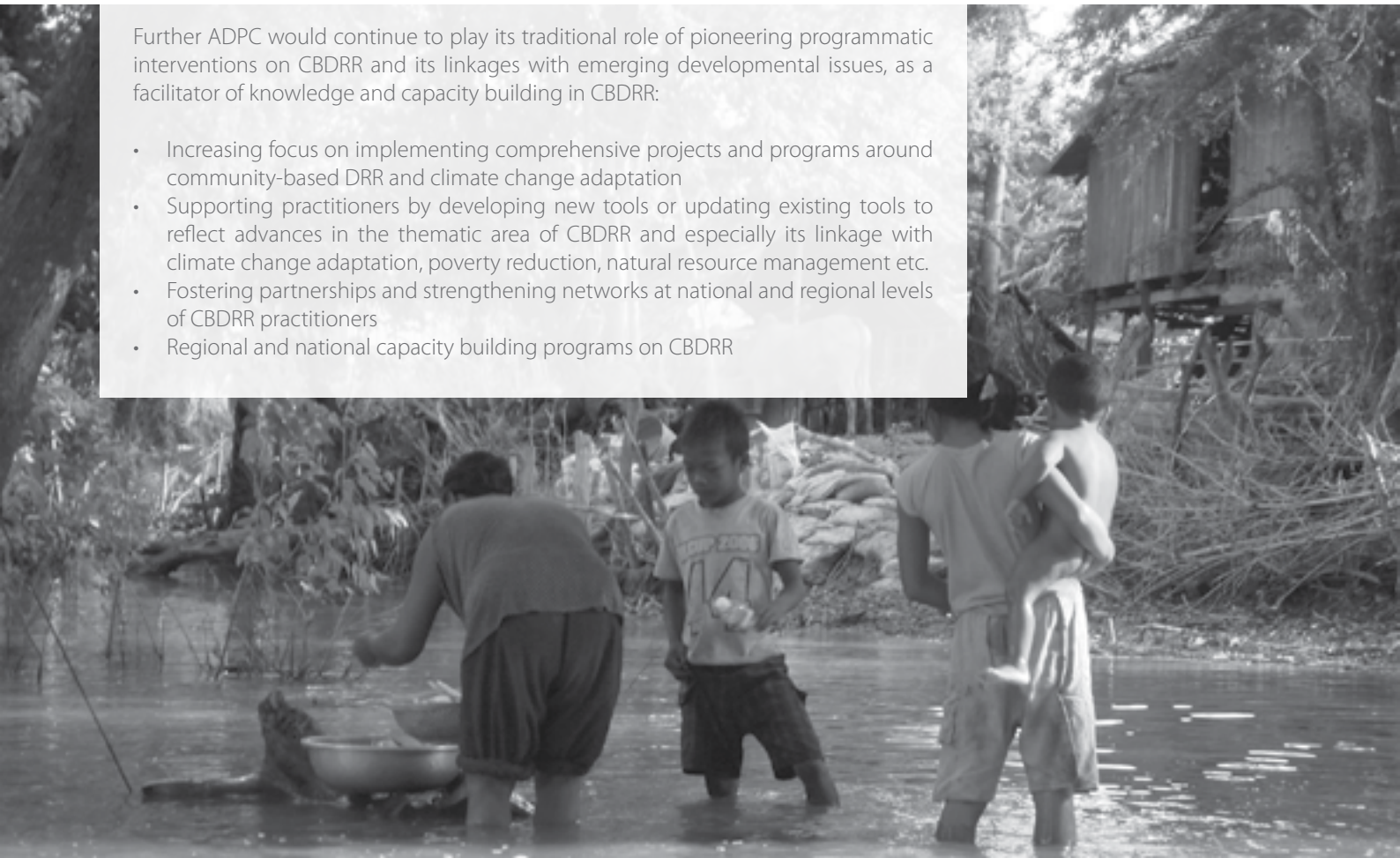
Based on years of experience in implementing initiatives on CBDRR, ***it is increasingly realised that for effective CBDRR to be realised, strong policy support is required both at the national and sub-national levels. It needs to be backed up with institutional arrangements, which recognise the importance of CBDRR and a framework for implementation that adheres to a comprehensive, all-hazard, multi-sector and community-based approach.*** Accordingly, based on the close relationship that ADPC shares with the disaster management agencies at both national and sub-national levels, ADPC is in an advantageous position to continue the work of institutionalising CBDRR at these administrative levels, as initiated under the PDRSEA.

Additionally, based on the direction provided by the Manila RCC 8 Statement, and as the secretariat to the RCC, ADPC can provide technical guidance for developing and implementing national programs on CBDRR in high-risk communities. These programs would attempt to answer some of the challenges in relation to scale faced by CBDRR interventions and would typically include the following components:

- Legal and policy frameworks enabling CBDRR
- Technical support for community level actions on DRR
- Strengthening partnership on CBDRR between local authorities, implementing partners, community organisations, civil society organisations and private sectors
- Resourcing CBDRR and linking it with local development programs
- Strengthening capacity for CBDRR

Further ADPC would continue to play its traditional role of pioneering programmatic interventions on CBDRR and its linkages with emerging developmental issues, as a facilitator of knowledge and capacity building in CBDRR:

- Increasing focus on implementing comprehensive projects and programs around community-based DRR and climate change adaptation
- Supporting practitioners by developing new tools or updating existing tools to reflect advances in the thematic area of CBDRR and especially its linkage with climate change adaptation, poverty reduction, natural resource management etc.
- Fostering partnerships and strengthening networks at national and regional levels of CBDRR practitioners
- Regional and national capacity building programs on CBDRR



4.5 Public Health in Emergencies - Health Risk Management

The Critical Role of Health Risk Management

Whether disasters and emergencies are natural or human-induced, are foreseen or occur without warning, they always have significant health effects and various consequences in countries throughout Asia. There are many unpredictable issues that make the management and response challenging within both official and public domains of activity. Epidemics, conflict and frequent natural disasters strain the region's already limited resources and force people further into poor health and poverty. Some especially severe disasters, like the 2004 Indian Ocean Tsunami and the 2010 floods in Pakistan can exert long-lasting effects on a society which drain both resources and capacities much beyond the initial damages caused.

"With our world threatened by the harmful effects of climate change, more frequent extreme weather events and armed conflicts, it is crucial that we all do more to ensure that health care is available at all times to our citizens, before, during, or after a disaster."

Dr. Margaret Chan,
WHO Director-General[1]

Despite its strong economic growth, Asia currently is home to almost two-thirds of the world's poor people[2]. High rates of urbanisation are evident, particularly among the poorest populations[3]. This results in uncontrolled urban growth leading to overcrowded and unsafe living conditions with inadequate water, sanitation and hygiene. These over-populated environments combined with structurally unsafe buildings increase the risks of accidents and intensify the impacts of disasters. All of these conditions encourage the spread of communicable diseases and contribute to the emergence and re-occurrence of disease outbreaks and epidemics.

In 2010, flooding in Pakistan disrupted 20 million lives and killed over 1,500 people[4]. In the aftermath of the flooding displaced survivors were threatened by communicable disease epidemics including cholera, acute respiratory infections, malaria and skin infections as well as being weakened further by starvation and dehydration. The 2009 Influenza H1N1 virus pandemic had devastating effects on human health, health facilities, schools, and on business, especially in travel and tourism. These circumstances eventually affected livelihoods and the economies of countries throughout Asia and globally.

The prevalence of diseases causing high rates of morbidity and mortality have combined with the lack of skilled health personnel, poor infrastructure, limited financial resources and health systems that are not responsive to the needs of society to create deteriorating health indicators throughout Asia[5].

Managing the health risks of all types of emergencies or disasters necessitates orchestrated actions of the affected community, key authorities, a variety of skilled professionals engaged in medical practice and supporting specialist services for a timely, appropriate, and efficient response. ADPC assumes its part of the challenge in fulfilling its social responsibility by engaging in efforts to realise its vision of creating safer communities through risk reduction. To this effect, *ADPC's Public Health in Emergencies (PHE) program takes initiatives to build the capacities of those people and institutions most immediately involved in managing the health risks associated with emergencies or which accompany disasters regardless of the hazards causing them. Its endeavors are geared towards effective emergency actions at the time of threat or crisis, with the primary objective being to avoid the escalation of the event into a disaster*[6].

1 'Hospitals Safe from Disaster', WHO 2010 ***http://safehospitals.info/index.php?option=com_content&task=view&id=178&Itemid=191,***
2 USAID, Asia Home page, ***http://www.usaid.gov/locations/asia/index.html*** USAID, 2010
3 USAID, Asia Home page, ***http://www.usaid.gov/locations/asia/index.html*** USAID, 2010
4 Dr Jenny, 2010. "Increasing Health Problems among Pakistan Flooding Survivors", City News Post, Aug 23, 2010
5 Bandara, A, 2005. 'Emerging Health Issues in Asia and the Pacific: Implications for Public Health Policy', Asia-Pacific Development Journal 12:2, page 36.
6 UNISDR Terminology on "Disaster Risk Reduction" 2009

ADPC's Public Health in Emergencies Program

ADPC recognises the importance of getting involved in addressing public health issues in any aspect of planning for and responding to disaster conditions. Risks themselves challenge the surge capacity of the health sector in addressing the escalated demands for public health services in times of disaster. It is therefore consistent with ADPC's overall objectives that planning, operational evaluation and assessment, skill improvement, and sustained capacity development justifiably relate to the various actors involved in both public health and emergency dimensions of disaster and risk management practice. Good governance, capable leadership, and effective management are all essential elements for health practitioners to be proficient in providing direction and guidance, planning, and building mutually productive relations with their numerous partners in managing emergency situations and their consequences.

In order to address these issues within the wider context of disaster and risk management, *ADPC's Public Health in Emergencies Program has developed means to provide training and to produce materials to meet the specific needs of health professionals engaged in emergency operations*. One of its primary programs in this respect is *Public Health and Emergency Management in Asia and the Pacific (PHEMAP)*. This program has been developed with initial funding provided by the Japan International Corporation for Welfare Services (JICWELS) and with the collaboration of the World Health Organization's Regional Offices for South East Asia and the Western Pacific (WHO's SEARO and WPRO). The initiative began in 2001 and is being continued with the support of the Royal Government of Norway.

PHEMAP training has been provided in 10 courses for people working at the national and sub-national levels, and it is focused on building both individual and institutional capacities. Content has been chosen to familiarise emergency health managers with policy-making, risk management, emergency response and recovery planning to international standards, while fostering regional cooperation in the process. PHEMAP inter-regional courses have been conducted in Thailand and Viet Nam with attendance by senior officials from ministries of health, planning and social welfare, staff from WHO's Emergency Humanitarian Action Division, and representatives and health program officers from international NGOs. The 276 participants have been drawn from 24 Asian, Pacific and African countries. Sixty additional graduates participated in three National Course Coordinators Workshops, and they in turn conducted national PHEMAP courses in 11 countries. Through this cascading training process PHEMAP has expanded the professional abilities of several hundred health professionals, as was acknowledged by a feature article in Southeast Asian Journal for Tropical Medicine and Public Health.[7]

Health facilities play an equally crucial role in promoting public health and safety, and especially so at the time of urgent needs and

7 Volume 40, No. 6 (Suppl.1) 2009.

often overwhelming demands at times of emergency or disasters. *As ADPC realised the critical need for well-prepared hospitals in managing emergency and disaster events, the first phase of its Program for Enhancement of Emergency Response (PEER) became the Center's first public health program. It was implemented from 1998 to 2002 with funding provided by USAID's Office of Foreign Disaster Assistance (OFDA). It had essential program components such as the Collapsed Structure Search and Rescue, Medical First Responders, Hospital Preparedness for Emergencies, and Training for Instructors. Bangladesh, India, Indonesia, Nepal, Pakistan, and Philippines benefitted from the initial five year training program. A second phase of PEER was conducted from 2003 – 2009 by the National Society for Earthquake Technology (NSET) in Nepal, and a third phase is currently being implemented jointly by ADPC and NSET from 2009 – 2014. In this present phase of PEER activities, ADPC is conducting the Hospital Preparedness for Emergencies (HOPE) program and a new training component, the Community Action for Disaster Response (CADRE). These programs continue with funding provided from USAID/OFDA and the American Red Cross.*

The *Hospital Preparedness for Emergencies Course is primarily aimed to improve the preparedness capabilities of hospitals and health care facilities to maintain their continuous operations during and even after disasters*. This expectation is reflected in their need to be both structurally sound and operationally effective during any likely hazards. Clearly this also has a bearing on the need for all staff and supporting personnel to be sufficiently resilient and able to meet often extreme needs or working under particularly demanding conditions. This involves expanded abilities to manage mass casualties, developing hospital emergency management plans, maintaining an operation center under possibly arduous conditions and developing highly efficient and effective emergency response systems. Two particularly crucial elements in emergency preparedness is the ability to implement sufficient surge capacities rapidly and to conduct practice drill exercises frequently to ensure the functionality of all emergency operational plans and systems.

In the ADPC program countries develop their own HOPE courses adapted to their specific needs and situations. This involves their creation of a pool of trainers and building an active network of training experts, while sharing their training resources with other countries as a part of the process. Through this training, model hospitals will be identified and developed so that they can extend the training to other hospitals in the country in collaboration with ministries of health. The course has produced 300 HOPE graduate trainers in Bangladesh, India, Indonesia, Nepal, Pakistan and the Philippines, in addition to more than 900 participants involved in HOPE's principal course. Since 2009, Cambodia, Lao PDR, and Viet Nam have joined the HOPE program and have now conducted the national HOPE courses and adaptation workshops.

The *Community Action for Disaster Response (CADRE) training course is included in the third phase of the PEER Program with the objective of establishing a system to enhance first responder capacities in disaster-prone local communities in the nine PEER countries. This course draws upon previous training conducted through the second phase of PEER such as the subjects of Medical First Responder, Collapsed Structure Search and Rescue, Training for Instructors, and Community-based First Aid. CADRE training targets local non-professional actors and seeks to increase their abilities to manage the immediate emergencies affecting their families and neighbors before external humanitarian assistance arrives.* This course is being implemented in collaboration with the National Red Cross Societies in the countries concerned. Two years into this five-year program there are currently 24 graduates from the pilot courses in Laos, 72 in the Philippines and 24 in Viet Nam. In addition 48 national trainers have been trained in the Philippines, and a regional pool of trainers also has been created there to assist other countries in developing their own cohort of trainers.

The survival rates of victims of disasters and pandemics depend on many factors, including the abilities of hospitals and health care facilities to handle the sudden influx of mass casualties. Those abilities are directly related to how well prepared the facilities are to anticipate, plan for, and respond to emergency situations. To meet these needs, ADPC designed and conducts the ***Hospital Emergency Preparedness and Response Course. Developed in 2003 this course assists both administrative and medical personnel at all types of hospitals to prepare their facilities and human resources to respond effectively to emergency conditions or disasters likely to involve many casualties. The course provides participants the expertise to develop appropriate all-hazard and facility-specific contingency plans for their continuous operation at the times of greatest need. The course is comprehensive, covering all aspects of hospital preparedness following the professionally regarded concepts and practices of "Making Hospitals Safe from Disaster".*** ADPC has collaborated with health emergency preparedness specialists in Asia to develop and deliver the course over the past seven years. In that time it has drawn participants from 23 countries in Asia, the Pacific, the Middle East, and Africa.

ADPC's Rationale for Emergency Preparedness and Response Activities

ADPC is not directly involved in emergency response operations, but it does ***serve as an instrument and a catalyst in building the capacities of the communities, countries and the region as a whole to be able to respond in timely, appropriate and efficient ways to all types of emergencies. It contributes to the development of an informed and competent workforce by raising awareness and enhancing their knowledge and skills. It also works to build greater resilience within local communities to ensure a responsive health emergency management system.*** By facilitating the exchange of information and sharing experiences, both pave the way of developing holistic, more practical evidence based disaster risk reduction practices.

Since its earliest days, ADPC has placed considerable value in the importance of emergency management plans and operational systems being the basic foundation of a safer and resilient community. Through its various program activities it has developed methods and other measures to test their effectiveness, as is demonstrated through its ***Exercise Management Program***. This activity was first developed in 2002 when it was created as a vital tool for sensitising decision-makers to recognise the various issues which need to be addressed in responding to emergencies and disasters. Drills and community exercises have contributed to the development of new plans and procedures by providing scenario-based techniques that truly address risks affecting a specific population or location, frequently highlighting particular skills Or otherwise evaluating existing procedures. This program is a comprehensive learning approach to design, conduct and evaluate the extent of public knowledge, managerial capabilities and the strength of operational readiness. This is practiced through small-scale discussion drills or by means of larger multi-agency, full-scale exercises. Doctors, nurses, associated health staff, directors and managers of line ministries and government offices or departments involved in crisis situations participate to practice strategic and tactical skills and to validate training procedures. These exercises are crucial for maintaining preparedness and operational standards in the various roles and responsibilities that apply to prevention, response, and recovery activities. ADPC exerts considerable effort to ensure that these exercises be designed to relate to actual or likely risk scenarios, and to be conducted in real physical circumstances to the extent that may be feasible.

The following table provides some of the other training courses offered on public health in emergencies and which shows the increase in scope over the years.

Title of the Training Course/Workshop	Year	Objectives	Partners	Countries
Public Health in Complex Emergencies	Since 2003 and beyond	Building capacities for critical public health issues relevant to NGOs, government agencies, private volunteers and other allied personnel working with refugees and internally displaced persons in complex emergencies	International Rescue Committee, World Education Inc., American University of Beirut in Lebanon and Makerere University in Uganda	Global
Disasters and Development (D&D) Course	Conducted in 2004	Focusing on integrating health emergency risk management and sustainable development	WHO, UNDP	Regional
Nutrition in Emergencies	First offered in 2005	Increasing the knowledge on nutrition among professionals involved in nutrition-related emergency or disaster response	UNICEF-Iran	National course conducted in Iran
	2011 and beyond under new curriculum		Center for International Health Development, University College London	International course offered globally
Mental health and psychosocial support in emergencies	First offered in 2005	Improving the knowledge, attitude and skills of local healthcare providers in managing the psychosocial impacts of emergencies or disasters	Disaster Mental Health Institute, University of South Dakota	Global
	2010 and beyond under new curriculum		Supported by the Royal Government of Norway	Bangladesh and to be rolled-out in China and Viet Nam in the future
Management of the dead and the missing in disasters	Conducted in 2005 and 2007	Enhancing multi-sector approaches to public health in countries affected by mass-fatality natural disasters	WHO, UNOCHA	Regional
Basic Emergency Response Course	Conducted in 2005	Enabling individuals first on the scene to perform first aid functions during an emergency	UNDP	Maldives and Thailand
Health care facility emergency preparedness and response to epidemics	Conducted in 2006	Building capacities of health care facilities to manage communicable disease emergencies, with a particular focus on pandemic influenza	WHO	Bhutan, Philippines, Thailand, Viet Nam
Strengthening community-based approaches to management of avian and human influenza in Asia	2007-2009	Strengthening the role of non-government and community organisations in combating AHI at the community level in the Asia region Increasing the capacity of community-based organisations to engage with governments to include homegrown solutions into national policies for AHI control and prevention	CARE, International Rescue Committee, International Federation of the Red Cross/Red Crescent Societies and supported by Asian Development Bank through funds from Canadian Government	Cambodia, Indonesia, Lao PDR, Myanmar, Philippines, Thailand, Viet Nam
Zoonotic diseases 'One Health' Initiative	Since 2007	Building capacities in Southeast Asia, as the epicenter of potential pandemics, to anticipate, prepare for, and manage the risks of zoonotic diseases in emergencies	Supported by Rockefeller Foundation	Regional

These training exercises encourage personnel from different agencies such as fire, police, health authorities, local government officials, and public volunteers to work together, thereby enabling them to develop a shared understanding about how their individual resources, procedures and systems relate to one another. This practice in realistic settings develops preliminary working relationships that can greatly facilitate inter-operability and efficiencies during real emergencies. Exercises have proven to be effective mechanisms to assess preparedness measures and also to identify overlooked responsibilities, key areas requiring coordination and other operational requirements that can be improved. Even the act of participating in exercises has been shown to increase an organisation's understanding of potential risks to their operational effectiveness and can increase their resolve to prepare better for major incidents.

Examples of ADPC Program Activities in Emergency Preparedness and Response

The Asia Pacific Economic Committee (APEC) sponsored an ***Exercise Management Workshop*** that was conducted by ADPC in Thailand in 2007 to enhance APEC member countries' abilities to design, conduct and evaluate emergency management simulation exercises., by providing a range of resources that participants could use. Additional collaboration was provided by the Australian Government Department of Agriculture, Fisheries and Forestry that allowed for a number of resources useful to the participants. A later Regional Experience Sharing Workshop on Exercise Management was conducted by ADPC in November 2007 for the "ASEAN+3" countries (ASEAN Member States plus, China, Japan and South Korea) to share experiences in conducting exercises for communicable disease emergencies in the participating countries. This contributed to the process of developing an exercise management training package to groom the facilitation skills of people who would later be responsible for conducting future exercises at regional, sub-regional, national and sub-national levels.

By working together with the ASEAN Secretariat, the Thai Ministry of Public Health and AusAID, ADPC conducted another workshop for the same ASEAN + 3 countries in March 2008 in Bangkok, Thailand. A subsidiary ***ASEAN+3 Regional Exercise Management Pilot Training Workshop*** was conducted for officials involved with capacity development responsibilities in their respective countries at both national and sub-national training courses. A similar arrangement was used when ADPC conducted the First Sub-regional Exercise Management Training Workshop on Emerging Infectious Disease Program in Brunei in June 2008. This activity trained exercise management coordinators for preparedness, prevention and control of emerging infectious diseases in Brunei, Indonesia, Malaysia, Philippines and Singapore. Another similar course was conducted in Phnom Penh, Cambodia in December, 2008 for officials from Cambodia, Lao PDR, Myanmar, Thailand and Viet Nam.

A different example of ADPC's roles in exercise training is its involvement in a ***Cross-Border Exercise Management Workshop*** held in June 2008, in Thailand. With the support of USAID's OFDA, ADPC collaborated with the Kenan Institute Asia from Thailand and the Thai Ministry of Public Health to conduct a workshop about managing influenza outbreaks among people residing in the border provinces of Cambodia, Lao PDR, Thailand and Viet Nam. More recently, ADPC worked with the same partners again to conduct a ***Technical Training and Planning Workshop on Cross-Border Zoonotic Disease Outbreak Exercises*** in June, 2010. This latter workshop was designed to develop similar capacities in the management of communicable disease outbreaks in the border provinces of Cambodia, China, Lao PDR, Thailand and Viet Nam. A significant

accomplishment in all of these initiatives was ADPC's role in fostering relationships that could yield better cross-border collaboration and between adjoining provinces in matters of disaster preparedness.

In almost every crisis situation there is the potential for miscommunication, incompatible operating procedures, and various chains of command among different operational agencies involved in emergencies. There is a universally recognised and systematic program of operational management supported by commonly understood and accepted professional standards. In recognising the value of this harmonisation, *ADPC has organised training courses based on the internationally recognised Incident Command System since 2009. ICS courses have been offered at the regional level, and also at national level in countries such as Maldives, Myanmar and Thailand.* Although initially intended for military application, after it was adapted for public safety requirements the ICS has proven to be beneficial for emergency health practitioners since they are among the earliest actors involved in crisis situations. Thus an ICS course with a focus on health sector have been developed in 2010 with an aim to improve their capacity in able to coordinate an organised response in providing necessary health services during emergencies and disasters. The ICS training methodology has proven its worth in polishing the respective abilities of both emergency health professionals and disaster management officials in improving their shared needs of integrating into the overall emergency management response system.

Future Directions for Public Health in Emergencies

Conditions associated with global warming, a changing climate and extreme weather events will continue to create threats to ecosystems and ultimately to public health and safety. Although there are now fewer than in the past, a few occasions of conflicts in parts of Asia remain unresolved, leaving displaced populations in temporary shelter with limited access to basic needs. These circumstances will continue to favor the spread of communicable diseases. The number of confirmed human cases of the Influenza H5N1 virus in 2009 was almost double the number of recorded cases in 2008[8], so that virus continues to pose a global pandemic threat.

In response to these and other impending hazards, *ADPC remains engaged in anticipating and responding to the challenges of managing health risks. In anticipation of the effects climate change will have on health, ADPC is developing climate risk management programs that relate to health just as they also pertain to cities, local communities, and the responsibilities of public administration across Asia. Efforts in promoting public health and safety will be driven by the ADPC principles that are grounded in maintaining a continuing awareness of the needs and demands, opportunities and resources of Asian countries. Public Health in Emergencies programs will remain committed to scaling up projects which build the capacities of individual practitioners, first responders, and frontline health workers and the communities which they serve, so that they can make their own health facilities more resilient, and manage emergencies more efficiently.*

By utilising and extending its existing network of partners even farther, and in working together with other professional resources, ADPC will continue to foster cooperation and sustained commitments throughout Asian countries in building safer and more resilient communities. Through education, training and practice ADPC's Public Health in Emergency programs also expect to contribute their combined abilities, interests and motivation to minimise the number of casualties that occur from disasters.

8 United Nations and the World Bank, 2010. 'Synopsis: Animal and Pandemic Influenza: A Framework for Sustaining Momentum. Fifth Global Progress Report'.

4.6 Multi-Hazard Early Warning Systems

Evolution of ADPC Involvement in Early Warning Systems

Nature has proven, time and again, that hazards do not recognise political boundaries. Addressing the impacts of trans-boundary hazards, such as the unprecedented Indian Ocean Tsunami of December 2004, requires concerted actions of governments, organisations, and individuals. This is most important in long-term considerations for disaster prevention and mitigation, not only at the time of responding to immediate needs prior to an emergency event.

Only days after the tsunami killed more than 230,000 people, ASEAN leaders met in Jakarta and agreed to establish a regional tsunami early warning system for the Indian Ocean and Southeast Asian region. As the initiative progressed, ADPC played critical technical and managerial roles over the next five years to realise a new early warning institutional capacity that has grown directly from regional needs and resources. Initial plans focused on developing national and regional human and institutional capacities that could be advanced through international cooperation. The driving tangible objectives were to create and then manage an Asian early warning system. Specifically regional leaders recognised the need for a systematic process to promote the transfer of scientific knowledge, operational experience and necessary technology into operational capabilities within the affected region.

Three weeks later at the end of January, 2005, an ASEAN Ministerial Meeting was convened in Phuket, Thailand to provide the direction for such early warning arrangements to be created from existing regional institutions while also strengthening and upgrading national warning systems. *The expressed goal was to link individual national mechanisms with sub-regional and regional capabilities, fully integrating early warning with preparedness, mitigation and response abilities within national disaster management structures. It was further decided that this comprehensive "end-to-end" strategy[1] should be applicable to all types of hazards if the resulting warning systems were to be fully valued and therefore able to be sustained through direct beneficiary resources.*

The ASEAN meeting acknowledged ADPC's readiness to serve as a regional center for a multi-nodal tsunami early warning system in the region, and decided to strengthen the Center's abilities, and to provide it with additional technological capacity. ASEAN also welcomed Thailand's proposal to establish a voluntary trust fund for strengthening these combined national and regional capacities in early warning.

Despite these rapid regional decisions, Southeast Asian states were not included in the deliberations of the first UNESCO/IOC international coordination meeting on regional tsunami early warning that was convened in Paris in March 2005. Senior officials of Cambodia, China, Lao PDR, Myanmar, the Philippines, Thailand and Viet Nam later met in Bangkok at the end of March and agreed to establish end-to-end, multi-hazard early warning arrangements in the Indian Ocean and Southeast Asian region. Eventually, by working within the framework of UNESCO/IOC and the World Meteorological Organization (WMO), with technical support provided by China and the Philippines,

1 End-to-end early warning system refers to a system that links the generation of scientific information and technical analysis of a hazard through means of communication to the eventual community actions in responding to warning information provided to potentially affected locations and communities, with inbuilt feedback mechanisms employed to ensure continuous functional improvement.

and in partnership with Thailand, these countries requested ADPC to coordinate the new regional early warning arrangements. Bangladesh, the Maldives, Sri Lanka, and more recently Mauritius, subsequently joined this regional initiative. Additional agreements with Pakistan and Mongolia are being finalised currently.

These collaborating countries all envisioned a system whereby the countries could each contribute technical and human resources through the secondment of personnel, drawing additional combined resources through partnerships and the shared engagement of international experts. Such a joint approach was conceived to provide mutual advice, to exchange data and experience, and to conduct joint research activities for the benefit of all participating countries.

This innovative and collaborative endeavor could also enable the acquisition of leading international scientific knowledge and allow the countries to benefit from technical best practices in a shared and economical manner. The participating countries also thought that such a collaborative system could encourage efforts to constantly upgrade and sustain individual national and local disaster preparedness and response capabilities to meet the challenges posed by low frequency, high impact hazards in the region.

By mid-2006, the countries concerned agreed that in addition to serving as the facilitator of the regional early warning system, ADPC could also become a regional tsunami watch and alerting provider. In time and with the growing involvement of national hydro-meteorological services and the collaboration of WMO, these functions were expanded to include the provision of locally-specific disaster warnings for the more frequent hydro-meteorological hazards that threaten the region.

The resulting institutional arrangements that were to be nurtured through ADPC's efforts with countries' own commitments and other international organisations' collaboration provided for the adoption of a regional program for multi-hazard early warnings. ***These would be pursued through five components: regional hazard observing and advisory systems; strengthened national capacities in early warning, disaster management planning, risk communication, and emergency response; enhanced local capacities to assess disaster risks, respond to warnings, and undertake local risk reduction; regional exchanges of information and best practices; and joint research to improve system performance and recipients' responses to warning information.***

In 2006, the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) approved contributions from the UN Regional Tsunami Trust Fund for establishing the ADPC-facilitated, regional multi-hazard early warning system. The Danish International Development Agency (DANIDA) provided initial support to establish regional capacities to assist participating countries in providing locally relevant hydro-meteorological disaster risk data and information through the Enhancing Community Resilience project for natural disasters in Southeast Asia. This project helped develop capacities at the regional facility to support countries' efforts to generate accurate severe weather forecasts.

UNESCAP supported two further phases of the regional early warning system project through a UN Voluntary Trust Fund. By providing this continuing support, UNESCAP laid the foundation that enabled the transformation of the initial ADPC-facilitated regional early warning system program into what has since become an independent, inter-governmental institution. Now established as the Regional Integrated Multi-hazard Early Warning System (RIMES) for Africa and Asia, since September 2010 the new technical regional institution is owned, financed and managed by participating member states.

Separately, ADPC supported another regional project for integrating tsunami warnings locally by collaborating with the American Red Cross. By fostering the improvement of the Multi-Hazard Early Warning System in Indonesia, Philippines, Sri Lanka and Viet Nam activities concentrated on the development and use of location-specific early warning information and building local capacities for its translation and applications in local communities.

ADPC's Early Warning Programs

End-to-end Early Warning of Tsunamis and other Natural Hazards for Disaster Preparedness and Mitigation in the Indian Ocean and Southeast Asia

This project was conducted in two phases from 2006 to 2010 to establish a real-time seismic observation network to complement the near real-time sea level observation network project also funded by the United Nations Regional Tsunami Trust Fund. *A central element of the project was to create a facility able to receive, process, archive and disseminate tsunami advisories to participating countries. The project also supported national and local capacities in warning communication, emergency response, disaster preparedness and mitigation.*

Activities included the replication of procedures previously developed by the United States- Indian Ocean Tsunami Warning System for countries where they could provide the most benefit. While the regional components benefitted all the countries participating in the arrangements, specific national and sub-national activities focused on Maldives, Myanmar, Philippines, Sri Lanka and Viet Nam. The second phase of the project is being implemented by RIMES since 2009, and is strengthening the regional tsunami warning system through modeling tsunami scenarios. When combined with newly established procedures and operational linkages between the regional system and individual national warning facilities the project enhances local level warnings and informs response activities.

A network of four seismic stations has been established across Myanmar, Philippines and Viet Nam to transmit real-time seismic data through regional satellite links and they also expand the global sensing network. The regional facility for tsunami monitoring, now operated as a part of RIMES, accesses real-time sea-level and seismic information, provides data processing and dissemination facilities for earthquake monitoring, and it conducts tsunami threat analysis. Besides providing tsunami watch information on an experimental basis since April 2010, these facilities also provide research and development support for national meteorological and hydrological organisations.

Enhancing Community Resilience to Natural Disasters in Southeast Asia

This program focused on building community resilience to coastal hazards in selected sites in Cambodia and Viet Nam from 2005 through 2008. The motivation for the activities arose from the limited lead time typically available to warn coastal populations of imminent storms. Efforts concentrated on measures that could translate technical data about potential impacts into information that could convey practical meaning in local communities. Program activities also provided more information regionally as a more economical means for acquiring forecasting technology and training personnel on a consolidated basis.

The program successfully created regional capacity for longer-lead time, high resolution early warning information for hydro-meteorological hazards, and integrated it successfully with less frequent events like tsunami. The participating countries agreed to assume all operational and financial responsibilities of the system in recognition of the value it provided to their meteorological and early warning services. The regional early warning facility established under this project was transferred to the member-states to demonstrate its viability beyond the initial period of external support from DANIDA. The resulting community engagement has provided a much-needed opportunity to demonstrate the value of demand-driven, location-specific hazard information, and how it can stimulate further interest from member-states for similar initiatives.

The project tested several local risk assessment and monitoring methodologies developed in addition to demonstrating the use of geographical information systems and remote sensing for risk assessment. The project also tested the Coastal Community Resilience tool successfully. Village leaders and selected households were trained in disaster preparedness and risk communication techniques, including the pilot testing of a typhoon tracking map. A community-based emergency response course was developed and conducted in association with local Red Cross chapters. These various demonstrations contributed to local modifications of technologies to assess the resilience of coastal communities and in doing so encouraged different types of collaboration.

Strengthening Multi-hazard Early Warning Systems

The American Red Cross supported a program in which ADPC collaborated with the national hydro-meteorological services and the National Red Cross Societies in Indonesia, the Philippines, Sri Lanka, and Viet Nam, from 2008 - 2010 to establish or improve and institutionalise national early warning forums. The initiative was designed for wide public access and appeal to strengthen multi-hazard early warning systems for multiple hazards in the target countries to communicate information about hazards, to share various sector response plans and to enhance inter-agency coordination. These activities were planned to contribute to building the capacities of field-level National Red Cross units in translating hazard risk information into likely consequences as a method for introducing and weighing various response options at the time of a disaster. Other organisations also participated, such as departments of agriculture, water resources, health and transport and were guided in applying risk information and the knowledge of possible impacts for contingency plans applicable to their respective areas of activity

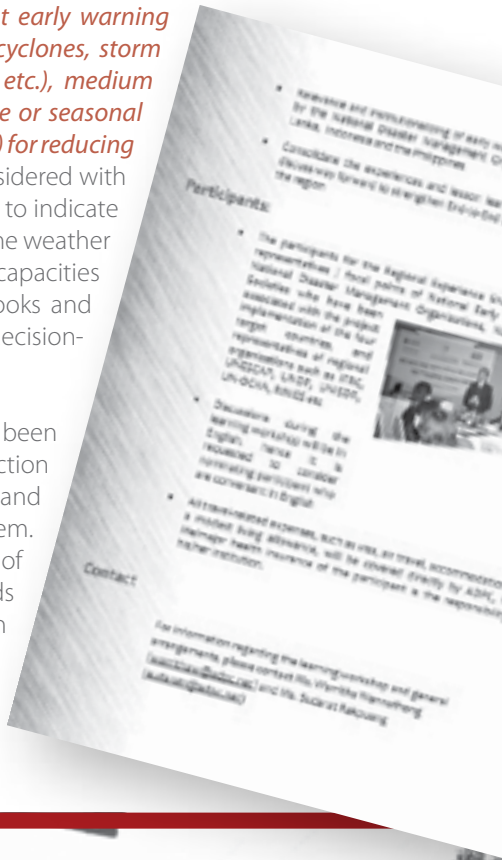
A regional workshop was organised in Bangladesh for Red Cross staff, government officials from the four target countries, and representatives of international organisations to learn from the country's experience in cyclone early warning. Information was shared about defining the roles of various participants, understanding issues about sustaining partnerships. Visits were scheduled to sites involved with the highly regarded Bangladesh Cyclone Preparedness Program in operation for 40 years and ADPC's Climate Forecasting Applications project sites which are involved with monsoonal and flash-flood early warning practices. The project also focused on documenting project outcomes and impacts, including sharing experiences about the process of institutional change and successes for policy advocacy.

Building Capacities of National Hydro-Meteorological Services for Early Warnings

With Bangladesh, China and Viet Nam being the countries most vulnerable to multiple coastal hazards in the region, this ongoing initiative aims to strengthen the national hydro-meteorological services (NHMS) in these three countries. With support provided from 2009-2012 by the Ministry of Foreign Affairs of Royal Norwegian Government, emphasis is given to end-to-end early warning of hydro-meteorological hazards, which occur in the short, medium and long terms, as well as and climate timescales. *The initiative specifically engages in establishing multi-stakeholder forums for early warning through which the NHMS can deliver early warning information to relevant sectors and evaluate potential impacts. This is necessarily related to the NMHS' preparation of response plans and sector specific adaptation measures.* Evaluation measures are also included as means are considered for obtaining responses from the users about the relevance of information, its effect on decisions to reduce disaster risks, and other suggestions to improve the systems in use.

The program also involves the development of user-relevant early warning tools and early warnings for short range weather (such as cyclones, storm surges, heavy rainfall events, severe thunderstorms, floods, etc.), medium range weather (such as dry & wet spells, etc.) and long range or seasonal weather (such as excess & deficit rainfall, prolong droughts, etc.) for reducing disaster risks. More extensive climate projections also are considered with a particular interest in downscaling future climate projections to indicate probable temperature and precipitation trends or likely extreme weather events. Lastly the project works to enhance the institutional capacities for the application of early warnings, seasonal climate outlooks and future climate projection information products for use in decision-making.

By drawing on this rich experience, ADPC subsequently has been supported by the World Bank's Global Facility for Disaster Reduction and Recovery to assist the Lao PDR Department of Meteorology and Hydrology in establishing an end-to-end early warning system. This current activity is focused on the effective dissemination of forecasts, warnings and other relevant information about floods in the particularly vulnerable provinces of Attapeu, Saravanh and Sekong.



Future Directions

As ADPC considers both the growing interests as well as the increasing needs for effective multi-hazard early warning systems in Asia, the following issues will influence its future objectives and pursuits:

- Institutionalise end-to-end early warning systems for effective dissemination of hydro-meteorological hazard information and warnings;
- Link institutions, their collaborators and intended users in their shared interests of raising awareness about climate risks and extreme events through the means of multi-stakeholder forums.
- Enhance the capacities and provide technical support to hydro-meteorological services for them to adopt and interpret suitable models for better prediction of hydro-meteorological hazards and events.
- Highlight the importance of incorporating early warning, disaster risk reduction and climate risk management measures into planning and development within and among partner countries and organisations.

4.7 Mainstreaming Disaster Risk Reduction Into Development

Evolution of Mainstreaming at ADPC

In 2004 ADPC undertook a programmatic approach towards "mainstreaming" disaster risk reduction (DRR) in development policy, planning and implementation. However, the need to adopt this approach which links disaster reduction to development practice was recognised by ADPC as early as the mid-1990s. Consequently, the ADPC Strategic Plan 2000-2005 identified mainstreaming DRR as one of the center's goals. Equally motivating was the fact that ***the Regional Consultative Committee on Disaster Management (RCC) at its first and second meetings in 2000 and 2001 identified "integrating disaster management in national planning" as one of the key priorities for implementation by RCC Member Countries and ADPC from 2001 to 2010***.

This direction provided by the RCC was based on the experiences of some of its member countries such as Bangladesh, China, India, and Philippines in undertaking their own comprehensive multi-hazard disaster risk management programs. ADPC likewise pursued this approach through some of its regional programs like the Asian Urban Disaster Mitigation Program (AUDMP) from 1995-2005, and the Extreme Climate Events (ECE) program from 1998-2003. This experience led to the creation of the RCC Program on Advocacy and Capacity Building for Mainstreaming Disaster Risk Reduction in Development in 2004, with the support of the Government of Australia and AusAID.

The RCC members further confirmed their commitment to the program by adopting the "Hanoi RCC 5 Statement" on the subject of mainstreaming disaster risk management in development and enhancing regional cooperation, at the RCC 5 Meeting in 2005. The program was later registered with the UN Commission on Sustainable Development as a World Conference on Disaster Reduction (WCDR) Partnership. A corresponding outcome of the WCDR sought the "launching of specific initiatives and partnerships to support the implementation of the International Strategy for Disaster Reduction".

ADPC's efforts in mainstreaming focuses on the integration of disaster risk reduction practice in development policies, plans and activities. This essentially translates into specific risk reduction related actions relevant to different development sectors, based

Hanoi RCC 5 Statement on Mainstreaming DRR into Development

This 5th Meeting of the RCC calls upon every RCC member country to Mainstream DRR into development over the coming decade, and to undertake Priority Implementation Partnerships in following thematic areas:

- Mainstreaming DRR into National Development Policy, Planning and Implementation,
- Mainstreaming DRR in priority sectors namely, Agriculture, Education, Health, Housing, Urban Planning and Infrastructure, Financial Services and Environment and Natural Resources

Agree that the national and local level mainstreaming in sectors will not be limited to the priority sectors or themes listed above but will involve a greater number of sectors, agencies and themes; and emphasize that the mainstreaming of enhanced disaster resilience be done in post-disaster recovery programs of all disaster prone sectors;

Welcoming the willingness of member countries to implement Priority Implementation Partnerships (PIPs) on MDRD in ongoing development programs funded from national budgets and ongoing external funding; and recognizing that the process of implementation will be an active learning experience to understand how mainstreaming can be achieved;

Recognizing the need to document and share information on good practices and initiatives undertaken by RCC member countries so that others who are only now starting may benefit and therefore calls on Governments and technical support agencies to highlight and make visible existing good practice in implementing disaster resilience and safety in development programs in various sectors by suitably documenting experiences, key success factors and lessons learned.

Recognizing the responsibility of the RCC as a mechanism, offers to serve as a useful forum and reporting mechanism through which the progress of the implementation of the HFA can be monitored by ISDR, and advocates that the 10- year HFA framework should be broken down into 2- year milestones of accomplishments to facilitate a workable implementation of the HFA for each of the RCC Member Countries.

Highlights the need for action by development partners (UN Agencies, Donors, International Financial Institutions and others) to:

- Enhance links between development and humanitarian assistance programs and budgets of their agencies;
- Incorporate disaster impact assessments into their project appraisal and review processes and;
- Include comprehensive assessments of disaster risk in their country assessments and country assistance strategies; and
- Adopt policy recommendations of the UNDP, UN/ISDR and ProVention Consortium documents on integrating DRR into development compatible with the local situation and conditions.

Requests ADPC in its capacity as secretariat of the RCC mechanism to continue to be the support agency of the RCC program on Mainstreaming DRR into development through following actions:

Developing a set of Guidelines documents for mainstreaming DRR, and
Appreciates the support of the Government of Australia and expressions of interest by other countries and UN agencies to support implementation of its program on mainstreaming DRR into development by:

- providing funding for PIPs and meetings;
- supporting development and publication of Guidelines; and
- providing active linkage with the regional and national capacity building and technical assistance initiatives of various development partners.

on the development contexts of individual countries. It requires working with the professional disciplines involved in health, education, housing, environment, planning.

A primary emphasis of such action is identification of entry points for disaster risk reduction in the development processes. Typically these processes are led by both national and local government authorities in their respective levels of responsibility. Supplementary advocacy and capacity building actions frequently include external partners such as United Nations agencies, development banks and bilateral technical assistance organisations as well international and local NGOs engaged in development activities.

The RCC Program was initially designed to address the objectives of increasing awareness and enhancing capacities of government officials for mainstreaming disaster risk reduction in development. While major components of the program were designed to do this at national and sub-national levels, equal emphasis was to mainstream DRR within different sector. This approach complements other ongoing ADPC programs. The urban programs link their outcomes with urban development mechanisms, while the extreme climate events programs related DRR to agricultural planning initiatives. The flood management program pursued efforts to integrate DRR into development planning at sub-national scales or within river basin contexts.

The RCC Program also gave equal emphasis to actual implementation of activities, which strengthened partnerships between national disaster management offices and individual sector agencies. These activities being chosen by the RCC member countries are consistent with the wider development initiatives being pursued by the countries.

The heightened awareness on risk reduction which followed the 2004 Indian Ocean Tsunami and countries' adoption of the Hyogo Framework for Action a month later in January2005 provided considerable impetus for DRR in many Asian countries. This stimulated new directions for the RCC Program with clear guidance provided by the RCC members at their Meeting in Kunming, China in 2006. Technical consultations with development agencies followed in January 2007 to re-design a full-fledged multi-donor program with phased implementation from 2004 to 2015. *The resulting program explicitly aims to engage planning officials from development sectors, using easily understood language and contexts familiar to development practice. Thus, the RCC Program was renamed as Partnerships for Safe Development and Good Governance, with a stated goal to advance the realisation of the Millennium Development Goals.*

The RCC Mainstreaming program is designed with five broad components:

- Undertaking Priority Implementation Partnerships (PIPs) for mainstreaming DRR in national and local development planning processes;
- Undertaking PIPs in key development sectors like agriculture, education, health, shelter and infrastructure;
- Advocating for political support for DRR;
- Showcasing good practices; and
- Building capacities to mainstream DRR in development activities.

The essential program partners identified include government authorities in the primary ministries. These include officials in ministries of planning, agriculture, education, health, housing and public works. Working with sector agencies also marked a significant shift in the revised strategy for implementing DRR initiatives away from only disaster relief and management agencies and has become vital for mainstreaming DRR. Equal emphasis also has been given to strengthening partnerships between these sector ministries, national technical agencies and the national disaster management offices. This altered emphasis was based on the experience gained through other ADPC programs such as the Climate Risk Management activities which worked closely with the agriculture sector, and the Public Health in Emergency programs that have developed strong relationships with the health sector.

Support for Mainstreaming

The multi-donor approach adopted by the RCC Program has led to continuing support from the Government of Australia and its development assistance agency AusAID. It has also stimulated new additional support from the European Humanitarian Office, ECHO;the German technical assistance agency, GTZ;and the Swedish International Development Agency, SIDA. This new programming approach also created closer partnerships between ADPC, UNDP, and UNISDR.

Similarly, support for ADPC's ongoing urban programs like the one provided by USAID's Office of Foreign Disaster Assistance, was expanded to include specific components on mainstreaming DRR in local government and developing relevant guidelines for participating countries. The second phase of the Flood Emergency Management and Strengthening Project under the Flood Management and Mitigation Program of the Mekong River Commission supported by GTZ has included efforts to link DRR activities with local commune, district and provincial development and investment planning in Cambodia and Viet Nam.

ADPC Program Activities Featuring Disaster Risk Reduction In Development

ADPC's mainstreaming initiatives emphasise DRR practices within national or more localised development planning and sector areas of interest. *Priority Implementation Partnerships (PIPs) have been undertaken in Nepal in 2009 to identify opportunities for including DRR in documents necessary for the formulation of annual plans at national, district and municipality levels. Ongoing PIPs in Bhutan for 2010-2011 also are working to mainstream DRR in the national and local development planning processes. Other similar examples include national guidelines developed in Cambodia in 2010 for mainstreaming DRR in the provincial development planning processes. At municipal scale, programs on mainstreaming DRR in municipal plans and regulatory procedures are being implemented in Matara, SriLanka, and Dagupan City in the Philippines.*

Within individual sectors, similar initiatives have been implemented over the years in the fields of agriculture, education, health, housing and public works. In agriculture, ADPC initiatives date back almost a decade when the innovative idea of a "climate field school" was developed in Indramayu District in Indonesia to support the wider communication of climate information between technical suppliers and the individual users of specialised information at various levels. The scope of this concept was later expanded beyond the pilot sub-districts to other locations with financial support provided by the district government authorities.

There has been similar practical experience used within the education sector in Indonesia and Nepal, when an early element of the urban program was implemented in the 1990s. Additional efforts have been realised by the RCC Program in working with the ministries of education in Cambodia, Lao PDR, and the Philippines from 2007-2009.

PIPs have proceeded to include DRR in both pedagogical practices as well as activities relating to the improvement of facilities in the education sector. This resulted from working closely with national teaching institutes to build teacher capacities in integrating DRR concepts in the school curricula. It also included supporting development of teaching materials. These efforts also involved working with school construction department in the Ministries of Education to develop national guidelines for safe school construction in Lao PDR and Philippines. The development partners were encouraged to use those guidelines for future school construction elsewhere in the country.

Other PIPs pursued include: housing sector in Sri Lanka from 2008-2010;health sector in Bangladesh in 2008-2009; and road construction in the Philippines in 2006. Each of these examples follows similar approaches of working through partnerships with

ministries, technical agencies to identify opportunities in their respective sector for integrating DRR. Practice has shown that these efforts can be productive within various sector development policies, plans, programs and specific activities suited to the distinct needs.

Practical Accomplishments of Disaster Risk Reduction Activities in Development

More examples of accomplishments in mainstreaming DRR in development include the design of national DRR curriculum modules in Cambodia, Lao PDR, and the Philippines. National school construction guidelines have been prepared for Lao PDR, and a revised National School Facilities Handbook for integrating DRR was approved by the Department of Education in the Philippines. The PIP providing technical advice for integrating DRR in the National Housing Policy in Sri Lanka is currently awaiting official approval. An ongoing PIP in Bhutan provides recommendations to the national Gross National Happiness Commission for integrating DRR in the Local Development Planning Manual. In each of these cases, emphasis has been placed on integrating DRR in the existing development planning documents rather than attempting to develop new and separate endeavors.

Guidelines, technical advice and other forms of specific guidance with regional scope are additional examples of practical accomplishments of mainstreaming DRR. Some have been developed under RCC auspices since 2007, such as sets of guidelines on mainstreaming DRR in school curricula, road construction, and land use planning. A set of four guidebooks on urban governance and community resilience has been produced by ADPC's urban program in 2010. They provide guidance to urban development agencies on how to mainstream DRR in process terms and also by citing specific techniques. As these tools are regional in scope, they need to be adapted to individual country contexts for their effective use. In one such case, the RCC guidelines on mainstreaming DRR in the school curricula assisted officials' efforts in the Department of Education in the Philippines to detail out their approach to mainstreaming DRR.

The PIP in Sri Lanka has been successful in strengthening partnerships among the national agencies involved in the housing sector. The resulting partnerships have drawn on government officials from the agencies responsible for housing, land use planning, coastal conservation, local government, building research, disaster management while also including officials from other relevant national agencies. They have also provided technical inputs that can be shared across each other's work. For example, the Urban Development Authority has used the hazard maps developed by the Disaster Management Center of Government of Sri Lanka to prepare the development plan for the Kanthale area.

Strengthening Capacity and Training Initiatives

The need for capacity building in mainstreaming DRR is addressed through individual training courses developed under the RCC Program. Other courses offered by ADPC such as the Disaster Management Course, the Community-based Disaster Risk Reduction Course, the Flood Disaster Risk Management Course and the Earthquake Vulnerability Reduction Course also include segments which address mainstreaming issues. ADPC's urban program has designed and conducts courses on mainstreaming DRR in local government activities. Each of these courses emphasises the importance of integrating DRR awareness and imparts specific skills to advance mainstreaming strategies.

Specific examples include a one-week course designed under the RCC Program for government officials from ministries of planning and national disaster management offices. The course covers topics concerning DRR and national socio-economic development plans, sub-national planning efforts and investment strategies. The content also takes account of development planning processes within individual sectors, considers financing options for DRR, and suggests advocacy techniques for building more effective partnerships.

The RCC Program also has initiated a process for developing country-specific national training courses on mainstreaming DRR, and exploring ways that such courses can be institutionalised within existing public training systems. By following previous experience of the urban programs in Sri Lanka, similar ADPC initiatives are currently under development for Bhutan, Pakistan, and Sri Lanka.

Information, Knowledge and Experience Exchange

The dissemination and sharing of experiences are important components of all major ADPC programs. Created as an institutional mechanism to share regional knowledge, the RCC itself provides a continuing presence to promote the exchange of knowledge and experiences among member countries. *Senior officials from the National Economic Development Authority of the Philippines and from the National Planning Agency of Indonesia (BAPPENAS) were instrumental in sharing their experiences on integrating DRR in land use and physical planning, and in national development planningin events organised under the RCC Program.*

Beneficial occasions were used to this effect during the first and second sessions of the Global Platform for Disaster Risk Reduction in Geneva in 2007 and 2009, at the third and fourth Asian Ministerial Conferences on Disaster Risk Reduction held in Kuala Lumpur and Incheon in 2009 and 2010, and at the Asia-Pacific Climate Change Adaptation Forum in Bangkok, in 2010. Similar events for sharing experience and providing technical information have been organised as part of all PIP initiatives involving government ministries/departments, national technical agencies, and external development assistance organisations.

Some initial progress has been made under the RCC Program to develop a dedicated web portal to host information such as policy documents, development plans, and sector programs.

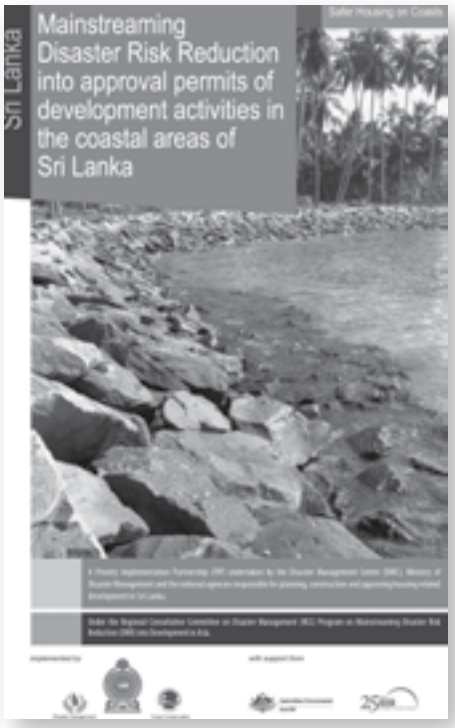
Future Opportunities for Mainstreaming Disaster Risk Reduction

By working together, the RCC Program and ADPC have adopted a pioneering programmatic approach on mainstreaming DRR in development. However, with the rapid pace of development in many countries, the increased commitment by countries to accelerate achievements of the Millennium Development Goals, and the increasing risk from climate change, much more needs to be done to achieve the goals of the RCC Program.

In the future, ADPC initiatives on mainstreaming DRR can look into two particular aspects of integrating DRR in development planning procedures and development practices. The first beneficial approach would be to support countries systematically in their own efforts to integrate DRR in government-led development planning at both national and sub-national levels. This could be accomplished most productively if it could proceed in tandem with partnership strategies of primary development partners.

The second desirable aspect would be for ADPC to lead a more rigorous appraisal regarding the actual applications and the impediments to sustainable development. It is timely to consider such an evaluation in the present era considering the emerging challenges for development that have become evident. This bold initiative could provoke a serious review about the way in which development is practiced and the lasting assumptions on which it is based that have a distinct bearing on the future destructive consequences of disasters. This could, for example, highlight the importance of ensuring that social and physical or infrastructure development programs embody risk assessments as an essential part of their preliminary feasibility assessments. Unmet needs remain for existing regulations to be evaluated more stringently such as in the enforcement of building codes and by-laws. A fortified program could provide needed impetus to recognise the importance of hazard resistant construction and the greater safety inherent in socially resilient populations.

Lastly, pressing needs remain, and numerous opportunities also beckon to relate the shared concerns and available technical abilities that exist among environmental management, protection of natural resources, climate variability and their combined relevance in reducing disaster risks.



4.8 Disaster Reconstruction and Recovery

The Importance of Post-Disaster Reconstruction and Recovery

Reconstruction, or more generally, recovery following a disaster is considered to be the most complex and challenging aspect of disaster risk management for several reasons. When a distinction is made between the two functions, reconstruction is most easily understood to refer to those physical actions necessary to re-establish access to and the functioning of resources and facilities that people in a society must depend upon prior to their loss in a disaster. Additionally, recovery is becoming more widely employed to include the socio-economic dimensions of the overall rehabilitation process following a disaster essential for re-establishing livelihoods, personal well-being, and community resilience – ideally at a higher standard than existed before the disaster occurred.

In recent years, and especially since the Indian Ocean Tsunami of December 2004 the broader concept of recovery is growing in popular understanding, media usage and in professional references. This transition may also reflect the casual inference that reconstruction tends to suggest a more specific sense of physical replacement. This is increasingly considered to be an inadequate expression of the complexity of the needs and processes involved in people recovering from a disaster and the time required for them to do so.

Recovery is therefore the set of actions that comprise a link between immediate emergency relief and response at the time of a disaster and the longer-termed and continuing processes of development for sustained human well-being. Recovery is complex in that in addition to the replacement of physical facilities and systems it also involves the restitution or expansion of many more human requirements. Depending on the consequences of a disaster event, recovery activity may range from the provision of shelter, restored access to basic human needs to more complicated issues of personal livelihoods, enabling viable health and education opportunities, and meeting wider societal requirements of both the built and natural environments on which people depend.

Importantly, ***recovery is increasingly recognised as an opportunity to reduce previously existing conditions of vulnerability, or as stated more simply to "Build Back Better"***[1] Typically, levels of commitment, human emotions, the availability of financial resources and the number of people directly involved during extended recovery periods generally tapers down when compared to the immediate aftermath of a disaster when there is overwhelming concentration on emergency response and relief assistance. However, there is a continuing need for these factors during the often stressful periods of reconstruction and recovery, too.

The World Bank[2] has also recognised that each recovery program is unique in terms of its needs and emphasis, as well as in providing the opportunity for learning valuable

1 Bill Clinton, UN Secretary-General's Special Envoy for Tsunami Recovery, 20 December 2006
2 World Bank Global Facility for Disaster Reduction and Recovery, " Safer Homes"

lessons. However the extent to which both international institutions and national policies are able to benefit from prior experience and to modify future recovery practice is a continuing challenge for disaster and risk management authorities.

ADPC's Program Contributions to Reconstruction and Recovery

The primary focus of ADPC is to support countries in the region to set up systems, build capacity and manage information that can contribute to reducing disaster risks. In most situations this support is motivated by anticipation and more readily addressed before disasters occur. However, more recently, affected countries have often requested ADPC to support the process of risk reduction during the reconstruction and recovery phases. This support is provided primarily around the following aspects.

The first element of ADPC support is to maximise the opportunities provided by the reconstruction and recovery processes after major disasters to provide technical guidance for integrating elements of disaster risk reduction in the ensuing activities. This is the underlying rationale of efforts to "Build Back Better". The second aspect is the role that ADPC has increasingly demonstrated in the region by supporting country's efforts to strengthen their own systems for assessing disaster impacts and resulting damage loss and needs assessments on their overall national economy. This offers dual benefits for the countries in providing a basis for defining their needs in reconstruction and recovery, while also providing an important evidence-based rationale for safer development. The following paragraphs describe the involvement of ADPC in these two broad aspects of post disaster recovery and reconstruction.

Supporting the Concept to "Build Back Better"

Governments and development partners in the region often look for technical inputs from ADPC to ensure disaster risk reduction is incorporated in the decision-making process of post-disaster reconstruction and recovery. Examples include support provided to the Government of Gujarat in establishing an institutional system for disaster management after the 2001 Gujarat Earthquake, technical support extended to the national governments of Sri Lanka and Pakistan in developing and implementing recovery and reconstruction programs after the 2004 Indian Ocean Tsunami and the 2005 Himalayan earthquake, respectively.

Similarly, after the 2004 Indian Ocean Tsunami, ADPC worked together with the Royal Thai Government and with support provided by the Italian Ministry of Environment and Territory to undertake coastal risk analysis of tsunamis. This effort was conducted through ADPC's program initiative on Coastal Risk Analysis of Tsunamis and Environmental Remediation which used the assessments to develop technical guidelines for safer planning and the construction of buildings.

Strengthening Systems for Disaster Damage Loss and Needs Assessments

ADPC's involvement in supporting countries' efforts to develop their own systems for conducting post-disaster damage, loss and needs assessment dates back to 2001. Then ADPC joined a joint assessment mission of the World Bank and the Asian Development Bank following the Gujarat Earthquake. Later, recognising the importance of having a nationally owned and internationally accepted scientific methodology and the necessary technical capacities required, in 2004 ADPC contributed its support to the Government of Gujarat to develop a sector-specific methodology for undertaking damage and loss assessments. To accomplish this ADPC partnered with the United

Nations Economic Commission for Latin America and the Caribbean (UNECLAC), the Indian Institute of Technology in Bombay, and the Centre for Environmental Planning and Technology from India. The joint exercise used the ECLAC methodology for assessing damage and losses and by proposing a suitable framework enabled Gujarat authorities to develop necessary tools for their own specific conditions. These included purpose-designed assessment formats and training packages related to conducting future damage and loss assessments for eventual disaster events that could occur in the state.

The use of this ECLAC methodology increased in the Asian region with its application following the 2004 Indian Ocean Tsunami. Then it was adopted by India, Indonesia, Maldives and Sri Lanka in enabling and guiding another joint assessment together with United Nations agencies and the multilateral development banks. *The devastating social and economic impacts of the tsunami actually intensified the need for a rigorous country-specific methodology and underlined the requirements of in-country technical capacities for undertaking such assessments. To address this need, ADPC presented a series of orientation training activities about damage and loss assessment in Bangladesh, India, Indonesia, Sri Lanka and Thailand from 2005-2007 with support provided by the Government of the Netherlands. With additional support from the World Bank, ADPC also conducted a study, on "The Regional Analysis of Socio-economic Assessment of the December 2004 Earthquake and Indian Ocean Tsunami", to understand the comparative impacts of the Indian Ocean Tsunami on the five most affected countries, namely India, Indonesia, Maldives, Sri Lanka and Thailand.*

With the evolution of damage, loss and needs assessment practices over the years internationally, ADPC has worked to keep itself current with the technical advances, and also to benefit from its own accumulated experience. This enabled the center to assist the government of China in using the methodology after the Sichuan Earthquake of 2008. At the same time, it has promoted the benefits of these methods by including specific sessions about the methodology in its flagship training courses such as the Disaster Management Course, the Earthquake Vulnerability Reduction Course and the Flood Disaster Risk Management Course. ADPC's continued interest in the subject and the expansion of its own abilities can only be furthered by the Memorandum of Agreement it signed with the World Bank's Global Facility of Disaster Reduction and Recovery in 2009.

Most recently in 2009 after Typhoon Ketsana struck much of Southeast Asia, ADPC supported the World Bank country offices in Cambodia and Lao PDR in preparations for the of the post-event damage and loss assessment by conducting orientation training for the assessment teams. It also joined the government-led assessment teams in both countries. *This initiative in Lao PDR is being taken forward by ADPC with World Bank and GFDRR support by providing technical support to the Laotian Ministry of Planning and Investment for developing a national methodology for post-disaster damage, loss and needs assessment. The initiative is being implemented from 2010-2012 and it is expected to produce a capable and well-suited methodology owned by the government and specific tools for implementation such as a handbook for conducting assessments. The effort is further supported by capacity building programs designed to benefit government officials at national and provincial levels.*

Technical Assistance for Integrating DRR in Recovery Planning

When tropical cyclone Nargis struck Myanmar in May 2008, it was immediately characterised as the country's worst natural disaster event in living memory. *In order to coordinate the disaster response and recovery efforts, a "Tripartite Core Group" was composed of the Government of Myanmar, the ASEAN Secretariat and the United Nations. ADPC provided technical assistance to ASEAN by deploying three of its staff and specifically contributed to the preparation of the disaster risk reduction sector plan. This was one of eight sector-specific elements of the Nargis Recovery and Preparedness Plan for the affected areas.* ADPC worked closely with the Tripartite Core Group members to organise advocacy and technical workshops which encouraged the inclusion of DRR views and practices into the overall recovery plans.

In order to promote a wider and multiple hazard approach for reducing disaster risks in Myanmar, ADPC provided additional technical assistance to the Myanmar government for its efforts in developing a national action plan on DRR for the entire country until 2015. With support provided by the United Kingdom's Department for International Development, and the Norwegian Ministry of Foreign Affairs this advance in national planning was able to be rooted within the immediate sector components of the Cyclone Nargis Recovery Program.

Enhancing the Abilities of Disaster Recovery Practitioners

Considering the complexity and multiple demands that need to be addressed in the reconstruction and recovery following a disaster, there is a continuing need for professional guidance, and various methodological tools for planning, programming and implementing recovery activities. *In order to address this need, under its Tsunami Global Lessons Learned Program ADPC is developing a "toolkit" for government officials, representatives of UN agencies and NGOs likely to be involved in reconstruction and recovery activities. The toolkit would comprise of three components namely; handbook for recover practitioners, set of technical notes on integrating DRR in recovery programs and a comprehensive training course on designing and implementing sustainable reconstruction and recovery. Based on the lessons learned and first hand experiences from the region on managing complex recovery programs, the toolkit would specifically aim at providing practical guidance on formulating reconstruction and recovery policy, undertaking coordination, managing human and financial resources and facilitating flow of information during recovery process.*

The Way Forward

As more countries proceed to associate the consequences of climate change and seasonal variations with the possibility of more severe hydro-meteorological events, governments will be compelled to concentrate various agency responsibilities on future disaster reconstruction and recovery requirements. As recent disaster events have demonstrated, there will be a growing need for methodological tools and abilities, technical services, and compiled experience including institutional capacity development to anticipate and manage disaster reconstruction and recovery programs. In order to cater to this growing need, ADPC is expanding its own attention and technical abilities to address some of these emerging requirements and the competencies they will demand.

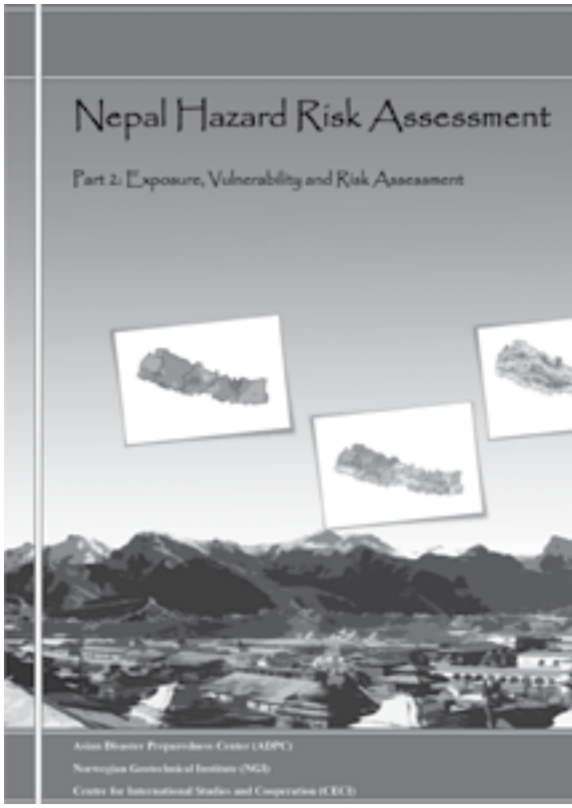
The Center has proposed the creation of an ADPC Disaster Recovery Advisory Group comprising agencies and experts involved in previous disaster recovery programs who can provide technical assistance and share experiences to both plan for and meet current needs of affected countries. Damage, loss and need assessments are a critical starting point to expand the range of collaborating partners, but they also signal the need for wider engagement and downscaling of technical abilities. They will also require more involvement from cross-sector professional interests, seeking their sustained commitment even during non-threatening times through innovative and mutually beneficial methods of engagement.

While the importance of reconstruction and recovery capabilities have grown from disaster management systems, it has become clear that future needs and required technical skills will be found in additional professional fields of practice. ADPC has a keen interest to convene these shared opportunities and to provide or otherwise arrange the technical expertise required by governments and practitioners to enable them all to "Build Back Better" following disasters.

4.9 Disaster Risk Assessment

Risk Assessment: A Crucial Requirement for Disaster Risk Reduction

Disaster risk assessment is an essential element of the overall realm of Disaster Risk Reduction that methodically draws on various professional abilities in social, engineering, financial and development disciplines to profile existing conditions of disaster risks. It typically involves technical specialists as well as numerous official and public actors who are either exposed to or otherwise are responsible for addressing potential disaster risks. While it is data-driven and depends on shared information of many types, it also requires extended dialogue and debate within a wide constituency of interests. Disaster risk assessment is an extension of the more general practice of risk analysis expressed in a manner to give emphasis to the specific issue of disaster risks. It must also ensure widespread public consideration of the risks posed to a designated community, population group or specific location



In practice, disaster risk assessment can be defined in several contexts and different situations, but the prevailing professional definition of it is *"a methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend".*[1] It is the first step and an essential diagnostic tool for engaging in systematic disaster risk management which aims to avoid, lessen or transfer the adverse effects of hazards through activities and measures for prevention, mitigation and preparedness.

Initiatives in Risk Assessment and Management

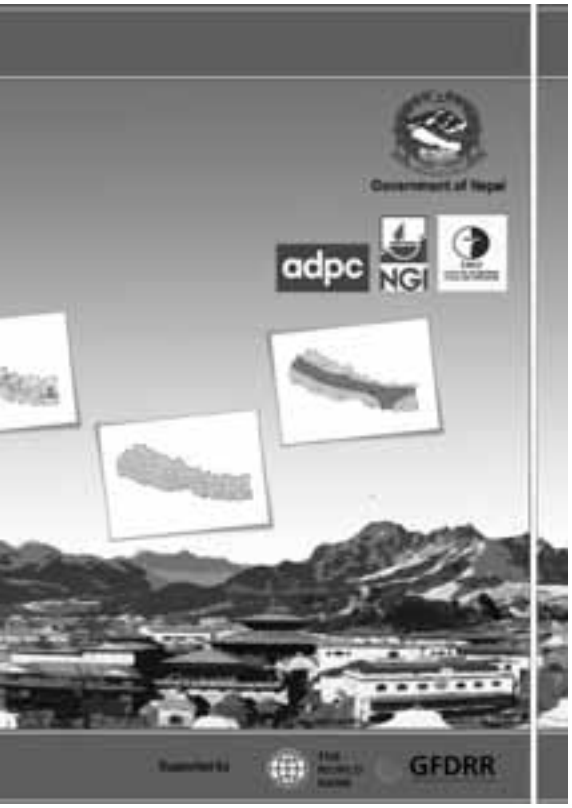
Historically unexpected or poorly understood events were attributed to chance or external forces beyond one's own ability to alter. However through the development of science and empirical knowledge people's exposure to risk is better understood today. There is now the opportunity that public and individual choices can be made more rationally and based less on tradition or long-held beliefs. The notion of risk has become associated with probability, uncertainty, occurrence or recurrence of events,

1 UNISDR Terminology, 2009. *http://www.preventionweb.net/english/professional/terminology/v.php?id=504*

the consequences of those events, and most importantly, the human choices that are involved.

Realising recurrent losses from an increasing number of disasters, national and international disaster management officials now are being compelled to think for the longer term. Within the past 20 years there have been calculated efforts to embark on strategic plans for reducing the potential impacts of disasters on their ever-changing societies. The global initiative declared by the UN General Assembly in 1989 as the International Decade for Natural Disaster Reduction sparked a beginning collective effort to build a "Culture of Prevention" within individual countries from 1990-1999. A United Nations World Conference on Natural Disaster Reduction was organised in Yokohama, Japan in 1994 to raise the visibility of the subject, expressed primarily in terms of technical possibilities once national authorities were sufficiently seized of the relevance to their countries' own needs.

The first target for accomplishment of IDNDR was that by the year 2000, all countries, as part of their plan to achieve sustainable development, should have in place "… comprehensive national assessments of risks from natural hazards, with these assessments taken into account in development plans".[2] The first principle of the ***Yokohama Strategy and Plan of Action for a Safer World*** also was that "risk assessment is a required step for the adoption of adequate and successful disaster reduction policies and measures".[3] Although substantive gains in this respect around the world were modest, some countries in Asia such as Japan, the People's Republic of China and Viet Nam were early proponents of adopting national strategies of disaster reduction based on systematic risk assessments. Until later years, partial or occasional initiatives were more often limited to hazard assessments only, and the social and economic conditions of vulnerability were more generally assumed or relegated to development activities.

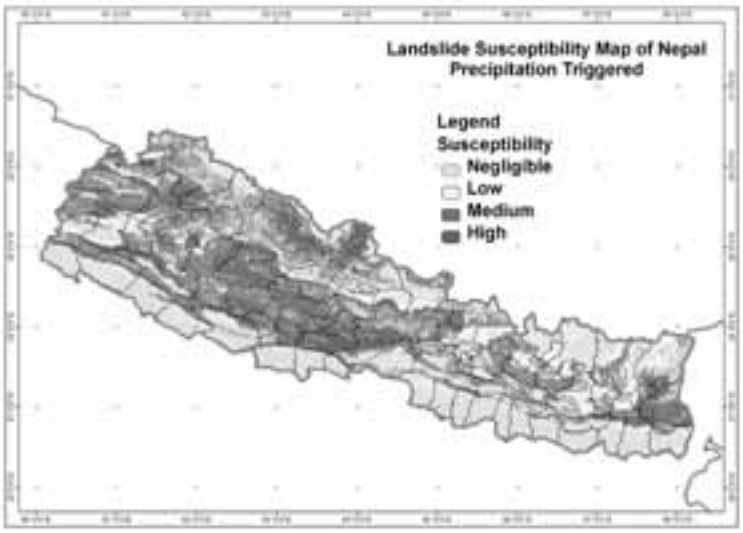


The ***Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters***[4] adopted by 168 countries at the World Conference on Disaster Reduction in Kobe, Japan in February 2005 has provided additional impetus to risk assessments as its second priority for action is to "identify, assess and monitor disaster risks and enhance early warning".

Current Risk Assessment Practice

The field of risk assessment and its related functional practices are diversified although in line with greater analysis being applied to development overall. Major streams of engineering, social and behavioral sciences, industrial development, economic and financial investment, environmental management and health sciences are all using risk

2 Insert source from IDNDR documentation



assessment methods to some degree even as the specific procedures may vary. As with other development fields, contingency planning generally, and disaster risk management more specifically, need to relate to several disciplines including sociology, engineering, environmental management, climate and weather sciences, information, data and communication systems and economics. Increasingly modeling and other advanced technologies such as remote sensing are important contributing tools being used for the combined identification, analysis and synthesis that lies at the center of all hazard and vulnerability assessment processes.

One of the recommendations of the 2009 United Nations' Global Assessment Report on Disaster Reduction is to "promote greater synergy in hazard monitoring and risk identification, leading to comprehensive multi-hazard risk assessment, through the functional integration of the scientific and technical bodies responsible for meteorology, geology and geophysics, oceanography and environmental management, etc."[5] This recognition demonstrates how central and strategic risk assessment and its management has become to defining and prioritising mitigation strategies.

The most basic understanding of the concept illustrates how crucial it is that well conceived approaches to risk assessment must include a wide involvement of various professional disciplines and different public perspectives, if the process is to be considered truly valid. The wider level of participation also requires shared data, more communication and implicit dialogue that combine to create better understanding and more judicious decisions for the wider interests of the people concerned. By contrast, if only engineering considerations are taken into account, or if only a strictly low-cost benefit valuation is accepted, then any analysis of more encompassing social, environmental or wider collective benefits certainly will be compromised.

Any serious and responsible approach to disaster risk assessment requires comprehensive analysis drawn from widely spread participation, with multiple points of view invited and considered – not least with the populations and social communities most immediately affected. Seldom do operational managers appreciate how time-consuming, but also how critical risk assessments are, if they are to guide disaster management and related development endeavors.

ADPC's Risk Assessment Initiatives

ADPC has developed and implemented risk assessment projects related to various hazards in different fields ranging from national to local community contexts, and which are applicable to both rural and urban areas alike. ADPC began its involvement in risk assessment in 2002 when it commenced related activities as part of the Asian Urban Disaster Management Program (AUDMP). Some of ADPC's subsequent activities in risk assessment which have been concentrated in South and Southeast Asia are outlined here.

3 *http://www.reliefweb.int/ocha_ol/programs/idndr/yokohama/princi.html*
4 *http://www.preventionweb.net/english/professional/publications/v.php?id=1037&pid:22&pif:3*
5 Global Assessment Report on Disaster Risk Reduction: Summary and recommendations, UNISDR, (2009). P.6. *http://www.preventionweb.net/files/9414_GARsummary.pdf*

Urban and Rural Risk Assessments

ADPC has implemented urban-related risk assessment projects within AUDMP since 2002; for the Program for Hydro-Meteorological Disaster Mitigation in Secondary Cities in Asia (PROMISE) in 2005; in the Comprehensive Disaster Management Program (CDMP) from 2007-2009; in its project for Strengthening Household Abilities for Responding to Development Opportunities (SHOUHARDO) from 2004-2009; in a joint UNDP project in the Chittagong Hill Tracts from 2009-2010; and within the DIPECHO-sponsored activities in Bangladesh from 2009-2010 and most recently following the Myanmar earthquake risk assessment from 2010.

AUDMP was one of the important DRM initiatives to include urban risk assessments in its planning process and projects in Asia, especially as the program applied the practice to several types of disaster hazards. There have been other DRM programs in Asia too, although earlier efforts tended to focus primarily on seismic risks through such projects as those undertaken by the Japanese sponsored Risk Assessment Tools for Diagnosis of Urban Areas against Seismic Disasters (RADIUS) program pursued during the final years of the IDNDR, and activities of the NGOs GeoHazards International and the Earthquake Megacities Initiative.

The AUDMP program was implemented in a total of ten cities where different hazards were considered. Activities were implemented in Bangladesh (earthquakes), Cambodia (floods), India (earthquakes and technological hazards), Indonesia (earthquakes), Lao PDR (urban fires), Nepal (earthquakes), Thailand (floods), Philippines (floods and other multiple hazards), Sri Lanka (multiple hazards) and Viet Nam (floods and typhoons).

The Program for Hydro-Meteorological Disaster Mitigation in Secondary Cities in Asia (PROMISE) implemented risk assessment activities from 2005 in secondary cities of six South and Southeast Asian countries, specifically in Hyderabad, Pakistan; Kalutara and Matara, Sri Lanka; Chittagong and Jamalpur, Bangladesh; Danang, Viet Nam; Dagupan, Philippines; plus the capital city of Jakarta in Indonesia. The project developed disaster risk reduction programs based on community based disaster risk assessments in these urban locations, with the added objective of sharing the various experiences and management practices among the participating cities. This process contributed to a wider sense of involvement and extended the benefits to build a stronger risk assessment practice in the countries concerned.

Technical support to the Comprehensive Disaster Management Program (CDMP) of Bangladesh was one of the flagship programs of ADPC which displayed the Center's early capacities in scientific and engineering-based risk assessment from 2007-2009. The project provided unique opportunities to collaborate with leading technical institutions, universities, agencies and organisations. These included the Bangladesh University of Engineering and Technology, Chittagong University of Engineering and Technology also in Bangladesh, the Asian Institute of Technology in Thailand, OYO International in Japan, the National Society for Earthquake Technology in Nepal and several national and local government agencies.

The program was implemented in the three largest cities of Bangladesh, the capital Dhaka, Chittagong and Sylhet where it assessed earthquake hazards, related vulnerability, and risk for these cities and finally developed comprehensive contingency plans with respect to the risk. The program further extended its activities by involving city authorities, school children, religious leaders and local communities and informed them about seismic risks and mitigation possibilities. A similar comprehensive approach was adopted for the UNDP project in the more remote Chittagong Hill Tracts provincial cities of Rangamati, Bandarban and Khagrachari in Bangladesh. The project resulted in the design of comprehensive contingency plans for the three cities

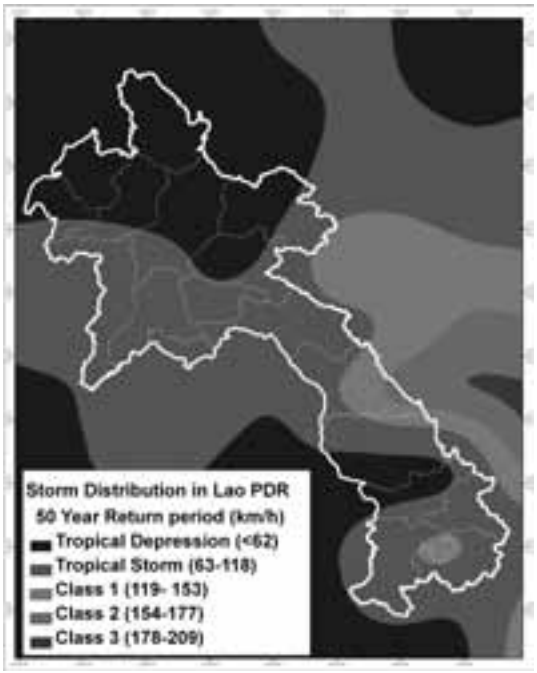
and the production of additional decision-making options that could be used by city authorities for their development planning.

Strengthening Household Abilities for Responding to Development Opportunities SHOUHARDO was another program that worked from 2004-2009 to reduce transitory and chronic food insecurity conditions of 400,000 vulnerable households in 18 districts of Bangladesh. ADPC provided technical support to CARE Bangladesh for use with targeted urban communities and institutions in Jamalpur and Chittagong to prepare them better for floods and cyclones. The project introduced urban community-based risk assessments as a means to improve local mitigation and response possibilities for facing these future hazards.

Under the DIPECHO program also in Bangladesh, ADPC provided technical support to the NGOs, Plan International and Islamic Relief, for child-centered disaster risk reduction activities in several urban and rural areas across the country. In this program urban disaster risk management plans were based on community and sector-specific risk assessments, which extended to the development of school safety plans.

Even as many Asian countries are prone to earthquakes, there are some where only limited scientific study has identified priority areas for zoning. ADPC was invited to initiate this work in Myanmar for seismic risk assessment following its involvement in the recovery activities following Cyclone Nargis. The project started in 2010 and aims to identify seismic sources, determine fault characteristics, and then translate this technical understanding into a vulnerability assessment of existing housing and other types of physical infrastructure. This information will then be used to complete the overall risk assessment that will contribute to the later preparation of contingency plans for specific cities.

Other rural participatory risk assessments were pursued by ADPC in several South and Southeast Asian countries. ADPC provided technical support for a rural flood risk mapping project in Assam, India and other similar activities were conducted in Mekong River communities in Cambodia, Lao PDR, and Thailand. One specific example in Cambodia included undertaking flood risk assessments in the four provinces of Prey Veng, Svay Rieng, Takeo and Kandal. In this case specific social vulnerability indicators such as the percentage of women-headed households in a commune, poverty index data, measures of rice dependency, among others were used in conducting the risk assessment. Rural participatory risk assessment processes also have been introduced into Bangladesh disaster risk reduction programs. ADPC's efforts in this role of building capacities in risk assessment is proceeding through a growing number of government and non-governmental partner agencies.



National Disaster Risk Assessments

In view of expanding disaster risks in many Asian countries, there is a growing need for countries to profile hazards and the associated exposure, vulnerability and risks to their populations. *ADPC has conducted national-level risk assessment undertakings in Nepal and Lao PDR. The former case was supported by the World Bank and implemented in partnership with the Ministry of Home Affairs. It included the development of a synthesis report of the country's major hazards by carrying out a desk review of past studies, identified population and physical assets that are exposed to the hazards for various sectors, developed a detailed economic analysis using loss probability modeling of the risks with projected economic losses from those forecasted hazards, and then mapped the high-risk geographic regions. The risk assessment considered the five major hazards of earthquakes, floods, drought,*

landslides and epidemics. National risk profiling of Lao PDR is another example in which a national-scale risk assessment contributed to the identification of multiple hazard locations, affected communities, vulnerability and an overall risk profile considering different sectors.

Pre-disaster Hazard Loss Estimation

An innovative effort is being made under the ongoing Regional Program for Pre-disaster Natural Hazard Loss Estimation to link disaster risk assessment and economic modeling techniques. In this context the consequences of a disaster event are expressed in two aspects, damages and loss. With the methodology proposed under the program, medium and long-term economic impacts of a disaster event can be estimated prior to its occurrence, which is crucial for making proper risk-sensitive developmental planning.

Through the comprehensive training package being developed under this initiative, capacity of disaster management professionals, specialists in national planning departments/ministries, and sector-based development planning specialists from target countries such as Bangladesh, China, Viet Nam, India, Indonesia, Nepal, Pakistan, Philippines, and Sri Lanka will be developed.

Future Prospects for Risk Assessments

In view of earlier discussions on past and current risk assessment projects and practices, there is a continuing need for more comprehensive disaster risk assessment. This requires multi-disciplinary and multiple stakeholder approaches. The following recommendations can advance commitments to meet the changing needs in Asian countries:

- Systematic and sustained risk assessment processes need to be designed according to the geographical scale (for example, local, sub-national, or national scale) of the study area for appropriate integration into DRM policies.
- Risk assessment should be a basis for economic and social impact analyses leading to risk mitigation actions and risk transfer mechanisms for the at-risk regions.
- Risk assessment strategies need to be derived from both comprehensive hazard and vulnerability analyses, be based on solid scientific and technical grounds, and be supported by verifiable data.
- Continuous efforts to build capacity and to maintain the adequacy and accuracy of documentation are essential requirements for a viable risk assessment strategy.

4.10 Technological Hazard Risk Management

Technological Accidents and Initiatives

Accidents resulting in serious environmental damage or leading to large scale fatalities from chemical processes, storage, handling or transportation periodically happen and remain a serious and often under-estimated matter of public risk. Internationally, the Bhopal poisonous gas (methyl isocyanate) disaster in a pesticide plant in India in 1984 was only one of the most iconic examples of serious technological disasters. There have been many other major industrial or technological accidents in the world such as the boiling liquid expanding vapor explosion (BLEVE) in Flixborough in the United Kingdom (1974), the iconic chemical (dioxin a carcinogenic substance) spill in Seveso, Italy (1976), the liquefied petroleum gas terminal explosion in Mexico (1984), the nuclear accident and release of radiation in Chernobyl (1985) and the accident in Basel, Switzerland (1986) where a fire in Sandoz warehouse led to the pollution of the Rhine river from the fire fighting water carrying large amount of various hazardous chemicals. Each of these involved release of hazardous chemicals or release of toxic gases in industrial undertakings or during transportation in populated areas. These and similar accidents have brought the need for major technological hazard control into sharp focus as a public concern.

Other examples can be cited from several countries in Asia. There have been explosions in refineries and petrochemical plants in Mumbai (1989), Vishakapatnam (1997) and Raigad (1991) in India, and industrial fires in toy factories in southern China (1995 and 1998). These are only a few reminders of the continuing potential risks, with the added concern that toxic, flammable and carcinogenic chemicals are involved in many industrial processes, so they certainly create threats which must be managed so as to ensure safety in reducing people's exposure and protecting their lives and property. The adjacent box provides some examples in Thailand

There were several examples in the past in Thailand alone, which include a large fire in Bangkok's Central port area were thousands of people were exposed to toxic chemicals (1991), and explosion of an overturned liquefied petroleum gas truck in downtown Bangkok (1991) and a chemical explosion in a fruit drying factory in Chang Mai (1999) and a truck accident in Bangkok releasing toxic chemicals (2001).

Other technological disasters include building collapse due to structural failure were the Sampoong Department Store collapsed in Korea (1995) due to structural failure attributed to improper management of change in the structural features of the building that claims hundreds of lives and injuries and in 2010, at least 60 people were killed and more than 60 injured after a five-storey residential building collapsed in the Indian capital, New Delhi, due to weak structural design.

Worldwide because of the resulting public perceptions of such technological risks, these accidents have changed the way industries have done their business, increased the demands for more stringent regulation of production processes, corporate preparedness measures and safer transportation procedures bringing the need of enhancedpreparedness and response capabilities to the fore. These events acted as a catalyst for several global initiatives including the International Labor Organization's Major Accident Hazard Control, the United Nations Environment Programme's Awareness and Preparedness for Emergencies at Local Level (APELL), the International Council of Chemical Associations' Responsible Care Program, and the Joint UN Agency International Programme on Chemical Safety. A recent initiative of UNEP is the Flexible Framework that guides countries through their Chemical Accident Prevention and Preparedness (CAPP) Programme.

ADPC's Involvement in Technological Hazards Risk Management: APELL and CAPP

The area of technological hazards risk management is one of the more recent thematic themes in ADPC's action, though some of the activities in which it has been involved date back to the early and mid-1990s. Since the inception of UNEP's global *Program on Awareness and Preparedness for Emergencies at Local Level (APELL)* in 1986, ADPC has closely following the development of the program and been involved in specific aspects of it in Asia. From 1992-1996 the center has actively participated in the Program on Local Accident Mitigation and Preparedness in India, Thailand and Indonesia. These activities were supported by USAID's Office of Foreign Disaster Assistance (OFDA), World Environment Center (WEC) as ADPC played an active role in linking these initiatives with the national disaster management institutions and agencies in the respective countries. *Because of the importance of the APELL program and its primary emphasis on community level involvement in emergency preparedness, ADPC's regional flagship course on Disaster Management includes a specific session on technological risk management and community-based chemical emergency preparedness.* From 1998 to 2001, ADPC also has worked closely with the implementation of APELL activities in Thailand with the Department of Industrial Works, Mahidol University, and Inter-organization Programme for the Sound Management of Chemicals. Additionally, ADPC signed a memorandum of understanding with UNEP in 2000 to serve as a regional collaborating center of APELL and it served as a member of both UNEP's Expert Working Group on APELL and its Advisory Group on Environmental Emergencies from 2001-2004.

ADPC's Asian Urban Disaster Mitigation Program (AUDMP) implemented between 1995-2004, had technological and chemical hazards as one of its focus activities in India. Specific activities in this regard were implemented in Calcutta and Vadodara cities in cooperation with the local and state governments of Gujarat and West Bengal respectively, industries and NGOs like the Baroda Citizen Council and the

Other ADPC Activities on Technological Hazard and Risk Management.

ADPC participated in the World Health Organization-International Programme on Chemical Safety (WHO/IPCS) Regional Workshop held in 1998 in Thailand on developing National Chemical Safety Action Plans in Asian Countries, and with UNEP in Asian Regional Responsible Care seminar in Singapore, in November 2000.

ADPC has been collaborated with the Swedish Rescue Services Agency Cooperation programs in areas of Hazardous Material Handling in Ports" and "Upgrading Emergency Response Services", in cooperation with the Bangkok Port Authority and the National Safety Council of Thailand.

ADPC collaborated with National Fire Protection Association (NFPA) International and Melbourne Fire and Emergency Service Board (MFESB) including an investigation of a fire in the tourist location of Jomtien, Thailand (1997), in the subject area of fire safety in high-rise buildings (1998 and 2001).

ADPC has been involved in dealing with road accidents and training on fire and chemical safety (1997) together with the American Chamber of Commerce in the Philippines, and in road accident rescue in Malaysia and Thailand (1997-1998) together with Australia's Queensland State Emergency Service with GTZ's provision of technical assistance to Thailand as well as directly with the Royal Thai Government's Department of Land Transport in developing a system for the safe transportation of hazardous substances, and with the "Global Road Safety Partnership" (GRSP) at global, regional and national levels in Thailand, together with the Asian Institute of Technology in Bangkok.

ADPC has enjoyed growing partnerships with United Nations Environment Programme (UNEP), National Fire Protection Association (NFPA), World Health Organization (WHO), Center for Chemical Process Safety (CCPS), National Safety Council India (NSCI), Asian Responsible Care Network, and ILO and with various national Ministries of Environment, Labor and departments concerned with Occupational Safety and Health. Other relationships have been cultivated through the industrial and chemical sectors, national industry associations and various local industrial estates. These latter partnerships include those with the Department of Industrial Works at Mahidol University and the Thailand Environment Institute, the Environmental Management Bureau of the Department of Environment and Natural Resources in the Philippines, the Ministry of Environment in Cambodia, and the Central Environmental Authority in Sri Lanka.

Times Research Foundation. ADPC also conducted the first regional course on Technological Risk Mitigation in Cities under AUDMP in Mumbai, India in collaboration with the Human Settlement Management Institute from New Delhi, and the National Safety Council from Mumbai. The course was held in November 1998 with 26 participants attending from eight Asian countries.

More recently, *since 2007 ADPC has been a part of the Chemical Accident Prevention and Preparedness (CAPP) expert working group of UNEP, working specifically with the development of its "Flexible Framework" for the subject. ADPC has also worked closely with UNEP since 2008 to support selected countries in Southeast Asia like Cambodia and the Philippines in establishing their national systems for chemical accident prevention and preparedness*. The initiative worked closely with the national government agencies involved led by the Ministries of Environment preparing a national situation report. After limitations had been identified within existing procedures and institutional arrangements, assistance was provided to develop a plan to implement priority actions. This initiative continues with specific activities to build needed capacities for implementing the designated priorities in both countries. The program is currently being extended during 2011 into Sri Lanka, where an initial activity to raise awareness on CAPP and APELL is being pursued.

ADPC's Way Forward

ADPC will continue to assist its member countries as a technical resource in the area of technological hazards risk management by building on its existing partnerships at national, regional and global levels. These will be pursued strategically through the deliberate and informed marketing, the promotion of combined institutional partnerships and by continued involvement in joint policy developments. With the acquisition of new institutional abilities, ADPC will be even better placed to convene various interests in order to build the commonly valued interests and abilities of governments, industries, and locally vulnerable communities to address the growing technological risks of the future.

ADPC's previous experience and existing partnerships in technological hazard risk management provide a firm basis for greater and wider activities in the region. The following characteristics will continue to mark ADPC's emphasis in its further expansion in this thematic area:

- Raising awareness and building institutional capacities
- Strengthening partnerships and multi-stakeholder cooperation
- Providing support for countries in developing systems for chemical accident prevention and preparedness
- Advancing the involvement of communities and local level engagement in preparedness activities

5. Towards Future

Inspired by the work it has done over the last 25 years in Asia-Pacific Region and alerted by the need of the region, ADPC has embarked on the process of developing its strategy for the next decade. Mindful of the multiple and complex challenges confronting the Asia Pacific Region in disaster risk reduction including increase in disaster and related losses, growing risk in urban areas, increasing exposure of rural livelihoods to weather and climate related hazards, altering hazard patterns with the Global Climate Change, mismatch between the need and the available financial resources and lastly embedding a mindset for safer development through disaster risk reduction, the **ADPC Strategy 2020** would build upon the organisation's successes and, provide strengthened and focused support on disaster risk reduction to countries and partners in the region. These supports would need to be of high quality, practical, situation specific technical solutions, inclusive and based on established comparative advantage of ADPC.

The **ADPC Strategy 2020 would set clear thematic areas of focus demonstrating its responsiveness to the changing priorities of the Region and these areas will guide and determine ADPC engagement with all of its partners, over the next ten years**. These thematic areas of focus would include the following:

Disaster Risk Management Systems: Effective and robust disaster risk management systems and related arrangements require the inputs of an extensive variety of actors at all levels from national, provincial, district and local and at the same time having in place plans, policies, regulations and capacities on risk reduction. Long-term engagement of ADPC in this area to support countries in setting up institutions, formulate legislations and building capacity has helped ADPC in identifying future directions for the next decade and which would include devising new and effective means to relate climate change adaptation and disaster

risk reduction, continuing strengthening DRM/DRR institutional system at national and sub-national levels, supporting countries in implementing comprehensive DRR national programs and ensuring marginalised groups, environmental issues and natural resource management are key considerations of risk reduction agendas.

Urban Disaster Risk Management: With disaster impacts in urban settings felt more intensely than in the past and the scale of devastation only expected to increase, the thematic focus of ADPC for the next decade on urban disaster risk reduction would build on its matured work in the area for the last 15 years. Specific actions would be around awareness and political will for urban risk reduction, cost effective methodologies and tools for risk assessment in urban areas, demonstrating effective solutions, advocating for participatory governance mechanism for DRR and developing short and long-term strategies for risk reduction at city level.

Climate Variability and Change/Climate Risk Management: With the well documented evidence of global-warming induced climate change, the necessity to adapt to climate change has been magnified and placed at the front of most peoples minds as a result. With 25 years of proven experience in delivering services in DRR and 15 years in delivering services in Climate Risk Management, the future focus of ADPC's on this thematic area for the next decade would include developing decision support tools for climate change adaptation, downscaling of future climate projections, assessing impacts of climate change on climate-sensitive sectors and developing specific measures for adaptation, improving capacity and strengthening for, responding to and preparing for climate-related hazards and managing climate risk.

Community-Based Disaster Risk Reduction: With local communities being the first to experience the effects of disasters as well as their importance in identifying, planning, implementing and evaluating local level risk reduction measures, CBDRM has been a core focus of ADPC's work since inception and an approach adopted in its programs and training courses. Building on this experience, the focus for ADPC in the next decade would be supporting countries develop and implement national programs on CBDRR and thus realise the Manila RCC 8 Statement, strengthening linkages with community-based adaptation, continuing improvement of tools to address emerging issues and fostering networks at national and regional levels of CBDRR practitioners.

Public Health in Emergencies/Health Risk Management: There are many unpredictable health-related issues that make the management and response of disasters challenging within both official and public domains of activity. With epidemics, conflict and frequent natural disasters straining the region's already limited resources and forcing people further into poor health and poverty, the focus of ADPC in Public Health in Emergencies for next decade would include addressing health considerations of climate change, scaling up capacity building programs for health workforce in order to manage emergencies more efficiently and lastly, addressing new, emerging health in emergency issues.

Geological Hazard Risk Management: Having innovative comprehensive solutions for the wide spectrum for geological hazards common to the Region would continue to be a focus area of ADPC and this would be based on its long two decades of work in areas such as earthquake risk reduction, landslide risk reduction etc. The focus of future actions would be around undertaking hazard specific risk

assessments, developing methodologies and frameworks for analysis of geological risk factors and use of advanced satellite technology for risk assessment practice.

End-to-End Early Multi-hazard Early Warning System: Effective end-to-end early warning system are essential for saving lives, protecting livelihoods and preserving national development gains. ADPC's focus in this area for the coming decade is based on the increasing need and growing interest within the region for effective multi-hazard end-to-end early warning systems and would include efforts at institutionalising end-to-end early warning systems for effective dissemination of hydro-meteorological hazard information and warnings, linking institutions, their collaborators and intended users in their shared interests of raising awareness

about early warnings, enhancing the capacities and providing technical support to hydro-meteorological services for improved prediction of hydro-meteorological hazards and events and build capacity of national focal points for developing and dissemination of early warning for short, medium and long term hydro-meteorological hazards.

Mainstreaming Disaster Risk Reduction into Development: With development and the achievement of the Millennium Development Goals (MDGs) being limited by disasters, mainstreaming DRR into development planning and sectoral policies such as poverty alleviation, education, health, infrastructure, natural resource management and others, and reflecting it in development regulation, codes and standards becomes essential. The half a decade work of the RCC Program on Mainstreaming Disaster Risk Reduction into Development would focus in the coming decade on accelerating integration of DRR in development policy and plans, integrating in development practice across sectors and building

capacity, sharing knowledge and undertaking advocacy for political support for safer development.

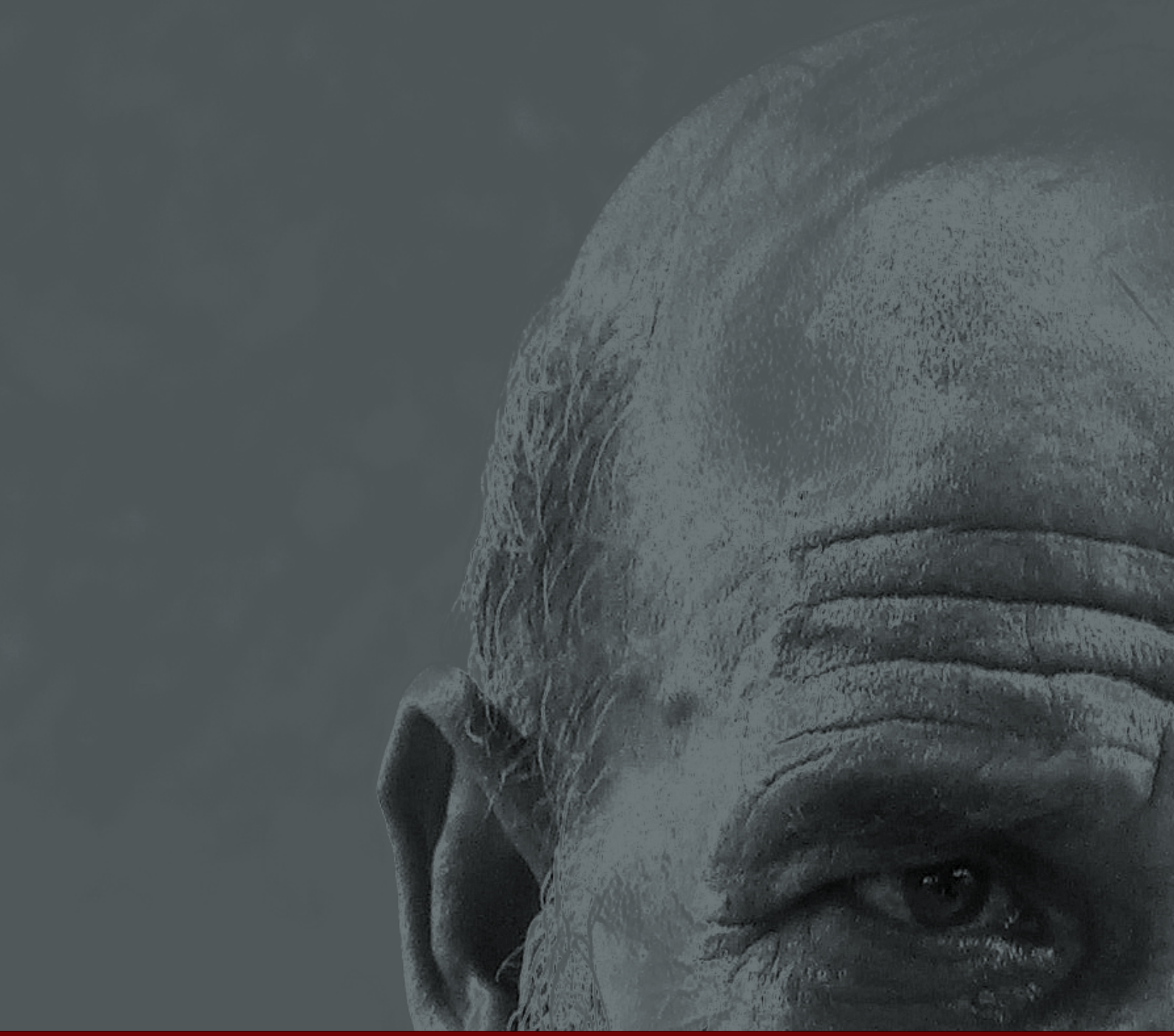
Post-disaster Reconstruction and Recovery: In order to support the countries to address complex challenges during post-disaster reconstruction and recovery, ADPC would focus its action under this thematic area on supporting countries in developing country specific methodologies, tools and capacity building programs for undertaking post-disaster damage, loss and needs assessments, providing guidance to countries in integrating DRR in the recovery and reconstruction process and maintaining a network of senior level government officials from the region who have experience in managing large-scale disasters and whose expertise could be made available to countries that could benefit from their assistance and support.

Risk Assessment: Making use of the development and advances in science and empirical knowledge on undertaking comprehensive risk assessment, as well as of ADPC's involvement in undertaking risk assessment at various scale from national to local, this focus area would only expand in the coming decade to look into supporting countries to undertake robust risk assessments, strengthening methodologies which incorporate scientific data, advocating for national disaster risk reduction policies and actions being based on systematic risk assessments, supporting efforts to apply economic assessments for both disaster losses and future project returns through cost-benefit analysis and using other econometric skills.

Technological Hazard Risk Management: With a focus on all hazards for disaster risk reduction and, capacity, skills, experience and technical programs that encompass a wide diversity of applications, under the ADPC Strategy 2020 the intention is to intensify efforts in supporting member countries manage technological risks. Specific interventions would be around capacity building, strengthening partnerships and supporting development of national systems for chemical accident prevention and preparedness and ensuring its linkages with national systems for natural disaster risk reduction.

With the close inter-linkages between these thematic areas, the ADPC Strategy 2020 would identify key cross-cutting actions that would be essential imperatives for implementing actions around the theme. These cross-cutting imperatives would include enhancing skills and capacities on DRR, sharing knowledge and innovative practices, communicating DRR information, effective advocacy and ensuring the safety and improved well-being of various social groups that are often most affected by disasters.

Finally the ADPC Strategy 2020 would provide directions on the implementation mechanisms of the identified support and which would be based on its solid reputation in delivering specific services such as regional programs, technical support, capacity building and knowledge management. This will demonstrate ADPC's continuing willingness, flexibility and innovativeness to act as a technical partner supporting the delivery of quality integrated applied technical solutions and services on DRR and CCA to countries of the Asia Pacific Region.



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