

Program Completion Report

# Asian Urban Disaster Mitigation Program (AUDMP)

Cooperative Grant Agreement:  
DFD-A00-03-00077-00

Period Covered 1 January 2004 - 31 July 2005

Lessons Learned in Program  
Implementation and Future Directions

Program Completion Report



supported by:



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Asian Disaster Preparedness Center  
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## Acronyms

ADPC	Asian Disaster Preparedness Centre
AIT	Asian Institute of Technology
APEKSI	<i>Asosiasi Pemerintah Kota Seluruh Indonesia</i>
APKASI	<i>Asosiasi Pemerintah Kabupaten Seluruh Indonesia</i> / The Association of Indonesian Regency Governments
AUDMP	Asian Urban Disaster Mitigation Program
BAPPENAS	<i>Badan Perencanaan Pembangunan Nasional</i> /National development Planning Agency Indonesia
BU	Bonn University -Germany
BUDMP	Bangladesh Urban Disaster Mitigation Project
CASITA	Capacity-building in Asia using Information Technology Applications
CBDRM	Community-based Disaster Risk Management
CHPB	Center for Housing, Planning and Building
CTO	Cognizant Technical Officer
DDPM	Department of Disaster Prevention and Mitigation
DRC	Disaster Risk Communications
EMI	Earthquake Mega cities Initiative
EMRP	Emergency Management & Response Plan
ENSG	<i>Ecole Nationale Supérieure de Géologie</i> - France
EU	European Union
EVRC	Earthquake Vulnerability Reduction for Cities
FARA	Fire and Rescue Association
GIS	Geographical Information Systems
HFA	Hyogo Framework of Action
ICIMOD	International Centre for Integrated Mountain Development
IDNDR	International Decade for Natural Disaster Reduction
IDPs	Internally Displaced People
ITB	Institut Teknologi Bandung
ITC	International Institute for Geo-Information Science and Earth Observation, The Netherlands
IUDMP	Indonesian Urban Disaster Mitigation Project
LUDMP	Lao PDR Urban Disaster Mitigation Project
MDGs	Millennium Development Goals
MDMC	Municipality Disaster Management Committees
NBRO	National Building Research Organization
NDM	National Disaster Management
NDMO	National Disaster Management Office
NGI	Norwegian Geo-technical Institute
NSET	National Society for Earthquake Technology
OFDA	Office of USA Federal Disaster Assistance
RCC	Regional Consultative Committee
RHUDO	Regional housing and Urban Development Office
RIC	Resource Integration Centre
SDS	Shariatpur Development Society (SDS)
SLUMDMP	Sri Lanka Urban Multi-Hazard Disaster Mitigation Project
SNV	SNV Netherlands Development Organisation
TRP	Thai Red Cross
TSF	<i>Télécoms Sans Frontières</i> -France

TUDMP	Thailand Urban Disaster Mitigation Project
TUGI	The Urban Governance Institute
UDA	Urban Development Authority (UDA)
UDM	Urban Disaster Mitigation
UDRM	Urban Disaster Risk Management (UDRM)
UFM	Urban Flood Mitigation Course
UNDP	United Nations Development Program
UN-HABITAT	United Nations Human Settlements Programme
URI	Urban Research Institute (URI)
USAID	United States Agency for International Development
USEA	United States Energy Association
WCDR	World Conference on Disaster reduction
WSSI	World Seismic Safety initiative
YIPD/CLGI	<i>Yayasan Inovasi Pemerintahan Daerah</i> / Center for Local Government Innovation

**Asian Urban Disaster Mitigation Program (AUDMP)  
EXTENSION PHASE January 2004 - July 2005  
Lessons Learned in Program Implementation and Future Directions**

**Executive Summary**

Recurrence of multitude events of natural calamities, which threaten millions of lives and cause large-scale economic, financial, and infrastructural damage, has become a regular phenomenon in Asia. The events are responsible for high productivity losses that have seriously set back overall development goals of the region. The World Conference on Disaster Reduction (WCDR) organized by UNDP through release of Hyogo Framework of Action-HFA (2005-2015) identified disaster risk reduction as a key factor in attaining the Millennium Development Goals (MDGs). The HFA was endorsed by all participating countries of WCDR and it also recognizes the need for meeting poverty reduction priorities through reduction of vulnerability due to natural hazards.

In fast growing urban areas with increasing industrial and physical development, damage to valuable physical and social assets such as housing, schools, hospitals, government buildings, roads and bridges, factories, stocks and food storage is more significant. Factors such as rapid unplanned urban growth, exponential increase in population as a result of rural urban migration, capital investment for infrastructure facilities in hazard prone areas without a mitigation component etc are the main causes for increased damage and losses due to disasters. A large proportion of urban population continues to live in marginal lands, which are in most cases highly vulnerable to natural hazards, thus increasing the potential for high losses and damages due to future disaster events.

Since the beginning of the International Decade for Natural Disaster Reduction (IDNDR) in 1990, significant advances in disaster risk management practice have contributed to shaping up the risk management culture in Asia. USAID/DCHA/OFDA supported the Asian Urban Disaster Mitigation Program (AUDMP), which was a significant signature project that helped to change the disaster risk management paradigm within Asia in the urban context. AUDMP was implemented by ADPC with the **goal of reducing the disaster vulnerability of urban populations, infrastructure, and lifeline facilities and shelter in the Asian region**. It opened a new chapter in urban risk management not only in the ten target countries but also throughout the region. The AUDMP also initiated number of innovative disaster risk mitigation and management activities in ten countries, namely **Bangladesh, Cambodia, India, Indonesia, Laos, Nepal, the Philippines, Sri Lanka, Thailand, and Vietnam**.

Over the past decade, during the implementation of the AUDMP, ADPC observed an increased incidence of natural disasters, and a compounded increase in the socio-economic and environmental impacts due to such events. This **impact is nowhere more visible than in secondary cities, which fuel national economies**; where urbanization and economic development is rapid and vulnerabilities are high. This trend is observed in the case of frequently occurring hydro-met hazards, as well as in rare but high consequence events such as earthquakes, tsunami. This was evident from the high impacts to coastal cities due to great tsunami event in Asia in December 2004 and growing vulnerability has been reflected in terms of deaths, material losses, physical, social and economic damages to assets in coastal urban areas. It emphasizes the fact that there is a continuing need for mitigation, to minimize damage and disruption to economic activities, and for preparedness, so that an event can be dealt with swiftly and effectively

AUDMP has observed that the health hazards in target countries also have a rapidly growing tendency. In most of the cities, rural urban migration is an increasing phenomenon. Often one of the root causes of migration is the poverty associated with disaster events such as droughts, river erosion, floods and civil conflicts. These types of phenomenon, prevalent in urban areas of Asia, also create indirect impacts on public health. The recent records released in India, Bangladesh, Indonesia showed an increasing trend in cases of AIDS connected to rural urban migration. Also such indirect health hazards are observed due to poor drainage, causing vector borne diseases.

The program strategy over the 10-year period of implementation has taken a three-tiered approach. The **National Demonstration Projects** in each of the target countries serve to provide a working example of urban hazard mitigation. The **Information and Networking** component helped to build the public and private networks as a forum for exchanging information and experience on urban disaster management, with the goal of replicating successful hazard mitigation practices from the demonstration projects throughout the region. The **Training, Resource Materials, and Continuing Education** component helped to build the much-needed capacity of institutions and practitioners involved in risk mitigation interventions.

The Program activities were implemented in three phases covering natural as well as manmade hazards such as earthquakes, floods, landslides, technological risks, urban fires etc. The **Demonstration activities** in target countries helped to introduce local level initiatives for hazard and risk assessment, preparation of mitigation action plans and implementation of cost effective mitigation interventions, training and capacity building, public awareness creation.

The strategic framework adopted during the first three years of the program was to introduce the concept of mitigation as a proactive measure and convince the effectiveness of pre-disaster actions. Subsequent years were dedicated to the introduction of public and private sector mechanisms for disaster mitigation and implementation of mitigation initiatives as well as in replication of activities in other vulnerable cities. After an external evaluation of program achievements, since January 2004, the number of target countries was reduced in the **Extension Phase of the Program** to five to ensure consolidation of program interventions further to benefit other identified highly vulnerable urban centers. Most of the activities under Extension phase were tailor made to suit the recommendations of the 2<sup>nd</sup> External Evaluation mission of AUDMP and the evaluation mission findings have helped to increase the effectiveness of program activities as well as to consolidate the program achievements.

Program was initiated through demonstration activities in 8 cities in 6 countries and went onto replicating the activities in 31 secondary cities in 10 countries. It resulted in a strong **network of cities** dedicated to risk management practices within Asia.

The program was implemented in partnership with number of **local partner institutions** such as national and international NGOs, academic and training institutions, government and semi-government organizations, professional bodies etc. The program helped to build capacities of such institutions to become advocates of proactive approaches for urban risk management and helped to develop a cadre of competent practitioners who had become local champions dedicated to urban risk management practice in respective countries. As a result of the policy dialogue initiated by the program, national and local governments have started to demonstrate more commitment to urban disaster mitigation. As a result of the program ADPC established a strong network of similar institutions and practitioners, who are continuing to share

experiences and lessons learned through initiation of a regular monthly electronic newsletter and active professional discussions through electronic forums.

The Program also developed **Regional training courses**, specific to the urban context, to cover new disciplines of Urban Disaster Mitigation, Earthquake Vulnerability Reduction for Cities, Urban Flood Management, and Technological Risk Management for Cities, Risk Communication, etc. The successful practices in preparedness, mitigation and response were converted into information products, case studies etc as training material for dissemination. The program created a network of training partners in Asia and the training courses have been successfully institutionalized and piloted at national level. In early 2005, ADPC in collaboration with Georgetown University through financial assistance from Bill and Melinda Gates foundation organized a workshop for institutions involved in capacity building for Asia, which helped to develop a white paper for future directions.

**Regional and national level workshops** were organized to promote urban risk mitigation practices, advocacy, create awareness and initiate appropriate environmental policies. This resulted in the publication of a number of useful reference materials; for example: **Primer for risk management**, Manual for training masons for construction in earthquake prone areas, Proceedings of regional workshop on best practices in disaster mitigation, Handbook for housing in flood prone areas based on Bangladesh experience. The publications and other program outputs are disseminated through the ADPC website and nearly 20,000 entries have been recorded during the last year which is testament to both the popularity of the website and the validity of the information contained therein

AUDMP activities have had a positive impact throughout the region in disaster preparedness and mitigation practices and have helped to create greater awareness on applicability, sustainability and cost effectiveness of proactive mitigation actions in the long-term macro level development practice. The program helped to promote new strategies for urban disaster mitigation, introduction of hazard and risk assessment tools, cost effective innovative methodologies for vulnerability reduction and policies that address urban risk reduction at various levels.

ADPC has shown the commitment to the discipline by creating a team dedicated to Urban Disaster Risk Management (UDRM) in 2003 and launch its **Strategy 2020 for Urban Risk Management**. It helped the ADPC to increase the outreach, establish new networks and more importantly secure funding from other sources to display the sustainability. As of today the UDRM of ADPC has 4 more projects funded by EU, UNDP, Government of Norway, and SNV – Netherlands.

The Urban Disaster Risk Management (UDRM) team within ADPC has developed **collaborations** with number of International institutions and networks such as Citynet, TUGI, UN-HABITAT, Earthquake Mega cities Initiative (EMI), WSSI, ITC-Netherlands, ENSG-France, Bonn University -Germany, NGI-Norway, Georgetown university-USA, ICIMOD, USEA, TSFI-France and organized activities to promote Urban Risk Reduction during the past few years.

With AUDMP initiatives, advances were evident in 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, emergency management etc. over the past 10-year period. Urban risk reduction is also increasingly being recognized as an integral part of development process and governance rather than the traditional relief, response and rehabilitation interventions. A large number of initiatives on risk mitigation and preparedness promoted by AUDMP in target countries encompasses multitude of hazards and in approach recognizes the multi-sector, multi- stakeholder concept.

The Program is linked to a set of mutually supportive activities implemented at community, urban local government, national and regional levels that address the vulnerability reduction issues in cities and contribute toward achieving number of positive results which help to attain a culture of safety and resilience of urban communities. All intended tasks proved to be capable of replication in a wider context. Particularly in case of hydro-meteorological hazards basin-wide approach was followed so that mitigation practices in one city can be replicated widely through the basin. Similarly initiatives for some of the other hazards, such as earthquakes, primarily targeted a secondary city so that the practices can be replicated in the larger area with similar seismic activity.

Each component of the Program contributed in consolidation of program achievements through a holistic framework for institutionalization of improved private and public sector mechanisms for community preparedness and mitigation of multi-hazard disaster risk in urban areas of the target countries. The program components focused attention on indigenous practices, community empowerment as well as more innovative approaches to risk management through sustained efforts so that it can continue to contribute beyond the period of program existence. It will foster a multi-stakeholder, multi-sector, multi-disciplinary approach to disaster risk management.



**Asian Urban Disaster Mitigation Program (AUDMP)**  
**EXTENSION PHASE January 2004 - July 2005**  
**Lessons Learned in Program Implementation and Future Directions**

## **1. Program Overview**

### **1.1 Overall program strategy and objectives**

Asia is the most disaster-prone region of the world, where loss of life and property from natural hazards is very high, hindering sustainable, broad-based development. As population and economic activity concentrate in rapidly growing cities, urban areas become increasingly vulnerable to disasters. Where properly managed, however, cities also represent a critical opportunity to mitigate damage from natural hazards.

The **Asian Urban Disaster Mitigation Program (AUDMP)** was designed to respond to the need for safer cities. The ultimate goal of the program was to reduce the disaster vulnerability of urban populations, infrastructure, critical facilities, and shelter in targeted cities throughout Asia. More specifically, AUDMP aimed to: (i) establish sustainable public and private sector mechanisms for disaster mitigation that will measurably lessen loss of life, reduce the amount of physical and economic damage, and shorten the post-disaster recovery time; and (ii) promote replication and adaptation of successful mitigation measures within target countries and throughout the region.

Since its inception in 1995, AUDMP has made significant impact in reducing the disaster vulnerability of urban populations, infrastructure, critical facilities, and shelter in target cities of nine countries in Asia – Bangladesh, Cambodia, India, Indonesia, Lao PDR, Nepal, Philippines, Sri Lanka, and Thailand. In all the project countries, AUDMP has not only raised awareness of disaster mitigation among various stakeholder groups, but has also demonstrated a number of successful methodologies and approaches for implementing disaster mitigation in varied geographical, social and cultural contexts.

Working in conjunction with collaborating institutions in each target country, the program strategy takes a three-tiered approach. The **National Demonstration Projects** in each of the target countries serve to provide a working example of urban hazard mitigation. In a selected urban area in each country, a hazard or set of hazards has been assessed, followed by the design and implementation of appropriate disaster mitigation measures. The **Information and Networking** component helped to build the public and private networks as a forum for exchanging information and experience on urban disaster management, with the goal of replicating successful hazard mitigation practices from the demonstration projects throughout the region. The **Training, Resource Materials, and Continuing Education** component provided an opportunity to further institutionalize hazard mitigation practices through seminars for national-level decision makers, as well as by using an in-country and regional “train-the-trainers” approach for passing on technical skills via a core curriculum in hazard assessment and mitigation. The courses are being offered by in-country partner institutions on a regular basis to multi-stakeholder audience while ADPC continues to conduct regular annual courses in the disciplines of Urban Flood mitigation (UFM) and Earthquake Vulnerability Reduction for Cities (EVRC) courses.

### **1.1.1 Program History**

Considering the growing risk due to natural disasters and because of the compelling need of the national governments to devote considerable percentage of national resources to relief and response functions, in the last decade of the century, the United Nations initiated the International Decade of Natural Disaster Reduction (IDNDR).

While vulnerability to disasters is a large and growing problem for urban areas in Asia, local and national governments in Asia in the mid-1990s did not have short and long term strategies for mitigation of disasters' impact. Since the beginning of the IDNDR, significant advances in disaster risk management practice have contributed to shaping up the risk management culture in Asia. Given the propensity for disasters, the increase in urbanization and the vulnerability of the urban poor in Asia, the Office for Foreign Disaster Assistance (OFDA) of the United States Agency for International Development (USAID) awarded a grant in September 1995 to the Asian Disaster Preparedness Center (ADPC) to implement the Asian Urban Disaster Mitigation Project (AUDMP) to introduce and institutionalize disaster mitigation practices.

The Asian Urban Disaster Mitigation Program (AUDMP) has been implemented by ADPC under three phases over a period of 10 years. AUDMP not only was a significant signature project that helped to change the disaster risk management paradigm within Asia in the urban context but also helped the national provincial and city government to think risk management as a priority issue, which can positively contribute to economic development of the country.

### **1.1.2 Implementation Strategy in Phase I 1995-1998 (demonstration phase)**

AUDMP was implemented by ADPC with the goal of reducing the disaster vulnerability of urban populations, infrastructure, and lifeline facilities and shelter in the Asian region. It opened a new chapter in urban risk management not only in the ten target countries but also throughout the region. With AUDMP initiatives, advances were evident in 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, emergency management etc. over the past 10-year period. Urban risk reduction is also increasingly being recognized as an integral part of development process and governance rather than the traditional relief, response and rehabilitation interventions.

From the start of AUDMP, ADPC and USAID recognized that the concept of disaster mitigation was new to many countries in Asia and that it would take long-term collaboration from introduction of the concept to create ownership of disaster mitigation policies by national and local governments and individual communities as well as other stakeholders such as national and International NGOs, public and private sector institutions.

Originally AUDMP was designed to be implemented as a four-year program to carry out activities in six countries namely Cambodia, India, Indonesia, Nepal, the Philippines and Sri Lanka. The basic program design assumptions for the demonstration projects were essentially the following guiding principles:

- Each country has the technical expertise to do disaster mitigation
- Each country has the institutional capacity to do disaster mitigation
- Keep it simple with a standard approach flexibly adaptable to the diversity of Asia
- Keep it simple with the focus on secondary towns and municipalities (not mega cities)

- Keep it simple with a preference for starting with one disaster and expanding from there
- Focus on simple, common sense mitigation measures integrated into the normal urban development process not just on science, technology or complicated GIS mapping
- Focus on communities with high vulnerabilities not just the most recent disaster

ADPC initiated AUDMP in October 1995. The project funding mechanism was a Cooperative Agreement between ADPC/AIT and USAID in which USAID shared in the overall program management and guidance with ADPC/AIT who also managed program implementation. In 1999 when ADPC achieved the independent status after separating from AIT, the management responsibility was transferred to ADPC.

Cooperative Agreement mechanism meant that OFDA/PMP; Urban Programs in Washington and RHUDO/Asia all were to have a substantial role in the overall guidance and management decisions of the program. Practically, this resulted in the establishment of a regular bi-annual management review of the program by the way of establishment of a Core Group that consisted of key representatives from the USAID agencies responsible for managing the program funding which included OFDA/PMP based in Washington, Urban Programs (Pre/ENV/UP) based in Washington, RHUDO/Bangkok and ADPC as the implementing organization. The primary USAID management, fiscal responsibility and the Cognizant Technical Officer (CTO) was housed initially with RHUDO/Jakarta and then in USAID/RHUDO New Delhi.

Using criteria developed for the selection, approval and funding of demonstration activities, AUDMP in consultation with USAID country missions identified lead institutions in each target country to be responsible for managing demonstration projects and in-country training programs. ADPC provided sub-grants to implement these demonstration activities. ADPC also conducted regional training and policy seminar activities. There were three stages or phases of the individual country projects. The First Phase was the demonstration phase during which disaster mitigation was introduced to target urban areas in a country and a mitigation activity was implemented in the target community. Once this demonstration had been made, the Second Phase was to replicate this success in other cities within the country. The last consolidation phase refined the project activities and continued the replication efforts. The program aimed to have the targeted communities continue to use the tools acquired during the project and also to have the replication activities continue in new cities within the country after the project has been completed.

The program through its activities during first years has shown higher prospects in developing into a long term major urban risk management programs fulfilling the needs of growing secondary cities in Asia in terms providing the counter actions for increasing vulnerability due to rapid growth and expansion of cities.

### **1.1.3 Implementation Strategy in Phase II 1998-2003 (replication phase)**

Following a mid-term evaluation in May 1998, the Core Working Group comprising ADPC, AUDMP management and USAID mandated the AUDMP management to submit a request to USAID to modify the program grant agreement. Through the same initiative AUDMP was extended to an eight-year program involving ten countries to undertake country demonstration projects in more cities to reduce the natural disaster vulnerability of urban populations, infrastructure, critical facilities and shelters. Bangladesh, Laos, Thailand and Vietnam joined the original six AUDMP countries namely; Cambodia, India, Indonesia, Nepal, the Philippines and Sri Lanka.

At the end of eight years, after implementation of program in ten countries under phase I & II program went into develop in to a major networking endeavor between risk prone urban communities in nearly 20 cities, considerable number of risk management practitioners and institutions dedicated to urban risk mitigation. The program directly implemented the activities in nearly 20 cities and produced cost effective models and strategies in implementation of risk management interventions, developed practical tools for hazard, risk and vulnerability assessment.

The program also introduced city level action planning processes for preparation of Emergency and Mitigation action plans. While program directly supported implementation of risk mitigation measures in selected most vulnerable communities it also encouraged city authorities, national and international NGOs and private sector to undertake similar interventions. The program contributed in developing 4 Regional Training courses covering the subject areas of Urban Disaster Mitigation, Technological Risk Mitigation, Urban Flood mitigation and Earthquake Vulnerability Reduction for Cities and developing a cadre of trainers through courses conducted at regional level. The same courses have been institutionalized at national level through selected national training partner organizations.

The program helped national provincial and city authorities to introduce new policies and also to revise existing policies to support the risk management interventions. It also introduced number of risk communication tools through successful social marketing campaigns and implementation of activities for creating public awareness. The Program also resulted in integrating disaster risk management in university curriculum and builds a network of universities in target countries.

#### **1.1.4 Core funding support.**

While core funding for the AUDMP came from the OFDA, additional funds came from ADPC and collaborating institutions in target countries.

The original AUDMP agreement (CA 940-1008-A-00-5531-00) had a budget of \$4,400,000. USAID obligated \$3,993,700, which was spent by the First Phase of the project. The First Phase of AUDMP expired on 31 May 2000. The Second Phase (CA 386-A-00-00-00068-00) became effective on 1 June 2000 and initially had a term expiring on 30 June 2003 and a budget of \$8,004,129, which was increased to \$8,019,129 in January 2002. Prior to the start of Phase II, USAID obligated \$2,100,000. This was raised to \$2,156,300 in September 2000, to \$3,156,300 in September 2001, to \$3,171,300 in January 2002, and to \$3,671,300 in June 2002. In August 2003, USAID and ADPC agreed to extend the project through 31 October 2003. In September 2003 the two parties agreed to extend the project through 31 December 2003 and USAID raised the obligation to \$4,051,300 but reduced the \$8m cooperative agreement budget to the obligated amount of \$4,051,300.

*The program achievements during phase I & II are given in detail in the project completion report submitted at the end of 2003 December and include:*

- *state of DM environment before and during the different phases*
- *program objectives*
  - *description of activities and achievements at regional and national levels*
  - *summary of lessons learned and recommendations for next phases*

For more details please see web page <http://www.adpc.net/AUDMP/audmp.html>

## **2 Extension Phase 2004 - 2005 July**

### **2.1 Overview**

The strategy adopted in the extension phase of AUDMP was to consolidate the achievements through disaster preparedness and mitigation interventions in selected highly vulnerable secondary cities in South and Southeast Asia through building upon successful elements of the AUDMP past experience under phase I and Phase II.

More specifically, during this extension period, AUDMP aimed to:

- (i) Consolidate the program achievements at national and regional levels and facilitate initiatives for mainstreaming the disaster risk management in the cities of the region; and
- (ii) Collect, collate, and disseminate the accomplishments and lessons learned from the project using different information products and tools to promote wider adoption of risk mitigation practices in the cities of the region.

Wider replication, advocacy, public awareness and social marketing strategies were the major highlights during this period of Program extension.

During the extension phase also the program strategy took a three-tiered approach as in the previous phases of AUDMP and had activities designed under three components namely; Country Demonstration Projects, Information and Networking component and Training, Resource Materials, and Continuing Education component.

AUDMP continued implementation of Demonstration activities in five countries, namely Bangladesh, Indonesia, Lao PDR, Sri Lanka and Thailand during the Extension phase the strategy adopted for implementation of activities was to pursue selective implementation of successful methodologies and good practices in order to achieve institutionalization and sustainability. The activities under Information and Networking component took the lead role in implementation strategy while activities under other two components also continued. The Extension phase not only helped in replicating the program activities in more cities but was also instrumental in consolidation of achievements. For this reason ADPC considers this phase to be a “Consolidation” phase of program activities.

### **2.2. Timeline of the program**

Extension phase was originally planned to be executed from October 1, 2003 until December 31, 2004, but was extended up to July 31. Two extensions were needed due to different reasons. The program was to start originally in October 1, 2003 but since program activities under AUDMP phase II were continued until December 31, 2003 the program activities under extension phase effectively started in January 1, 2004. The Great Tsunami disaster event had devastating effects in three program target countries namely Indonesia, Sri Lanka and Thailand and there were serious setbacks in achieving expected results due to the reason that program partners as well as ADPC program management team had to be engaged in recovery activities during the immediate aftermath of the disaster. This caused further delays in the implementation of program activities. Therefore program was extended by a further period until July 2005 to provide more time to complete the planned activities.

### **2.3 Implementation strategy**

During the extension phase also the program strategy took a three-tiered approach as in the previous phases of AUDMP. ADPC continued to work in the extension phase with

collaborating institutions in each target country under the component of National Demonstration Projects. In order to introduce diversity as well as to have wider outreach some of the new collaborating institutions were added while retaining the technical contributions to program activities of all the other existing partners. This strategy continued to provide new working examples of urban hazard mitigation and also to fine-tune the methodologies introduced before. In a selected urban area in each country, a hazard or set of hazards were assessed, followed by design and implementation of action plans at city level to include appropriate disaster mitigation measures and emergency response actions.

The **Information and Networking component**, which was the major component during extension phase, helped to develop number of information products and resource material for the benefit of practitioners. Eleven new case studies were added to “Safer cities” case study series introduced during phase II of AUDMP. Development of the Primer on Risk management was another highlight and it is expected to enhance understanding of risk management practice through out Asia as well as elsewhere. Most of the methods, strategies tools and practices successfully developed and tested in AUDMP program countries have been included in the primer as good practices. The program also contributed to build number of new public and private networks during extension phase while strengthening the networks build before to serve as a forum for exchanging information and experience on urban disaster management. This approach was adopted with a goal of replicating successful hazard mitigation practices from the demonstration projects throughout the region. It helped the ADPC to increase the outreach, establish new networks and more importantly secure funding from other sources to display the sustainability.

The **Training, Resource Materials, and Continuing Education** component provided opportunities to further institutionalize hazard mitigation practices through seminars for national-level decision makers, as well as by using an in-country and regional “train-the-trainers” approach for passing on technical skills via a core curriculum in hazard assessment and mitigation. During the extension phase AUDMP developed and delivered a **fifth regional course on Risk Communication**. Also during the same period AUDMP introduced **4 training modules on very essential subjects** for target specific audiences namely

- Mason training in earthquake prone areas,
- Land use planning for risk management,
- Construction in areas prone to metrological hazards, and
- Risk communication

Most of the activities under Extension phase have been tailor made to suit the recommendations of the 2<sup>nd</sup> External Evaluation mission of AUDMP and the evaluation mission findings have helped to increase the effectiveness of program activities as well as to consolidate the program achievements.

### **3.0 PROGRAM ACCOMPLISHMENTS**

#### **3.1 Country demonstration projects**

##### **BANGLADESH**

Project Title:	Bangladesh Urban Disaster Mitigation Project (BUDMP)
Site(s):	Dohar and Goalanda
Hazard(s):	Floods

Lead Institution: CARE-Bangladesh in partnership with Resource Integration Centre (RIC) and Shariatpur Development Society (SDS)

*Overview:* The objective of the Bangladesh Urban Disaster Mitigation Project (BUDMP) is to minimize the impact of flood disaster vulnerability of urban population, infrastructure, lifeline and shelter facilities. To accomplish this, the project focused on establishing community-based flood mitigation and disaster preparedness systems, and improving the capacity and skills of the community in managing risk and applying appropriate mitigation measures. During the Extension phase, BUDMP specifically focused on establishing community-based flood mitigation and disaster preparedness system development in the selected municipalities of Dohar and Goalanda. The Emergency response action plans and Mitigation action plans for both municipalities have been prepared through a process of community based risk assessment.

As per the standard provisions all municipalities in Bangladesh should constitute a Disaster Management Committees at municipal level. The project demonstrated the applicability of an existence of DM committee and used it as an official organ to obtain political support. In all target municipalities MDMC was actively involved in project activities. Improving capacity and skills of elected representatives, government officials and other key players in the community has been also initiated to ensure effective management of risk in urban areas.

CARE Bangladesh and its selected partner NGOs implemented the project during extension phase - Resource Integration Centre (RIC) for Dohar Municipality, and Shariatpur Development Society (SDS) for Goalanda Municipality respectively. Activities were also carried out in collaboration with the local community, BUDMP steering committee, and the Municipal Disaster Management Committees.

## **INDONESIA**

Project Title: Indonesian Urban Disaster Mitigation Project (IUDMP)  
Site(s): Padang (*Kota*) and Pesisir Selatan (*Kabupaten*)  
Hazard(s): Multiple Hazards  
Lead Institution(s): *Yayasan Inovasi Pemerintahan Daerah / Center for Local Government Innovation (YIPD/CLGI)*

*Overview:* The primary goal of the Indonesian Urban Disaster Mitigation Project (IUDMP) is to facilitate implementation of sustainable mechanisms for natural disaster vulnerability reduction in towns and cities in Indonesia as part of governance process with participation and coordinated efforts of all the stakeholders.

This was realized through the following objectives:

- (a) Conduct vulnerability assessments in selected vulnerable towns, cities;
- (b) Develop mitigation action plans for vulnerable built environment in partnership with all concerned stakeholders;
- (c) Capacity building for adoption and application of practical tools for risk management and implementation of credible solutions for effective risk mitigation; and
- (d) Raise public awareness to sensitize decision makers for implementation of risk reduction interventions through integrating the same in governance process and city development.

During the extension phase, IUDMP focused on working with key executive local government associations to advance an agenda of disaster mitigation in Indonesia.

The project was implemented by the Yayasan Inovasi Pemerintahan Daerah / Center for Local Government Innovation (YIPD/CLGI) in collaboration with Association of Indonesian Municipalities / *Asosiasi Pemerintah Kota Seluruh Indonesia* (**APEKSI**), the Association of Indonesian Regency Governments/ *Asosiasi Pemerintah Kabupaten Seluruh Indonesia* (**APKASI**), and with technical inputs from the Institut Teknologi Bandung (ITB).

### **LAO PDR**

Project Title: Lao PDR Urban Disaster Mitigation Project (LUDMP)  
Site(s): Luang Prabhang  
Hazard(s): Urban fire and road safety  
Lead Institution(s): The National Disaster Management Office (NDMO); the Urban Research Institute (URI); and the Fire Protection and Prevention Department

*Overview:* The Lao PDR Urban Disaster Mitigation Project (LUDMP) aimed to reduce the disaster vulnerability of population, infrastructure, and economic assets in Lao urban areas to fires by establishing systems for hazard assessment and disaster mitigation. During the extension Phase, LUDMP focused on replicating activities in the province of Luang Prabhang.

To accomplish this, the *Lao National Disaster Management Office (NDMO)* in collaboration with the *Urban Research Institute (URI)* and the *Fire Protection and Prevention Department* focused on conducting a risk assessment; building capacity for prevention and response within the city's emergency service departments; establishing public awareness campaigns and; improving regulatory system for fire mitigation.

The project developed environment work books for cities of Vientiane, Pakse and Luang Prabhan so that future city planning and other city based development initiatives can be undertaken using the information provided in these resource books.

### **SRI LANKA**

Project Title: Sri Lanka Urban Multi-Hazard Disaster Mitigation Project (SLUMDMP)  
Site(s): Rathnapura, Nawalapitiya, Kandy, Colombo, Cities along Kelani River  
Hazard(s): Multiple hazards  
Lead Institution(s): The Center for Housing, Planning and Building (CHPB), National Building Research Organization (NBRO), and Urban Development Authority (UDA)

*Overview:* The Sri Lanka Urban Multi-Hazard Disaster Mitigation Project (SLUMDMP) aimed to reduce the vulnerability of Sri Lankan cities by identifying hazards including landslides and floods. During the extension phase, the project focused on conducting mitigation work in areas affected by the May 2003 floods. It demonstrated the construction practices suited for landslide and flood prone areas through extending technical assistance to families that have been resettled from affected urban areas of Rathnapura. It also initiated community based hosing project in one of the resettlement sites in Rathnapura to create two model houses, a community center, community well and slope stabilization measures.



In addition the project paid more emphasis on consolidation of activities undertaken in the previous phases, developing social marketing strategies, and capacity building activities. To complement this, the Emergency Management & Response Plan (EMRP) was finalized for the local authorities along the Kelani River, and EMRP of Ratnapura was revitalized in light of the May 2003 floods. The project initiated a successful school program, which helped to develop school disaster reduction clubs in 15 schools.

ADPC implemented *SLUMDMP for Housing, Planning and Building*, in partnership with the *National Building Research Organization* and the *Urban Development Authority*.

## **THAILAND**

### Thailand Urban Disaster Mitigation Project (TUDMP)

Site(s): Hat Yai and Kuan Lang Municipalities  
 Hazard(s): Floods, Droughts, and Landslides  
 Local Institution(s): Hat Yai Municipality; Department of Disaster Prevention and Mitigation (DDPM); Thai Red Cross (TRC); Volunteers for Civil Defense; and Mittraphab Samakkee Foundation

*Overview:* The Thailand Urban Disaster Mitigation Project (TUDMP) aimed to strengthen and improve capacity for risk assessment and mitigation planning in Thailand through demonstration activities and training as well as reduce the vulnerability of urban populations, lifeline facilities, infrastructure and shelter to natural hazards. During the consolidation phase, more focus was on the demonstration of disaster management initiatives at municipality levels; capacity-building activities for disaster management stakeholders; and risk communication strategies to create public awareness. The Department of Disaster Prevention and Mitigation (DDPM) under the Ministry of Interior, established since 2002, is the principal government agency for disaster management in Thailand.

DDPM has recognized the indispensable importance and need of strengthening institutional capacities in disaster risk management. The project helped to conceptualize immediate and long term institutional development plans for the DDPM and carry out long-term capacity building for department staff. The project also contributed in developing an emergency response plan for the municipality of Hat Yai. It also developed community neighborhood networks to augment the efforts of the municipality and to develop and organize evacuation drills for communities. The project also helped in establishment of community based organization for disaster risk mitigation to support the major structural flood mitigation interventions undertaken by the municipality. The capacity building program at city level received great support from national and local disaster-related institutions, i.e. DDPM, Irrigation department, meteorology department, Mittraphab Samakkee foundation, Fire and Rescue Association (FARA) A range of activities were provided for people to participate in risk management activities.

One of the highlights was the organization of a city level Disaster Safety day for the first time in Thailand. The day's events included launching of flood control center, school competitions, emergency preparedness displays by communities, film show, exhibition, disaster day parade, distribution of 110 life Jacket to communities, demonstrations and publication to create awareness of the public on the importance of community, family preparedness, DDPM and the key local networking agencies.

The partners to implement the project were the Hat Yai Municipality; Department of Disaster Prevention and Mitigation (DDPM); Thai Red Cross (TRC); Volunteers for Civil Defense; and Mittraphab Samakkee Foundation.

### **3.2 Information and Networking**

AUDMP's Information and Networking (I&N) component aimed to facilitate knowledge sharing and dialogue between key stakeholders to promote replication of AUDMP approaches in other cities and countries worldwide

#### ***Primer on Disaster Mitigation in Asia***

The Primer serves to provide a guidebook for practitioners, academics, trainers, city government officials and others interested in working on disaster mitigation. Development of the contents and layout of the 3 volumes (Volume 1: General; Volume 2: Floods; and Volume 3: Earthquakes) has been undertaken by the Advisory Meeting on 9-10 July 2004 in Bangkok, Thailand.

It was agreed to develop the primer I-General volume under AUDMP while UNDP agreed to provide funding for the volume II- Floods. Finalization of the Primer was carried out through consultations from the practitioners. It was presented to NDMO representatives of RCC members at the 4<sup>th</sup> RCC meeting and 5<sup>th</sup> RCC meeting. Also consultation process included a practitioners meeting held in May 2005. The printing of the Primer- Volume 1 General Aspects of Risk management has been completed and dissemination of the material will be carried out through web and also through distribution of hard copies to practitioners and institutions dealing with Risk management in the region.

#### ***Electronic Newsletter***

An electronic newsletter was initiated in 2003 to target wider audiences; broaden coverage of subject area besides AUDMP's activities and achievements; and gain more interactive exchange of knowledge and experiences on disaster mitigation in Asia. The Electronic newsletter continued its monthly issues during the Extension Phase. It helped to share with subscribers not only the program activities and accomplishments but also other relevant information. Published monthly, this moderated e-newsletter, which is sent to almost 2,500 subscribers, includes latest information sources and analytical accounts of new approaches, methodologies, models, resources and tools for disaster risk reduction and also provides updates on the disaster mitigation projects, conferences, training courses in the region.

Anyone interested can subscribe to the e-News by sending a blank email to [adpc-announce-subscribe@yahoogroups.com](mailto:adpc-announce-subscribe@yahoogroups.com). Response to the newsletter has been very encouraging.

#### ***Case Studies***

Safer cities case study series was started during the Phase II of AUDMP to present the various options and good practices of Urban Risk Management. During AUDMP Phase II four case studies were developed and during Extension Phase eleven more case studies were added.

*Safer Cities 5: Community-based disaster risk reduction in central Sri Lanka - Mitigating landslide and rock-fall damage in urban Nawalapitiya*

This case study looks at two community-based disaster mitigation initiatives in Nawalapitiya, in Kandy district, central Sri Lanka. It demonstrates a novel experience as state, non-government organizations, local authorities and community groups collaborated to reduce disaster vulnerability of the affected communities. These efforts made use of landslide-risk maps, the technical knowledge of disasters and the public awareness generated by earlier projects implemented by the Center for Housing, Planning and Building (CHPB), Intermediate Technology Development Group (ITDG), National Building Research Organization (NBRO) and Urban Development Authority (UDA), with support from the Nawalapitiya Urban Council (NUC).

*Safer Cities 6: Promotion of Disaster mitigation in Sri Lanka – Piloting disaster risk communication through empirical approach*

This case study encapsulates processes, experiences and lessons learned during disaster risk communication initiatives implemented under the SLUMDMP. This program piloted several public awareness-raising activities and succeeded in placing disaster mitigation on the public agenda. The study looks at the project's experiences in planning and developing its communication campaign, the modes of communication it used to convey the message of disaster mitigation to its target population and the rationale behind each mode.

*Safer Cities 7: Can Small be Beautiful? Community-based flood mitigation in Bangladesh*

This case study highlights how community-based disaster risk management (CBDRM) interventions contributed to enhancing sustainable flood proofing measures in the municipalities of Gaibandha and Tongi. The lessons learned through the BUDMP experience show how small-scale external interventions can encourage the community to integrate and build upon indigenous knowledge and techniques to achieve livelihood security.

*Safer Cities 8: Channels of Communication – a Challenge: Public Awareness for Flood Preparedness in Bangladesh*

The case study describes how a public awareness campaign was developed and implemented by the BUDMP to communicate flood mitigation and preparedness in the two municipalities in Tongi and Gaibandha. The case study attempts to answer to some vital questions raised as to the effectiveness of the campaign. Did the messages reach the people? Are people acting upon the messages? What lessons can be learned from the BUDMP experience?

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

A fire risk zonation map of Vientiane was compiled under the People's Democratic of Laos (LAO PDR) Urban Disaster Mitigation Project (LUDMP) for fire prevention, mitigation and preparedness at the national and city levels. During this attempt, Ban Hatsady was selected to undertake a community based-based fire risk assessment process. This study presents the practical experience of the Ban Hatsady villagers as they worked together to identify their own vulnerabilities and developed their own strategies for reducing impact of future fire hazards. It shows how a community-based fire risk management approach becomes a key to overcoming recurring problems of fire.

*Safer Cities 10: Creating Earthquake Preparedness in Schools: A case Study of Mitigation Efforts in Indonesia*

This case study focuses on the experiences of implementing earthquake hazard mitigation to make school communities safer in Bandung, Indonesia. It highlights the efforts the Indonesian Urban Disaster Mitigation Project (IUDMP) implemented between 1997 and 2003. The project carried out a school-retrofitting program within its mandate. This case study also considers possible partnerships and efforts for the future of creating safer school communities a sustainable endeavor.

*Safer Cities 11: Towards Technological Hazards Risk Reduction in Ahmedabad - Schools as effective institutions for disaster awareness and preparedness*

This case study relates experiences from the implementation of a pilot project – *Testing Communication Strategies for Industrial Disaster Risk Reduction* - in one of the industrial estates of Gujarat state in India. The project looks at evolving a model for community disaster preparedness. The model had the school playing a pivotal role in the communication strategy, along with several other stakeholders. The case study details out how each stakeholder was involved, and their role in the project.

*Safer Cities 12: Demonstration Housing Construction for Landslide and Flood Prone Areas: A case study from Ratnapura, Sri Lanka*

Relocation and resettlement of the families affected by floods and landslides that occurred during May 2003 in Ratnapura, Sri Lanka, forms the backdrop for this case study. SLUMDMP considered a “Community Based Structural Mitigation Initiative” at a relocation site. The objective of this activity was to construct demonstration housing on hazard prone land such as construction on slopes, flood-prone land and cyclone prone areas. SLUMDMP provided technical assistance and implemented this program through participation of the relocated community.

*Safer Cities 13: What is the Appropriate Mitigation Mix? - Structural and non-structural mitigation in Hat Yai, Thailand*

The devastating flood of 2000 brought to public attention the need for appropriate actions to minimize future social and economic losses in Hat Yai and Thailand. This case study shows how partners of the Thailand Urban Disaster Mitigation Project (TUDMP) have worked together to plan and implement mitigation measures for Hat Yai. In this pilot initiative, TUDMP’s broader goal is to demonstrate to Thailand and other countries in Asia, a methodology for mitigation planning and implementation that promotes safer communities and sustainable development.

*Safer Cities 14: Public Awareness and Social Marketing – Experiences from AUDMP*

This report distills the finer points of public awareness and social marketing in urban disaster risk management practice in Asia. It reviews more than dozen case studies of country demonstration projects that have been implemented as a part of Asian Urban Disaster Mitigation Program (AUDMP). It draws principles, methodologies, examples and lessons learned from each public awareness and social marketing component of country demonstration projects of AUDMP in 10 target countries, comparing various tools used in

campaigns for their relative effectiveness and appropriateness in terms of context and target audience segments.

*Safer Cities 15: Community-based Earthquake Risk Management in Dhaka City - Community empowerment for earthquake preparedness*

This case study is about preparing the urban communities for earthquake hazard through organizing the communities and activating the service providers (organizations responsible for responding to earthquake hazard). Being a pilot initiative, the project was intervened in 16 communities / wards of Dhaka City that were selected based on their receptivity and vulnerability through community participation. The case study features the various approaches of empowering the communities through linking with service providers, raising peoples' awareness, enhancing communities' capacity and activating the service providers.

**Videos**

The video documentaries have proven to be a better way to present the case studies and program accomplishments. The following video documentaries were added during the Program extension period. All video documentaries are available in DVD format and the documentation has been made available for distribution among the institutions to be used as training material.

- A video documentary on BUDMP Achievements was prepared and launched during the AUDMP Working Group Meeting in Dhaka, Bangladesh in 3-5 April 2004.
- A second video was prepared on AUDMP achievement in partner countries
- A 9-minute video was developed on Sri Lanka's community based intervention for drought mitigation.
- A 15-minute video on the Indonesia Urban Disaster Mitigation project was also developed

All documentary films were distributed to a larger audience in the WCDR 2005 - ADPC exhibition stall.

**Awareness Material**

*Guidebook on appropriate techniques on housing in flood prone areas in Bangladesh*

In 2004, flood has destroyed many houses in urban slumps and rural areas in Bangladesh. AUDMP team and CARE Bangladesh jointly conducted a study to obtain information on common causes for flood impact to housing stock in urban slums, rural urban and semi-urban settlements. The study reveals that the reason for high impact to housing is mainly due to the unavailability of technical guidance for better techniques to be used in flood prone areas.

On the request of the USAID mission in Bangladesh and other stakeholder institutions, AUDMP undertook development of a simple "guidebook on appropriate techniques on housing in flood prone areas in Bangladesh" The book was printed in English and Bengali and disseminated to local audience through local and international NGOs working in the reconstruction of houses in flood affected areas.

### ***Participation in Regional Consultative Meeting (RCC) of ADPC***

The Regional Consultative Meeting (RCC) of ADPC has become a regional forum where annually the National Disaster Management Office representatives discuss the issues related risk management policy and practice. The meeting takes a review of the disaster situation during the year and exchanges views on better coping up strategies and lessons learned. In the 4<sup>th</sup> RCC meeting held in Dhaka, Bangladesh a full day was devoted to the discussions under the theme of “Urban Risk Management”. AUDMP team took lead role in organizing the sessions and presented the AUDMP experience to convince the governments of the need for integrated efforts in urban governance and risk management in order to make the cities safer. In the 5<sup>th</sup> RCC meeting under the theme of “Mainstreaming Disaster Risk Management “ AUDMP presented the concept note on guidelines for mainstreaming disaster risk management in sectors such as housing & infrastructure, urban development.

### ***Participation in World Conference on Disaster Reduction, Kobe 2005 January***

ADPC/AUDMP organized a session on Urban Risk Management at the World Conference on Disaster Reduction in Kobe in January 2005. AUDMP program manager was invited to be a participant in the drafting committee of the theme paper prepared under the leadership of UN-HABITAT. This session of the World conference was well attended and the AUDMP experience including the experience of country demonstration projects have been presented at the session. Around 200 sets of video documentaries and case studies have been distributed to participants.

### ***Rapid Assessment of Tsunami Impact in Sri Lanka, Thailand and Indonesia.***

Immediately after the tsunami, ADPC and its partner TSF deployed emergency telecommunications teams to affected countries, who served the affected areas in facilitating emergency communications to benefit the government and non-government relief workers, the media and the affected community members. Additionally ADPC deployed teams in Indonesia, Maldives, Sri Lanka and Thailand to assist the respective governments in damage assessment and emergency response efforts. AUDMP Program team participated in the assessments in Indonesia, Sri Lanka and Thailand. The rapid assessments were conducted in collaboration with the country partners of AUDMP and forwarded to respective governments through the national partners.

#### ***Sri Lanka***

A rapid needs assessment of emergency services and impact to housing and human settlements was carried out to assess the efficiency of emergency services, needs in the aftermath of disasters. This exercise was also carried out to assess the status of centers established for IDPs in terms of operational capacity and to assess the situation with housing and human settlements. Rapid assessment carried out by ADPC team was useful for the development of the recovery programs. This assessment was completed during January 2005.

#### ***Indonesia***

A separate ADPC team was deployed to Aceh, Indonesia to work with the UNDP mission and the BAPPENAS.

### *Thailand*

In Thailand ADPC deployed its staff to provide medical assistance to the Royal Thai Government. A team of ADPC personnel conducted Damage and Needs Assessment in the affected areas. All affected provinces were visited. Included in this report is information about the scale of the impact and the national response.

The ADPC teams were associated very closely with government agencies, UN, NGOs, Community-Based Organizations and Private Sector agencies in the affected areas. Information on damages and relief efforts was gathered from assessment missions, the National Emergency Operation Centers, as well as UN agencies, USAID missions and national and international NGOs. Information was also gathered through interviewing people and through direct observations in the areas. Assessment results were presented, shared with USAID/OFDA and made available to various other stakeholders as appropriate.

## **3.3. Training, Resource Materials and Continuing Education**

### **Regional Training**

#### *Disaster Risk Communication Course*

The 5<sup>th</sup> AUDMP course titled “Disaster Risk Communications (DRC)” was designed and developed during the extension phase. The pilot course was held from 2-6 February 2004 in Bangkok, Thailand. Participated by about 20 participants representing 13 countries, the course aimed at strengthening capacity of development workers on DRC. The primary target group of the course was the project partners but there were also some others interested who participated in the course. The course had a very positive response and some of the national training partner institutions agreed to institutionalize the course at national level.

DRC materials were compiled into a navigable CD ROM-based module for distribution to stakeholder institutions.

#### *Institutionalization of UDM in the curriculum of Universities*

##### ***CASITA: Capacity-building in Asia using Information Technology Applications***

Initially started as an AUDMP activity in July 2002, the CASITA project was subsequently funded by the European Union for institutionalizing urban disaster mitigation in the urban planning schools of Asian universities and institutions. The activity was partially supported through AUDMP during the extension phase. Some of the AUDMP target cities were benefited from the activities of the network as some of the risk assessments were conducted based on AUDMP target cities. The final workshop of this project took place at the Indian Institute of Remote Sensing (IIRS) in Dehradun, India, on 16-19 March 2004. Seventeen lecturers, researchers and urban planners from 14 partner universities and training institutes attended and presented the final outputs of their case studies. The training material has been uploaded on the ADPC web site for beneficiary partners from 14 universities in the region.

### ***Urban Flood Mitigation Course (UFM) - 5***

Urban Flood Mitigation Course (UFM) was organized in collaboration with ITC Netherlands, Government of Naga City and GIS Application Center (GAC) of the Asian Institute of Technology (AIT), Thailand. The financial support for the course was provided by Government of Netherlands. The course focused on urban flood mitigation issues, specifically on the impact of floods and the structural and non-structural interventions available to mitigate urban impact. The course was conducted during the period 23 August – 3 September 2004 in Naga City, Philippines, UFM course curriculum was modified to integrate GIS application into the curriculum to enrich the subject and to provide hands-on experience to participants on application aspects. Thirty-one participants from 7 countries attended the course.

### ***Earthquake Vulnerability Reduction for Cities (EVRC)-4***

Being the fourth in a series, EVRC-4 was offered to enlighten participants about the causes and effects of earthquakes and the possible strategies and approaches to reduce the damage and loss of life associated with it. The course was conducted in Jakarta, Indonesia during the period 29 November- 3 December 2004 and AUDMP country demonstration projects namely Kathmandu Valley Earthquake Risk Mitigation Project (KVERMP) and Indonesia Urban Disaster Mitigation Project (IUDMP) were presented as key community based initiatives from the region for reducing the impact of earthquakes in urban areas such as Kathmandu, Bandung, Bankulu etc. The course was organized by AUDMP in collaboration with IUDMP partners ITB, CLGI and 18 participants from Bangladesh, Indonesia, Iran, Pakistan, Philippines and Thailand participated in the event.

### ***National and Regional Training***

#### ***National Disaster Management (NDM) Training in Sri Lanka***

A two-day workshop to integrate NDM into the existing curriculum of the geography subject at G.C.E. (A/L) was held on 20-21 March 2004 at the CHPB office. The activity was a joint collaboration of the Ministry of Education and National Institute of Education (NIE).

#### ***Land Use Planning for Disaster Risk Management***

In collaboration with GAC of AIT, a National Training Course on Land Use Planning for Disaster Risk Management was conducted in Lao PDR and Sri Lanka respectively during the last quarter of 2004(8-10 November and 12-17 December 2004 in Lao PDR and Sri Lanka respectively). Designed to merge experiences from two professional fields of practice, land use planning and risk management, the course aimed at developing a framework to integrate a set of generic and hazard-specific risk management principles into the planning and management of land use.

#### ***Urban Disaster Mitigation (UDM) course in Lao PDR, 6-10 September 2004***

The UDM course was organized under the LUDMP project. The course materials and handouts, translated by URI to Khmer language were distributed to 23 participants, who were mostly from Luang Prabhang and other districts in the northern part of Lao PDR.



### ***Regional meeting on Landslide Risk Mitigation in Urban areas***

A Regional meeting on Landslide Risk Mitigation in Urban areas was organized with a long-term objective of reducing the landslide disaster vulnerability of urban settlements, infrastructure and critical facilities in the landslide prone countries such as India, Nepal, Bhutan, Sri Lanka, Indonesia and Thailand. The workshop was held on 13-15 September 2004 and was attended by 11 participants representing the representatives of above countries, ADPC and Norwegian Geo-technical Institute (NGI).

### ***UDM course in Chiang Mai University***

Under the Thailand Urban Disaster Mitigation Project (TUDMP) UDM course was organized as an institution-wide course at Chiang Mai University. The course participants were mainly undergraduates and faculty members from Faculty of Natural Resources, Engineering, Geography and Geology. The course was held during the period 9-11 April 2005 and about 60 participants attended the course.

### ***UDM course in Asian Institute of Thailand (AIT)***

Under the Thailand Urban Disaster Mitigation Project (TUDMP) UDM course was organized as an institution-wide course at Asian Institute of Thailand (AIT) during the month of June 2005. Around 100 Master degree students from the institute attended the course.

### ***Segment specific course modules***

Segment specific course modules were prepared under following subjects;

- Construction of Disaster Prone areas
- Urban Disaster Mitigation
- Land Use Planning and Disaster Risk Management
- Mason Training for Earthquake Vulnerability reduction
- Risk communication

While the Mason Training for Earthquake Vulnerability reduction developed in partnership with NSET-Nepal was transformed into a textbook format for free distribution, course materials of other 04 modules were compiled into navigable CD ROM-based modules for distribution to stakeholder institutions. In addition a questionnaire was developed and distributed for obtaining the feedback from AUDMP alumni who had attended training courses organized by AUDMP.

### ***Research on Disaster Risk management Capacity Building in Asia***

AUDMP team conducted research on the Disaster Risk Management Capacity Building in Asia using questionnaires, which were distributed among disaster risk management practitioners and institutions in Asia. The activity was a collaborative effort between ADPC and Georgetown University, USA and sponsored by Bill and Melinda Gates Foundation. The study results were then presented in a practitioner's forum held in Bangkok in May 2005. The proceedings of this workshop included a paper on future risk management needs in Asia to address the gaps and new requirements to suit the present risk scenarios and environment.

## **3.4 Program Management and M&E**

### **AUDMP 9<sup>th</sup> Working Group Meeting (WGM)**

The 9<sup>th</sup> Annual Working Group Meeting was held during 3-5 April 2004 in Dhaka, Bangladesh. Co-hosted by the CARE Bangladesh, WGM brought together participants from AUDMP project partner institutions from Bangladesh, Lao PDR, Indonesia, Sri Lanka and Thailand, USAID representatives, and the AUDMP team. The main objective of the meeting was to review the progress of the projects and discuss future directions. The Social Marketing Strategy and Monitoring and Evaluation (M&E) were the key themes of the meeting. Ms. Rebecca Scheurer, M&E Specialist from OFDA/Washington, gave a special presentation on Project M&E and conducted a session on Monitoring and Evaluation. There were also country consultations for each of the partners. Questions and clarifications regarding the project implementation, as well as the difficulties encountered during program implementation were discussed and clarified.

#### **4.0 Lessons Learned**

AUDMP was successful in demonstrating various practical ways of urban risk management at city level. The key findings on lessons learned of the successful strategies adopted during the project can be summarized as follows:

***The municipality governance process needs to understand that natural disaster risk can be reduced through making risk management a part of regular decision-making process***

Through establishment of Municipality Disaster Management committees (MDMC), in target cities involved in country demonstration projects, AUDMP demonstrated the applicability and practical ways of obtaining political commitment, cooperation and collaboration of political authorities in risk management decision-making and implementation. In some countries like Bangladesh the Municipality Level Disaster Management Committee has official status and formation of such committees is a mandatory requirement in the governance structure. But in many other countries it is not a mandatory requirement therefore such initiatives proved to be very essential and useful for mainstreaming risk management in urban governance. Through establishment of such mechanisms, AUDMP demonstrated the possibility of risk management plan implementation through a well-integrated process of urban governance. This way the risk management can be made a priority subject in development policies and strategies at local government level.

***Influencing local governments through external technical assistance and additional resources for risk management activities is possible***

International agencies and local NGOs have begun to influence local governments to incorporate disaster risk reduction as part of the development strategy and plans. The AUDMP national partners have launched advocacy campaigns to influence the government authorities. Few country partners have done studies on the policies and shown lot of redundancies in policy level and reasons for set backs in policy implementation. The local governments in all target countries are grappling with many problems but with limited resources to provide solutions. Risk management often receives low priority due to resource constraints and lack of technical capacity for assessment and treatment of risk. AUDMP demonstrated how little extra resources and external technical assistance can make a huge difference in providing solutions to burning problems within the urban societies especially

underserved communities, informal urban settlements which are often neglected in the development process.

***Failure of implementation of legislation and policy changes is due to lack of demonstrations***

Many countries in Asia have initiated promotion campaigns on mitigation strategies in development through legislation and policy change, risk assessment, awareness creation and capacity building programs. Policies and legislation can encourage planning for disaster risk reduction but will not contribute to risk management unless they are implemented. AUDMP provided appropriate applications of risk assessment, mitigation interventions awareness creation and capacity building to supplement the risk management legislation and policy change in all target countries concerning the local governance and administration.

***Implementation of capacity building programs is useful for knowledge enhancement of stakeholders***

Building the capacity of national level stakeholder agencies to undertake mitigation as part of development process is a challenging task. It is better if demonstrations can be arranged to supplement the class room training in order to build the capacity of local partners. Enhanced capacity paved the way for innovative solutions to reduce the cost as a solution to resource constraints in building safer and resilient urban communities.

***Achieving food security through disaster mitigation provides opportunities for diverting the funds for development initiatives***

AUDMP demonstrated the importance of family and community preparedness as a way to reduce the impacts of disaster events. Preparedness takes in to consideration food security, livelihood security and other cross cutting issues which are essential for recovery of poor after disaster events. The disaster risk mitigation contributes to food security of the urban poor. Also mitigation interventions implemented by communities helps save government funds, and these can be directed to other development interventions. AUDMP thus demonstrated the practical approaches of family and community preparedness.

***Converting the victims or vulnerable communities in to a resource for undertaking mitigation intervention is essential for community development, self-reliance and building safer communities***

The victims of disasters mostly live in areas prone to hazards such as urban slumps, informal settlements so on. If such communities can undertake interventions to reduce the risk then they can become a resource. The additional information on hazards and vulnerabilities should come from external institutions and it will compliment the traditional coping mechanisms. Capacity can be enhanced by establishing community based institutions for risk management at local government level. Vulnerable communities can then be converted to resources to address the needs of risk reduction. AUDMP demonstrated the practical ways of mobilizing the community support for development and maintenance of community infrastructure.

## 5.0 Future in Urban Disaster Risk Management (concerns, trends opportunities and directions)

“When States treat local authorities as partners, and allow urban residents a voice in the way their streets, stores, are workplaces are managed, cities are usually more efficient and livable”  
Kofi Annan, Secretary General of the United Nations

Over the past few decades the number of the disaster events, independent of the nature, be it frequent low intensity events or rare high consequence events, has increased tremendously. In the same way impacts of such events also have increased making disasters to be most damaging events economically as was evident from local events such as earthquake in Gujarat 2000, floods in Bangladesh in 2004 or flash floods and land slides in Mumbai in 2005. Same trend was visible from the biggest regional devastating event history has ever known, such as the tsunami event of 26<sup>th</sup> December 2004 in Asia. All such events have highlighted the need for increased efforts to protect the social and economic assets at all levels of governments to protect against emerging risks. Every situation, be it a pre-disaster, during or post disaster recovery, offer a great number of opportunities for improvement from the present scenario.. This is more applicable to rapidly growing cities, which have to explore such opportunities and to convert the same into their advantage and make use of the situation to make the city environment sustainable and safer for living. This should be the risk management goal of all cities in Asia and urban disaster risk management community should show their commitment towards creating a **culture of prevention and mitigation** of disasters before they strike.

Mitigation aimed at reducing the potential effects of hazard environment should be a concern of communities who are at risk. They are the first responders who should grapple with the hazardous situation and they should know how to act and react to its forces and bring the situation under control. They understand the situation and are equipped with indigenous practices and coping mechanisms to face with situations. The rapidly changing urban environment has made the understanding of such communities ineffective and technology solutions are needed to augment the understanding of communities. **Communication of the risk to communities and prepare them to anticipate disasters** should also one of the high priorities of Urban Risk management community.

In any case communities at risk should be considered as the central force in decision-making. Any kind of physical planning endeavors, be it urban land use planning, planning of city infrastructure settlement or transportation, a participatory approach provides better solutions. Difficulties should be overcome through building up consensus and understanding between authorities and communities. Urban risk management practitioners should **advocate for participatory decision making** and urban governance process where all vulnerable segments such as women, disabled, aged, should have a voice.

Prevention and mitigation interventions should commence from the viewpoint of increasing resilience through **encouraging building on the basis of hazard vulnerability assessments and by introducing by-laws to discourage settlements in hazard prone areas** when areas are proved to be prone to hazards. The scientific analysis show that the human interventions, by way of various development programs, impact upon the environment and influence atmospheric events. Therefore, unless actions are taken to reverse such trends, they will lead to more and more extreme weather conditions, thus increasing the possibility of high intensity hydro-meteorological disaster events. Almost half of the population now lives in cities and

Asia being the most populous continent, has to swallow most of the brunt of the problems and issues created by urbanization. Unfortunately many who live in unplanned settlements on land vulnerable to floods, landslides or on land contaminated with industrial waste are increasingly becoming targets for disaster events.

After the great Tsunami event in Asia, repeated high seismic events recorded along the plate boundary indicated the possibility of a similar event hitting a highly vulnerable urban area or region within the Asia. The scientific evidences have shown the vulnerability of high-rise building in most cities in Asia. Cities such as Dhaka increased its population 10-12 times over last 25 years. High rise buildings and urban slums are appearing everywhere and burgeoning to house those who have and those who do not have resources. In most of the cities neither building nor planning norms are realistic nor are construction control services functioning adequately. The disaster urban risk management practitioners should strive to undertake speedy measures to **upgrade and improve the resistance of buildings and basic infrastructure** to reduce the number of casualties and impacts in case of disasters.

Disasters are capable of revealing the existing vulnerabilities of our cities. Many disaster events have shown the need for having city and local level emergency response plans but in reality authorities do learn lessons from mistakes, inadequacies, or shortcomings. City level emergency plans have to be understood as a prerequisite for providing better services to the city population rather than acting to cope up with unexpected situations. Urban Disaster Risk Management Practitioners should advocate making **City Emergency Response planning to be a mandatory** provision of urban governance.

After every serious disaster, humanitarian aids, relief supplies and resources as well as in kind contributions pour in to the affected area or to the country affected. In most countries there are no facilities to attend to and handle such an influx of material and human aid. The situation gets aggravated due to space problems and high number of victims who expect a quick supply of relief and medical attendance. In addition each major disaster creates new situations for which authorities have little room for expeditious solutions. The city authorities should consider **adequate arrangements for critical facilities such as hospitals and adequate training to concerned personnel to handle such unexpected events.** Training of rescue teams, medical first responders etc. at city level should be taken as one of the priorities in the city agenda. In Tsunami the problem of handling of dead bodies, and medical supplies have come up as acute problems. Therefore authorities have to be more vigilant about the new capacities required and should add more capacity building endeavors to the usual menu of activities.

On the other hand, in most cases such supplies tend to dwindle with the passage of time and recovery of affected population becomes only a secondary concern of local authorities. They generally grapple with resource constraints to provide temporary shelter, food and other needs for the displaced persons. The **disaster events demands quick responses and recovery of affected.** Most of the governments, donor agencies, and development sector institutions such as national and international NGOs try to implement hastily prepared programs to replace destroyed housing and settlements, infrastructure, transport facilities so on. They tend to do the same mistakes, which created the vulnerability in the affected community at the first place and patronize activities that recreate the risk at different level. Past events have shown that such programs carried out without adequate planning have created more problems than solutions. Authorities should try to convert the disasters in to opportunities through reacting to the needs quickly and acting fast. The urban risk

management practitioners should advocate the need for donor agencies **to provide funding**, not only to replace the displaced facilities, houses and infrastructure but also **for risk management institutions to intervene in recovery programs** through assessments, implementation of mitigation solutions, undertaking capacity building of stakeholders etc.

The facts given above summarize some of the needs that should be incorporated in future urban risk management programs in Asia. It also emphasizes on role of urban risk management practitioners for meeting the demand for risk management in urban areas.

