REDUCING URBAN RISK IN ASIA

Status Report and Inventory of Initiatives

Reducing Urban Risk In Asia: Status Report and Inventory of Initiatives

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About the Organizations

Kyoto University

IEDM Laboratory of Kyoto University Graduate School of Global Environment Studies targets to reduce the gap between Knowledge and practice through pro-active field level, community based project implementation in the field of environment and disaster risk management. Key research areas are: climate change adaptation, urban risk reduction, environment and disaster education. GCOE program of Kyoto University targets education and research excellence on Human Security Engineering in Asian Megacities, with focus to city governance, infrastructure management, health risk management and disaster risk management.

UNISDR

The United Nations International Strategy for Disaster Reduction Secretariat (UNISDR) is the focal point within the UN system on disaster risk reduction, and promotes and advocates for commitment and resources to disaster risk reduction. UNISDR had opened its new office "UNISDR Hyogo Office" in October 2007, in Kobe, Japan. One of its objectives is to work more closely with various institutions based in Japan which have accumulated experience and expertise in disaster risk reduction. UNISDR Hyogo Office aims at stimulating collaborative activities on DRR to further implement the Hyogo Framework for Action, with and among Governments and institutions working on disaster risk reduction, in particular North East Asia, including Japan.

RTF-URR

Asia Regional Task Force on Urban Risk Reduction was established in January 2008 to facilitate interactions and collaboration among different stakeholders in the region as regional thematic initiative within ISDR system. The goal of the task force is to enhance decisive actions to reduce risk and increase community resilience in the urban areas in the Asian region. The task force, coordinated by UNISDR Hyogo Office, conducts policy advocacy, knowledge management, and promotes synergy and cooperation of related initiatives.

SEEDS

SEEDS is a non-profit voluntary organization working to make vulnerable communities resilient to disasters. SEEDS adopts a multi hazard locally based approach seeking to empower communities through awareness, training and education. Founded in 1994, by a group of students and pedagogues of the School of Planning and Architecture, New Delhi, SEEDS comprises young professionals drawn from various development related fields. It is governed and advised by a board of eminent academicians and practitioners from international organizations.

Executive Summary

The pace of urbanization in the developing world is led by Asia. Urbanization is increasingly located in the developing countries: in 1970s, 50% of urban residents lived in developing countries, whereas it is increased to 66% in 1990s, and is projected to be 80% by 2020.

The "Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and communities to disasters" (HFA) was adopted at the World Conference on Disaster Reduction (January 2005, Kobe, Japan). The HFA specifies that disaster risk is compounded by increasing vulnerabilities related to various elements including unplanned urbanization. Across the HFA, important elements on urban risk reduction are mentioned as one of crucial areas of work to implement the HFA. In particular incorporating disaster risk reduction into urban planning is specified to reduce the underlying risk factors (Priority 4).

Recognizing that there is a growing need to address the subject area of urban risk reduction with concerted and coordinated efforts among stakeholders, in particular in Asia, the UNISDR Hyogo Office together with close partners took an initiative to develop the Asia Regional Task Force on Urban Risk Reduction (RTF-URR) as a thematic group of the ISDR system in Asia to facilitate and accelerate efforts and actions for urban risk reduction.

To understand the current status and challenges in the area of urban risk reduction, RTF-URR took the initiative to compile an inventory of initiatives relevant to urban risk reduction. The inventoried cases have been categorized and analyzed on the lines of the five priorities of the Hyogo Framework for Action; 1) Making disaster risk reduction a priority, 2) Improving risk information and early warning, 3) Using knowledge and education to building a culture of safety and resilience, 4) Reducing the underlying risk factors, and 5) Strengthening preparedness for effective response.

Based on the initiative mapping exercise and analysis on urban risk issues in Asia, the Status Report and Inventory of Initiatives looks at the dimensions of urban risk with their causative factors and determinants, and at ways and means that have emerged through pilot interventions on addressing risk through innovative means such as community led disaster risk reduction initiatives.

The urban risk issue in Asia is being addressed by various institutions at different levels through regional programmes by regional entities, through national programmes by country governments, and through city-level and local level activities by community level entities. The Asia region is uniquely positioned to have a synergy of activities of UN, bilateral donors, governments, and specific activities by civil society organizations and academic institutions. Urban risk reduction in Asia needs a balanced mix of policy implementation, regulatory measures and education-awareness programs through community based approaches.

UNISDR is going to launch its next global DRR campaign 2010-2011 focusing on urban risk reduction. The global campaign should aim at creating an enabling environment of risk reduction in urban areas and enhancing the resilience of people and communities. The RTF-URR is committed to serve as the advocacy vehicle to advance the concerted efforts to address the challenges in urban risk reduction in Asia.

This publication is produced as the concerted efforts under the Asia Regional Task Force on Urban Risk Reduction. Contribution from RTF-URR members and other partner organizations which shared their relevant initiatives are highly acknowledged.

Introduction

Context

In the year 1800 only two percent of the world population was urbanized. By 1950, thirty percent of the world population had urbanized. In 2000 the figure had risen to forty seven percent. More than half of the world population lives in urban areas now, in 2008. Urbanization is increasingly located in the developing countries: in the 1970s fifty percent of the world's urban residents lived in developing countries; the figure increased to sixty six percent in the 1990s, and is projected to be as high as eighty percent by 2020.

In the year 1950, New York City was the only city with a population of over 10 million persons. By 2015, it is expected that there will be 22 cities with populations over 10 million. Of these, 17 will be in developing countries, 13 of them in the Asia-Pacific region[1]. Asia's urbanization trend, its disaster events, and numbers of people exposed to risk are all growing rapidly.

Most of the urban dwellers in Asia's bustling cities live in sub-standard conditions. The economic imperative drives them to live in areas earlier left uninhabited as they were too unsafe to live in.

Slums and squatters can be seen sprawling the drain-banks, river-beds, low-lying marshy lands, steep slopes and other hazardous

locations in Mumbai, Jakarta, Dhaka, Katmandu, Manila, Bangkok and most other Asian cities. Their numbers are only growing, and much faster than the supply of livable spaces. This trend manifests in the increasing numbers and impacts of disasters, both in the form of shocks, i.e. rapid onset, high impact events, and stresses, i.e. day-to-day small scale but widespread difficulties.

Urban disasters vary considerably compared to their rural counterparts. They are not only represented by one-off events like earthquake or cyclones but also get exaggerated due to high population concentrations and hindrances in accessing basic services. The pace of urbanization in the developing world is led by Asia, and so is the prevalence of urban risk. A majority of Asia's urban growth will be in seven developing countries: Bangladesh, China, India, Indonesia, Pakistan, Philippines and Vietnam[2]. These will also inevitably emerge as hubs of urban risk.

INTRODUCTION

STATUS OF URBAN RISK IN ASIA   HFA AND URBAN RISK REDUCTION   INVENTORY OF URBAN RISK REDUCTION INITIATIVES IN ASIA   WAY FORWARD

ISDR Asia Regional Task Force on Urban Risk Reduction

Recognizing that there is a growing need to address the subject of urban risk reduction (URR) with concerted and coordinated efforts among stakeholders, in particular in the Asia region that is urbanizing at a dramatic pace, the UNISDR Hyogo Office together with close partners took an initiative to establish the Asia Regional Task Force on Urban Risk Reduction as a thematic group of the ISDR system in Asia to facilitate and accelerate efforts and actions for urban risk reduction. The Asia Regional Task Force (RTF) on Urban Risk Reduction was established in a meeting in Kobe, Japan, in January 2008. The RTF is represented by 16[3] member organizations and is expected to expand further. The RTF aims at strengthening the linkages of the community of urban planners, architects and engineers who are engaged in shaping the future of urban growth to ensure that disaster risk reduction is incorporated in urban development planning as well as future urban development trends are incorporated in disaster risk reduction strategies. The goal of the RTF is to enhance decisive actions to reduce risk and increase community resilience in the urban areas of the Asian region, with specific objectives such as acting as an advocacy vehicle to major urban

policy bodies, providing a platform for collective information and knowledge development and sharing, and facilitating interactions and cooperation among related organizations and stakeholders.

As part of its work, the RTF undertook the task of producing a regional status report on Urban Risk Reduction in Asia, and an inventory of urban risk reduction practices from the Asian region.

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1 Urban Environmental Governance, for Sustainable Development in Asia and the Pacific:
a Regional Overview. UN-ESCAP. UN Publication: 2005
2 ADB Urban Report 2003
3 ADPC, ADRC, CITYNET, EMI, IRP Secretariat, JICA, Kobe University, Kyoto University, NSET, SEEDS, UNCRD, UNEP, UN-HABITAT, UNISDR, UNU and WHO

STATUS OF URBAN RISK IN ASIA

To understand urban risk in Asia, and its impacts on the local environment, it may be appropriate to deconstruct the underlying factors making urban risk more critical than any other related to the built environment. These factors may be analyzed under the following heads (Surjan and Shaw, 20094) :

Urban population
Urban setting and urban planning
Urban structures
Compact urban forms
Urban dependence on rural areas
Urban primacy

Urban informal settlements
Urban economic imbalances
Urban services
Urban environment
Urban management

The status report looks at the dimensions of urban risk, with their causative factors and determinants, and at ways and means that have emerged through pilot interventions on addressing risk through innovative means such as community led disaster risk reduction (DRR) initiatives.

Explosion of urban population in Asia

At the world level, the 20th century saw an increase from 220 million urbanites in 1900 to 2.84 billion in 2000. The present century will match this absolute increase in about four decades. Developing regions as a whole will account for 93 per cent of this growth, Asia and Africa for over 80 per cent. Between 2000 and 2030, Asia's urban population will increase from 1.36 billion to 2.64 billion, Africa's from 294 million to 742 million, and that of Latin America and the Caribbean from 394 million to 609 million. As a result of these shifts, developing countries will have 80 per cent of the world's urban population in 2030. By then, Africa and Asia will include almost seven out of every ten urban inhabitants in the world[5].

By 2050, Asia will host 63 per cent of the global urban population, or 3.3 billion people. In Asia, the urban transition will occur even earlier than Africa, owing to rapid urban growth rates in China, a country that is expected to be 70 per cent urban by 2050. Urban growth rates in India will be slower; by 2050, 55 per cent of its population, or 900 million people, will live in cities[6].

Experience of Urban Disasters and the Emerging Risk in Asia

An earthquake striking a metro city, large scale inundation of dense urban population, or the wiping out of a coastal city due to storm surge or cyclone are parts of serious simulation exercises. The indications from the region's history of disasters are a grim reminder of what could be in store. The catastrophic flooding of Mumbai in 2005 took the city by surprise, both on account of the unprecedented amount of rainfall in record time, and the lack of preparedness of the civic infrastructure and emergency systems to manage the disaster.

Cities are highly vulnerable to disasters induced by natural hazards. Sudden supply shortages, heavy environmental burdens or major catastrophes can quickly lead to serious emergencies. The consequences of such crises are multiplied by poorly coordinated administration and planning.

Disasters induced by natural hazards have become more frequent and more severe during the last two decades, affecting a number of large cities. The United Nations Environment Programme (UNEP) reports that, between 1980 and 2000, 75 per cent of the world's total population lived in areas affected by a disaster. In 1999, there were over 700 major disasters, causing more than US$ 100 billion in economic losses and thousands of victims. Over 90 per cent of losses in human life from disasters around the world occurred in poor countries.

The impacts of Global Environmental Change (GEC), particularly climate-related hazards, disproportionately

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4 Surjan A. and Shaw R. (2009): Urban risk and disaster risk reduction. In: Disaster Management: Global challenges and local solutions, Shaw R. and Krishnamurthy R. eds., University Press

5 (UNFPA 2007) pp7-8 (http://www.unfpa.org/swp/2007/presskit/pdf/sowp2007_eng.pdf)

6 (UNHABITAT 2008) p.1 (http://www.unhabitat.org/downloads/docs/presskitsowc2008/regional%20updates%20Asia.pdf)

Urban population [million]

5 - < 8 million
8 - < 10 million
≥ 10 million

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Source: UN 2002
Draft and Copyright: F. Kraas
Cartography: R. Spohner
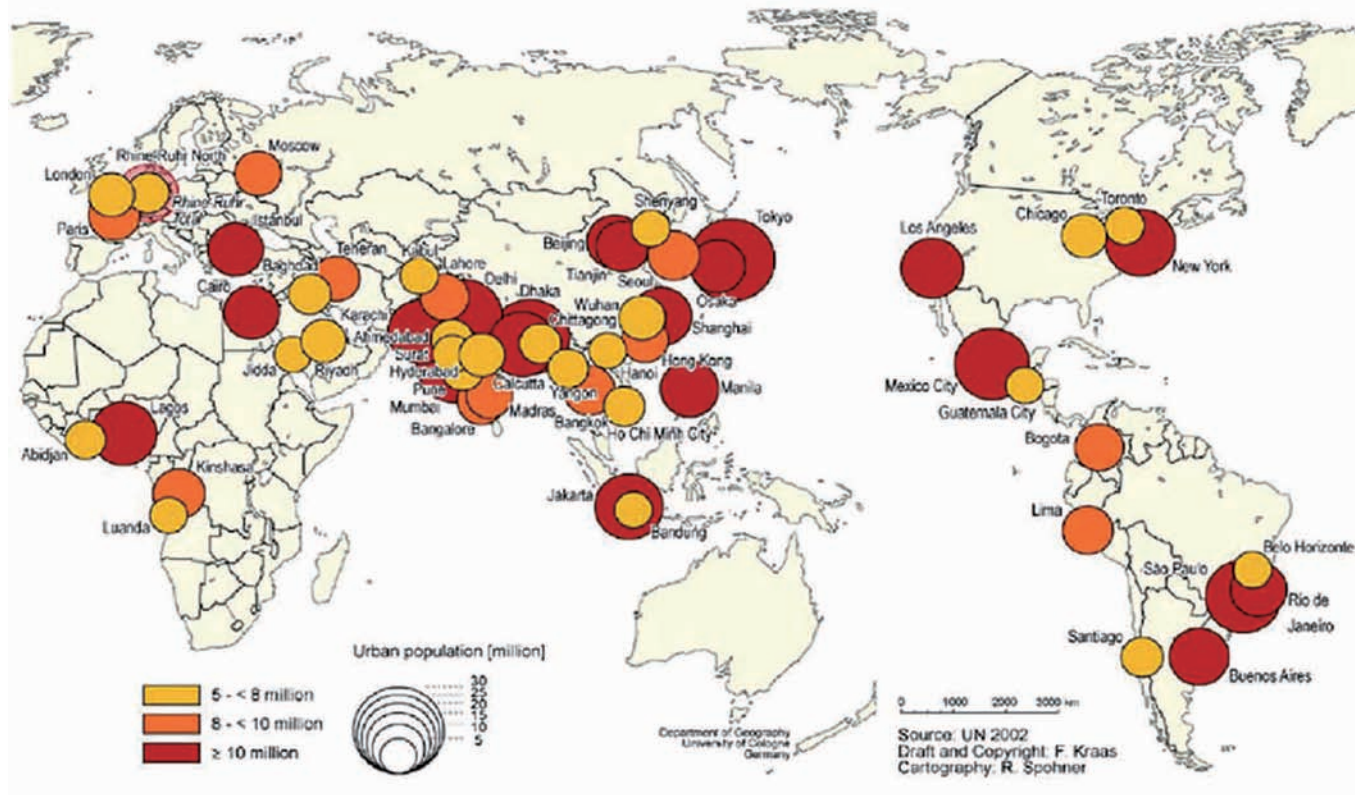
affect poor and vulnerable people—those who live in slum and squatter settlements on steep hillsides, in poorly drained areas, or in low-lying coastal zones. Until recently, intensity and frequency patterns of natural hazards followed natural variations in global temperatures and tectonic activity. Today, while the scale of seismic and volcanic activity reflects these long time-scale variations, it appears that frequency and intensity of hydro-meteorological hazards is being affected by a changing climate.

Although it is very difficult to show scientific evidence of these changes, projections for the future invite concern, as shown by the findings of the Intergovernmental Panel on Climate Change (IPCC). In some ways, societies are not only responsible for their own socio-economic vulnerability, but also are increasingly responsible for shaping new trends in hazard occurrence[7] .

Shocks and Stresses

Risks, particularly when viewed from a developmental perspective, can be viewed the probability of shocks and stresses affecting people, or in a more focused way, households. The Household Livelihoods Security model has taken the approach of linking households, livelihoods, access to resources, basic needs and building of assets to the capacity of a household for dealing with shocks and stresses . The same model, when viewed in the light of climate change, can be interpreted in terms of shrinking resource base, stronger barriers in accessing resources, greater

struggles for meeting basic needs, diminished assets, and increased exposure to the risk of shocks and stresses.

Shocks, in this approach, are the low probability but rapid onset and high impact events that cause immediate and visible damage to lives, property and environment. These include earthquakes, cyclones, tsunamis, flash floods, fires and accidents. Stresses, on the other hand, are slow onset and low impact processes that are of high probability, particularly in the context of the urban poor, and case a day-to-day continuum of hardships. Stresses include loss of livelihood due to waterlogging and disease, small scale building damage due to rains, chronic illnesses related to poor public health, social conflicts and tensions within small communities, environmental degradation, pollution, and other such local small scale adverse conditions.

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7 "Living with Risk: A global review of disaster reduction initiatives, 2004 version" (ISDR 2004), Chapter 2.2 Emerging trends in hazards, vulnerability patterns and the impact of disasters, p. 47

8 Sanderson, D, Cities, Disasters and Livelihoods, in Environment and Urbanization, Vol 12, No 2, Oct 2000, P 93 – 102

HFA AND URBAN RISK REDUCTION

The "Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and communities to disasters" (HFA) was adopted at the World Conference on Disaster Reduction (January 2005, Kobe, Japan). The Hyogo Framework for Action (HFA) specifies that disaster risk is compounded by increasing vulnerabilities related to various elements including unplanned urbanization.

Five priorities of the HFA are; 1) Making disaster risk reduction a priority, 2) Improving risk information and early warning, 3) Using knowledge and education to building a culture of safety and resilience, 4) Reducing the underlying risk factors, and 5) Strengthening preparedness for effective response.

(1) HFA Priority 1: Making Disaster Risk Reduction a Priority

HFA Priority Action 1 focuses on ensuring that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

Urban Risk Reduction within National and Local Policies and Techno-Legal Framework

There are many practical ways to reduce the risk of disasters. Ways to reduce climate related disaster risk include :

1. Careful assessment of areas where hazards and socioeconomic vulnerability combine to produce the greatest risks;

2. Public education to help people avoid areas of risk, protect their communities, and know what to do when disaster threatens;

3. Building codes tailored to local conditions to ensure resistance to storms;

4. Good land use management and flood controls to reduce the levels of flooding in settlements;

5. Early warning systems that provide all people with meaningful information, and well-organized public services with the mandate to reduce disaster risks.

Disaster risk reduction is critically important for adapting to changing climate as climate change will increase frequency and intensity of climate related hazards.

Urban management occupies an important place in the disaster management policy framework as the dense populations and the migrant poor and the under-privileged are highly affected on account of calamities/disasters. The techno-legal regime of a nation has direct implications on the disaster management framework. In India, the approach has

been translated into a national disaster framework covering institutional mechanism, disaster prevention strategy, early warning systems, disaster mitigation preparedness and response including human resource development. Disaster prevention is defined to encompass activities designed to provide permanent protection from disasters; which will include engineering and other physical protective measures, and also legislative measures controlling land use and urban planning .

The goals of prevention are:
(a) to ensure that all new buildings are designed and constructed with proper engineering intervention taking due care for safety against natural hazards in urban as well as in rural areas so that no unsafe buildings are added to the huge existing stock of unsafe buildings;
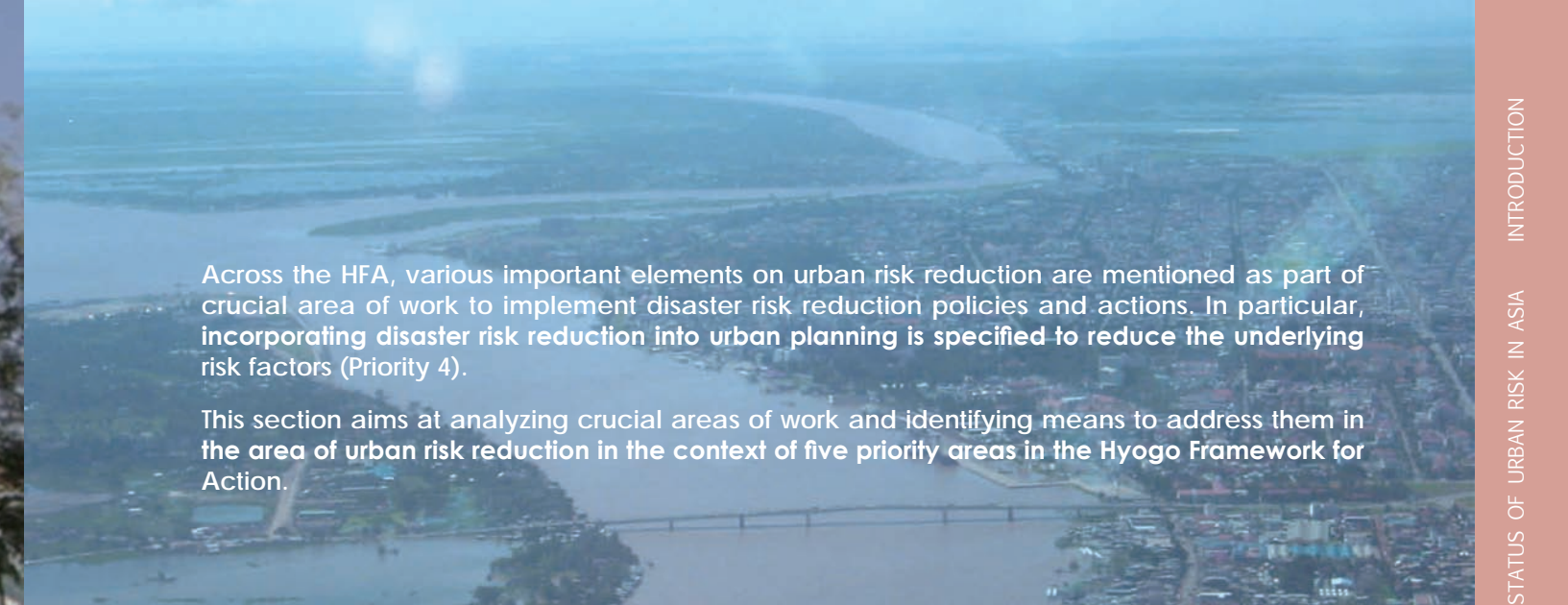
(b) to ensure upgrading the safety of buildings in the public sector by retrofitting techniques and encourage similar action regarding buildings in the private sector and individually owned houses.
National standards/codes on disaster resistant structures including the National Building Code of the country are of highest standards in technical contents. However, to make their use mandatory, proper enabling provisions are required in the legal framework.

Laws pertaining to planning, development and building construction are very important to achieve planned and safe development in urban and rural areas. Building standards/regulations are derived from various laws pertaining to planning and development of different states. They provide the mandatory techno-legal framework for regulating

Across the HFA, various important elements on urban risk reduction are mentioned as part of crucial area of work to implement disaster risk reduction policies and actions. In particular, incorporating disaster risk reduction into urban planning is specified to reduce the underlying risk factors (Priority 4).

This section aims at analyzing crucial areas of work and identifying means to address them in the area of urban risk reduction in the context of five priority areas in the Hyogo Framework for Action.

building activity from planning, design to completion of construction. While many Asian countries already have, or are in the process of developing acts, policies, institutional frameworks and plans in the area of disaster management, many of these are still to get translated to real action and change on the ground. Implementation needs to follow institutionalization, and will finally determine the success of otherwise sound frameworks.

Institutional Basis for Implementation

Institutionalizing community based disaster risk management (CBDRM) is a multi-sector, multi-level and participatory process based on agreed values leading to permanence, regularization, and sustainability through integration into the socio-economic development processes .

From the perspective of community groups and organizations, 'institutionalization' is a state in which their roles are recognized by the government, their efforts are supported, and the roles and functions of various stakeholders are defined.

In different organizational and cultural contexts the process is referred to by different names. These include: institutionalize, mainstream, scale-up, normalize, legitimize, integrate, adopt, replicate or sustain. Institutionalization of CBDRM is required to:
·Achieve the vision of disaster-resilient communities.
·Scale-up the impact (more people, more

communities, more risks addressed).
· Enhance learning (more stakeholders, more cases, more lessons).
· Sustain the gains (more structural, more permanent improvements).
· Recognize that strategic success lies in the hands of people in communities.
· Position CBDRM as a viable approach to sustainable development.
· Mobilize partner resources for disaster risk management

While Asian countries show evidence of the initiation of DRR mainstreaming, it is so far restricted to few sectors, and limited extent. Much of this has been on the international agenda in the form of DRR mainstreaming and Urban Risk Reduction mainstreaming efforts. The levels of mainstreaming achieved so far, however, are short of desirable levels, particularly due to the inter-sectoral complexities involved therein. Mainstreaming of urban risk reduction in a country involves ministries and departments such as urban affairs, housing, water resources, environment, transport, home/internal affairs, power, communications, municipal governance etc., making it a comprehensive and elaborate task to ensure inter-agency coordination. While DRR mainstreaming in many of these related sectors is sluggish, mainstreaming in the core urban planning and management sectors is lagging in particular.

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9 "Reducing risks of disaster posed by climate change" (ISDR 2007). United Nations Joint Press Kit for Bali Climate Change Conference 3-14 December 2007. (http://www.un.org/climatechange/pdfs/bali/isdr-bali07-20.pdf)
10   Ministry of Home Affairs, National Disaster Management Division & Building Materials & Technology Promotion Council, Ministry of Housing & Urban Poverty Alleviation, Government of India (bmtpc.org/pubs/unpriced_pub_contents/Building Techno-Legal Regime.pdf).
11   Building Disaster Risk Reduction in Asia (ADPC 2004) p. 9. (www.adpc.net/infores/kobe.pdf)

(2) HFA Priority 2: Improving Risk Information and Early Warning

Assessment and Monitoring of Risks

Risk assessments include detailed quantitative and qualitative understanding of risk, its physical, social, economic and environmental factors and consequences. It is a necessary first step for any serious consideration of disaster reduction strategies. Its relevance for planning and development of disaster risk reduction strategies was explicitly addressed during the United Nations International Decade for Natural Disaster Reduction (IDNDR 1990-1999). "In the year 2000, all countries, as part of their plans 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."

This was also outlined in Principle 1 of the 1994 Yokohama Strategy and Plan of Action for a Safer World. "Risk assessment is a required step for the adoption of adequate and successful disaster reduction policies and measures". This approach was carried forward by HFA. HFA Priority Action 2 focuses on assessment of risks and talks of identifying, assessing and monitoring risks.

Assessment and understanding of urban risk in Asia is still in early stages. It is not a priority issue for urban authorities yet, and does not figure on the agendas of urban planning, management or emergency response agencies. There have been cases of academic research on this subject, but that too is limited to in extent of coverage and depth of content.

Risk assessment encompasses the systematic use of available information to determine the likelihood of certain events occurring and the magnitude of their possible consequences. As a process, it is generally agreed that it includes[12] :

· identifying the nature, location, intensity and probability of a threat;
· determining the existence and degree of vulnerabilities and exposure to those threats;
· identifying the capacities and resources available to address or manage threats; and
· determining acceptable levels of risk.

Key dimensions of hazard assessments are the presentation of the results and assuring the understanding of the added value of hazard mapping and awareness by policy makers. Maps can be prepared manually using standard cartographic techniques or electronically with GIS[13]. This, and other means, constitutes Risk Communication, which is an integral part of effective risk assessment. This is particularly true for Asian countries wherein the impact of disasters is felt most by the poor, who are often impacted because of the fact that they remain left out of many communication and warning dissemination nets. As a result, there are numerous cases of disasters hitting communities hard because the risk was not assessed or communicated at the community level.

Early Warning

Effective early warning requires the below important components.

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12 Living with Risk: A global review of disaster reduction initiatives, 2004 version (ISDR 2004), Chapter 2.3 Risk Assessment, p. 63 (http://www.unisdr.org/eng/about_isdr/bd-lwr-2004-eng.htm)
13 Living with Risk: A global review of disaster reduction initiatives, 2004 version (ISDR 2004), Chapter 2.3 Risk Assessment, p. 66

· Risk Knowledge: Risks arise from both the hazards and the vulnerabilities that are present. What are the patterns and trends in these factors? Risk assessment and mapping will help to set priorities among early warning system needs and to guide preparations for response and disaster prevention activities. Risk assessment could be based on historic experience and human, social, economic and environmental vulnerabilities[14].

· Warning Service: A sound scientific basis for predicting potentially catastrophic events is required. Constant monitoring of possible disaster precursors is necessary to generate accurate warnings on time. Approaches that address many hazards and involve various monitoring agencies are most effective.

· Communication and Dissemination: Clear understandable warnings must reach those at risk. For people to understand the warnings they must contain clear, useful information that enables proper responses. Regional, national and community level communication channels must be identified in advance and one authoritative voice established.

· Response Capability: It is essential thatcommunities understand their risks; they must respect the warning service and should know how to react. Building up a prepared community requires the participation of formal and informal education sectors, addressing the broader concept of risk and vulnerability[15].

A global survey of early warning systems was undertaken by the United Nations Secretary-General, pursuant to the request of the General Assembly in its resolution 61/198, with a view to advancing the development of global early warning system capacities for all natural hazards[16]. The report on the survey was finalized in September 2006. It concluded that while some warning systems were well advanced, there were numerous gaps and shortcomings, especially in developing countries and in terms of effectively reaching and serving the needs of those at risk. The survey report recommended the development of a globally comprehensive early warning system, rooted in existing early warning systems and capacities. It also proposed a set of specific actions towards building national people-centred early warning systems, filling in the main gaps in global early warning capacities, strengthening the scientific and data foundations for early warning and developing the institutional foundations for a global early warning system. The present report, submitted in response to resolution 61/198, outlines the survey process and its conclusions and makes recommendations for follow-up actions by Member States and the United Nations system.

Despite the focus and understanding on the need for effective early warning formulation and dissemination, this has remained one of the biggest challenges in Asia, leading to repeats of disasters that could have been avoided through warning systems. Cyclone Nargis, that hit Myanmar in 2008, is one of the most recent examples of a well formulated forecast that failed to reach the target community in time, and led to huge loss of lives and property.

The Early Warning Conferences (EWC) at Potsdam in

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14 Early Warning Systems in the context of Disaster Risk Management (UNU & ISDR 2006) (http://www.unisdr.org/ppew/info-resources/basic-documents.htm)
15 Early Warning Systems in the context of Disaster Risk Management (UNU & ISDR 2006) (http://www.unisdr.org/ppew/info-resources/basic-documents.htm)
16 "Global Survey of Early Warning Systems" (ISDR 2007) (http://www.unisdr.org/ppew/info-resources/basic-documents.htm)

(3) HFA Priority 3:
Using Knowledge and Education to Building a Culture of Safety and Resilience

1998 and Bonn in 2003 highlighted the gap between urban vulnerabilities and warning dissemination systems in Asia. As cities are growing, additional populations are settling in areas that were earlier left unoccupied due to their high hazard exposure. As a result, there is a proliferation of slums and squatters along river-beds, drains, low-lying lands, steep slopes and busy traffic routes. As much as four fifths of the urban population in some cities is living in sub-standard housing and poorly organised and developed colonies. Not only are they more prone to disasters, but their coverage in the early warning net is particularly poor as they are outside the formal outreach of warning systems due to their illegal or quasi-legal status.

One of the cases covered by the Early Warning Conference was of Delhi, where slums inside the Yamuna river-bed, on the wrong side of the embankments, are exposed to frequent floods but get very inadequate and sketchy warnings despite an elaborate forecast formulation system at the city, national and regional level. While satellite based forecasting, a national network of rain-gauge and river level monitoring system, and an established flood control system are administered by the government, the slums in the river bed are not connected due to the missing 'last mile' of communication. The same phenomenon is observed in other cities in the region, including Dhaka, Bangkok, Manila and Kuala Lumpur.

In line with HFA Priority 3, the application of knowledge and innovation for risk reduction in urban context is a very important field. It is, however, still emerging as a comprehensive and viable subject, and has to catch up with the ever-increasing demands imposed by rapid increase in urban risk dimensions and magnitude that accompany growth trends and climate change. A number of initiatives have been taken up in the Asian region over the past decade on the creation and dissemination of risk knowledge. These pilots show the way forward for a knowledge-based approach to urban development, and the mainstreaming of risk reduction in the development processes. The relevance of participatory approaches in the planning, development, management and monitoring of development and risk reduction processes in the urban sector is a critical factor that emerges across the regional initiatives. The use of indigenous knowledge in conjunction with appropriate technologies offers viable options for risk reduction along with climate change adaptation.

Priority emphasis must be given to education as an essential part of disaster reduction strategies. Education is a crucial means within local communities around the world to communicate, to motivate, and to engage, as much as it is to teach. Awareness about risks and dangers needs to start in early education before abilities to address them can become part of growing civic and professional responsibilities as people mature. The various dimensions of disaster risk within a community can be addressed and continuously reinforced, passed between generations, through formal educational programmes and professional training.

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17 Living with Risk: A global review of disaster reduction initiatives, 2004 version (ISDR 2004), Chapter 4.3 Education and Training, p. 236

(4) HFA Priority 4:
Reducing the Underlying Risk Factors

People's understanding and the exercise of their professional skills are essential components of any risk reduction strategy. An investment in human resources and increasing individual capabilities across generations are likely to have more lasting value than any specific investments made in technical measures to reduce risks.

The following aspects of risk reduction education are critical for such purposes[17] :

· basic role of education and training;
· primary and secondary schooling;
· disaster and risk management training centres;
· academic and educational programmes;
· professional trades and skills training; and
· capacity-building.

DRR education is one area that has emerged as a leading area of recent action in Asia. There have been cases of school safety work, inclusion of disaster management in school curriculum, inclusion of specific relevant aspects of DRR in the curriculum of various streams of higher education, informal education and IEC materials for public education have emerged from various countries, and many of these target urban audiences. The Asian Urban Disaster Mitigation Programme of Asia Disaster Preparedness Center (ADPC), the Urban Earthquake Vulnerability Reduction Programme of UNDP and Government of India, the School Earthquake Safety Programme of NSET Nepal, the School to Community Safety Programme of SEEDS, public education works of Bangladesh Disaster Preparedness Centre, community DRR programmes of Practical Action and many other such programmes have proved the viability of the approach and set benchmarks for countries to follow.

It is crucial to integrate disaster risk reduction in key sectors in urban development and planning, as vulnerability to natural hazards is increased in many ways in the process of development. Sustainability and climate change adaptation is one of the key areas to which urban planners need to pay their attention.

Sustainability Issues and Climate Change:
Climate change and its ramifications on urban processes cover a wide spectrum. Climate-related disasters are increasing in frequency and magnitude. Their consequences will depend on a number of factors, including the resilience and vulnerability of people and places.

Climate conditions have always shaped the built environment. Since the 1950s, however, traditional patterns adapted to local climatic conditions have been increasingly abandoned18. Globalization and rapid technological developments tend to promote homogenized architectural and urban design, regardless of natural conditions. With this cookie-cutter architecture comes increased energy consumption from the transportation of exogenous materials and from the utilization of a single building design in a variety of environments and climatic conditions without regard to its energy efficiency. In some places, energy is too cheap to motivate energy-efficient design; in other cases, developers ignore the costs, since sale prices do not reflect the future savings from higher energy efficiency.

Human health in urban areas may suffer as a result of climate change, especially in poor urban areas whose inhabitants are least able to adapt. They already suffer from a variety of problems associated

18 "State of World Population 2007" (UNFPA 2007), Chapter 5 Cities and Climate Change
    (http://www.unfpa.org/swp/2007/english/chapter_5/climate_change.html)

(5) HFA Priority 5: Strengthening Preparedness for Effective Response

with poverty and inequity. Climate change will aggravate these. For example, poor areas that lack health and other services, combined with crowded living conditions, poor water supply and inadequate sanitation, are ideal for spreading respiratory and intestinal conditions, and for breeding mosquitoes and other vectors of tropical diseases such as malaria, dengue and yellow fever. Changes in temperature and precipitation can spread disease in previously unaffected areas and encourage it in areas already affected. Changes in climate and the water cycle could affect water supply, water distribution and water quality in urban areas, with important consequences for water-borne diseases.

The work on climate and sustainability related risks in Asian cities is catching attention fast, but is still in its nascent stages in terms of development of methodologies, application across the region, and ownership of processes by governments. The Climate Disaster Resilience Initiative of Kyoto University and partners is a leading effort in this regard. The follow up of actions in response to initial knowledge generation, however, is an area that will need tremendous political commitment, resource allocation and action in coming times.

Preparedness for response is a focus area under Priority 5 of the HFA. Urban emergency response preparedness in Asia is an area that far lags minimum standards. The emergency response capacities of cities, both in the policing functions as well as fire fighting and specialized emergency response are very low despite the high levels of risk in these cities.

In addition to the low overall emergency response capacity, the capacity of Asian cities to respond to dynamic risks such as those of climate change impact, migration storms, and social stresses related to rapid growth, are also very low. This is largely due to the fact that the knowledge base, general awareness, and informed political will on these issues are very low.

A viable capacity in addition to high-end and technology based emergency management that has emerged through pilot initiatives in the region is of community based emergency response preparedness. In a project on Urban Risk Reduction in India, implemented by SEEDS in partnership with the Indian Institute of Public Administration an Oxford Brookes University under the DFID Knowledge and Risk

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19 Our experiments with community planning, SEEDS, 2007

programme, Risk Assessment was carried out in a squatter settlement in the Yamuna River Bed in Delhi, taking into account citizens' perceptions and expert views[19] . It comprised identification of inventories of vulnerabilities and capacities of institutions, communities and infrastructure; key hazards, risks and perceptions of risks by key actors, etc. Action Planning Exercises were subsequently conducted within the community. The technique was to combine the rapid development of action-oriented initiatives (in the form of a community action plan) with sustainable risk-reduction measures. The measures that were listed at the end of the workshop included physical improvement, strengthening of community structures and the identification of community led environmental improvement initiatives. Utilizing action planning ensured the involvement of all key actors in decision making: community members, government authorities and NGOs.

One of the major concerns that came out was of fire risk in the settlement. Through the workshop an action plan was prepared by the community and a task force was set up for fire safety. The Action Plan involved building local fire fighting capacity. A number of alternatives were explored, in collaboration with local authorities and the fire-fighting department. The task force, with support

from SEEDS, finally opted for a Community Fire Post, with independent water and power supply. The fire post was commissioned in October 2000.

The Community Fire Post was a first of its kind in the area. Not only was it a community led initiative in terms of planning and establishment of the facility, but it was also manned and maintained by a trained community task force. The local residents had pitched in for the construction work on the post, and held responsibility for its proper maintenance and use. There was a distinct sense of ownership and pride, and they were keen to establish a network of such fire posts to cover the entire settlement.

The settlement was later relocated out of the riverbed as part of the city's redevelopment scheme, and gained access to formal fire fighting services. The planning to action skill sets and the spirit, however, will remain with the community for long.

INVENTORY OF URBAN RISK REDUCTION INITIATIVES IN ASIA

(1) Urban Risk Reduction Initiative Compilation

Inventory of initiatives on urban risk reduction in Asia was produced to review and understand trends and demands, and identify gaps in the area of urban risk reduction activities by various stakeholders. The collection of the information from various stakeholders and its compilation aims at providing analysis and input to this thematic reporting exercise.

A questionnaire template was developed for the purpose of collecting concise information, in consultation with the RTF. The template was designed, and aimed to get basic information consistently across the various actors working on urban risk reduction. Information compiled through the template includes context, nature of risk addressed, mechanism, organizational systems, indicators of success, challenges, lessons learnt and human-interest stories. The template was disseminated mainly through the RTF and ISDR partner networks. Then, submitted initiatives were compiled and analyzed.

(2) Analysis on the Initiatives on Urban Risk Reduction

Over forty responses were received from across the region. The inventory covers cases from many of the vulnerable Asian countries, including Bangladesh, China, Japan, India, Indonesia, Malaysia, Nepal, Pakistan, Philippines, Republic of Korea, Singapore, Sri Lanka, Tajikistan and Vietnam. It also includes over a dozen cases that are multi-country in coverage. It covers activities such as capacity development, school and hospital safety and appropriate city development planning as initiated by a multitude of stakeholders.
The inventoried cases have been categorized and analyzed on the lines of the five priorities of the Hyogo Framework for Action; 1) Making disaster risk reduction a priority, 2) Improving risk information and early warning, 3) Building a culture of safety and resilience, 4) Reducing the risks in key sectors, and 5) Strengthening preparedness for response. The analysis summary of the collected initiatives is as follows:

HFA Priority 1. Making Disaster Risk Reduction a Priority

In order for making disaster risk reducation a priority, this category includes the following types of methodologies:

(1) Engaging in multi-stakeholder dialogue to establish the foundations for disaster risk reduction,
(2) Creating or strengthening mechanisms for systematic coordination for disaster risk reduction,
(3) Assessing and developing the institutional basis for disaster risk reduction, and
(4) Prioritizing disaster risk reduction and allocating appropriate resources.

This category can be described as the following key terms: participation and mutual learning, cluster composition, institutionalizing disaster reduction, and strengthening capacity on disaster management and disaster risk reduction.

As an example of a project for this category, a project on participatory environment and disaster management through and mutual learning can be cited. Setting its core concept as 'Water Environment', the project discusses the urban management from community perspective, and specifically focuses on water related environment and disaster issues in Kuala Lumpur (Malaysia), Saijo (Japan), and Danang (Vietnam). Through participatory learning process of the local communities (by town watching, community workshops, questionnaire survey, focus group discussion) and local governments, the project targets field-based actions as local level.

Good Practice "Mainstreaming Disaster Risk Reduction in Urban Planning and Management, Jordan by UNDP"
http://www.undp.org/cpr/we_do/disaster_global_urban.shtml

In 2006 the UNDP Country Office in Jordan signed a project agreement with the Government of Jordan to reduce disaster risk in Amman by establishing a disaster risk management process that would ultimately equip the municipality with a Disaster Risk Management Master Plan anchored in a sound institutional framework. This five-phase process involves the communities and their governing bodies in disaster mitigation by enhancing their knowledge of the risk and the options for mitigating the risk, strengthening institutional capabilities, and developing a coalition of knowledgeable stakeholders whose collective contribution results in a safer community and environment.

The first phase supports the implementation of an effective disaster management practice at the municipality level and involves consultation with governmental and non-governmental organizations, and the establishment of arrangements to support disaster management at the national and local levels. The second phase will assess current disaster management practices in Jordan, and particularly how these practices address the threats to Amman. The third phase will undertake an earthquake risk analysis to develop an understanding of the potential human and material losses in the city and their implications on managing the risk to the city. The fourth phase will identify

institutional weaknesses and human resource needs, and develop programs to enhance local capacity and create a dynamic environment that supports the implementation of sound disaster management practices in Amman. The final phase will center on supporting the implementation of a framework to develop the city's disaster risk management master plan, analyzing the results of the disaster risk assessment and then working with the city policy-makers to identify priorities and establish a strategy for disaster risk reduction and a long-term implementation plan.

HFA Priority 2. Improving Risk Information and Early Warning

This category includes the following activity components:

(1) Establishing an initiative for countrywide risk assessments,

(2) Reviewing the availability of risk-related information and the capacities for data collection and use,

(3) Assessing capacities and strengthening early warning systems, and

(4) Developing communication and dissemination mechanisms for disaster risk information and early warning.

Refering to the inventoried case studies, all of the cases related to improving risk information and early warning system follow the steps (1) to (4) listed in this category. For the case of an early warning system project in Shanghai, China, it starts from establishing a multi-agency response platform on severe weather disaster; then it carries out hazard trend warning on weather and climate related disaster through monitoring; it proceeds to establishment of a multi-agency sharing database on a unified standard, but distributed accesses; and in the end it establishes a multi-agency response mechanism and and conducts experiment on community safety.

Good Practice: Community Based Early Warning System and Evacuation: Planning, Development and Testing – Protecting Peoples' Lives and Properties from Flood Risks in Dagupan City, Philippines

(ADPC safer cities 20: http://www.adpc.net/v2007/programs/uDRM/PROMISE/INFORMATION%20 RESOURCES/Safer%20Cities/Downloads/SaferCities20.pdf)

This case study of Dagupan City illustrates the significance of setting up and operationalizing an early warning system and evacuation plan for flood to draw people together in pursuit of collective action towards building safe and resilient communities. Communities in Dagupan City are no stranger to flooding, and for a long time have been resigned to the idea that it will reoccur, that there is not much that they can do. However, after undergoing sessions on community based disaster risk management (CBDRM) and engaging in participatory risk assessment sessions of their neighborhoods, several eye-opening concerns emerged. The community decided that they needed an

Evacuation Plan to be a guide for the whole community to coordinate their efforts, and an Early Warning System to ensure that there will be enough time for preparedness. The community was expected to generate and agree upon their warning signals, and have a focal person who will be obliged to give warning signals to community people when flooding strikes. Finally, in the event of an emergency, they should have a system that promotes the effective and efficient use of their own resources, such as assigning locally available vehicles to evacuate specific groups of high-risk households to known safe areas.

Good Practice: "Community Based Participatory Disaster Education" in Saijo, Japan

In Japan, there are a lot of small and medium sized cities. As many young people are leaving from local cities to bigger urban cities, aging in local cities affects disaster prevention. In case of a disaster, young people's help is essential.

Saijo city is located in the eastern part of Ehime prefecture (509.04 square kilo meters, with a population of 116,059 (2006.10). At the time of the typhoon no.21&23 in 2004, mountainous area of Saijo City was especially damaged. In the mountainous area, there live many elderly people and few young people. So some elderly people had difficulty in evacuating and needed help of young people.

Low awareness of disaster prevention is also a problem. Plain area is rather urban and there are many young people. There is often little relationship between mountainous area and town. It is important for community to work together on disaster reduction. So, it is necessary to make "disaster prevention network" between the plain area and the mountainous area, so as to help elderly people in the mountainous area in case of a disaster.

As the driftwood stuck with bridge pier caused flood to the plain area, disaster in the mountainous area have bearings with that in the plain area. Both residents have to know each other about the circumstances. Therefore, mountain watching is proposed to be implemented in Saijo City. Mountain watching is a kid of town watching conducted in the mountainous area. Main target is children, and also residents in the mountain, teachers, municipal officials and forest workers are involved. The working field is upper area of a river along school. Participants watch the site damaged by the typhoon in 2004 and hear the story from victims. They walk around the school zone and search for dangerous places, useful facilities in case of disasters and favorite places.

Town watching or mountain watching involves many stakeholders, such as pupils in elementary schools and junior high schools, teachers, parents, residents in mountains, forest worker, Citizens' Safety Dept. and Education Board. So, it provides a good opportunity to them to communicate with each other. In case of a disaster, such relationship is very important. Through town watching, participants get interested in the local area and also get knowledge about disaster prevention. But town/mountain watching should not end up with only one time event. Through a series of continuous actions, it will become better and develop disaster resilient area. So, clear implementing body and guideline is necessary for continuing town/mountain watching.

HFA Priority 3. Building a Culture of Safety and Resilience

The components for building a culture of safety and resilience include the following activities:

(1) Developing programmes to raise awareness of disaster risk reduction,
(2) Including disaster risk reduction in the education system and the research community's work,
(3) Developing disaster risk reduction training for key sectors, and
(4) Enhancing the compilation, dissemination and use of disaster risk reduction information.

This category can be represented by broad range of activities, including human resource development, school safety, disaster learning programme development, community-based disaster management, elaboration of disaster scenarios, disaster risk studies, and hazard mapping.

For example, there is a school safety project in India, which aims at developing a culture of disaster safety in schools with broad objectives of sensitization of students and teachers towards safety issues and making schools premises safe against impending disasters. Its methodology includes sensitization of teachers, students and parents, identification of hazards and vulnerabilities at school level, preparation of school disaster management plans, constitution of teams within the schools to carry out tasks on disaster management, and organization of regular mock drills.

Another interesting case on building a culture of safety and resilience can be done by the distance learning program on disaster risk management which is a series of online courses designed to develop a broader understanding of disaster risk management among local government decision makers, policy makers, city managers, administrators, and other key stakeholders.

HFA Priority 4. Reducing the Risks in Key Sectors

This category includes activities such as:

(1) Environment: Incorporating disaster risk reduction in environmental and natural resources management,
(2) Social needs: Establishing mechanisms for increasing resilience of the poor and most vulnerable,
(3) Physical planning: Establishing measures to incorporate disaster risk reduction in urban and land-use planning,
(4) Structures: Strengthening mechanisms for improved building safety and protection of critical facilities,
(5) Stimulating disaster risk reduction activities in production and service sectors,
(6) Financial/economic instruments: Creating opportunities for private-sector involvement in disaster risk reduction, and
(7) Disaster recovery: Developing a recovery planning process that incorporates disaster risk reduction.

From the inventory cases, the ones which were introduced as key sectors are the environment and climate change issues, health, construction, housing conditions, and infrastructure.

There is an project by WHO Kobe Centre which puts health at the heart of the climate change, expecting to promote research with Member States and appropriate UN organizations, other agencies and funding bodies for assessing the risks to human health from climate change and implementing effective response measures.

A project in Tajikistan aims at reducing vulnerabiity of the capital city residents to strong and catastrophic earthquakes through the implementation of building inventory and development of earthquake damage scenarios and action plans, targeting to benefit the total population of the city of Dushanbe. Special attention will be given to primary facilities, such as schools and hospitals.

Good Practice: "Community Empowerment and Disaster Risk Reduction" in Chittagong City, Bangladesh

(ADPC safer cities 21)
http://www.adpc.net/v2007/Programs/UDRM/PROMISE/INFORMATION%20
RESOURCES/Safer%20Cities/Downloads/SaferCities21.pdf)

To help a community face disaster is a challenge that requires empowerment. While relief funds and goods will always alleviate suffering, their effect is temporary. There is also a danger that a community will not learn to help itself. The experience in Chittagong of repeated heavy flooding could have been enough to make people feel helpless. However, the community empowerment approach for disaster management helped create a more proactive stance and attitude among the people. Community empowerment is a type of capacity development where its members decide on the goals and strategies for disaster risk management, contribute some (if not all) of the resources needed, and monitor their performance. Rather than outsiders managing a community's risk on their behalf, the members instead struggle to understand why they are at risk to flooding disasters, try to build consensus on the ways to reduce their risk, set priorities, and then participate in the measures needed to keep their risk low. Some of the inputs can come from outside donors, including the government.

However, the community members should realize that they must put in their own time and money, even to the point of sacrifice. This process of struggle is what strengthens community, facilitates first-hand learning and understanding about disaster risk management, and promotes confidence that they can help themselves through adversity.

Picture credit: PROMISE-Bangladesh

HFA Priority 5. Strengthening Preparedness for Response

This category includes activities such as:

(1) Developing a common understanding and activities in support of disaster preparedness,
(2) Assessing disaster preparedness capacities and mechanisms, and
(3) Strengthening planning and programming for disaster preparedness.

The activities for strengthening preparedness for response include public education, disaster risk management master planning, urban development planning, capacity enhancement, e-learning, disaster risk reduction training programmes, and disaster mitigation with multi-stakeholder involvement.

There is a case from Singapore which focuses on public education and community outreach programmes in order to engage and involve the population in preparing for emergencies through a multi-pronged approach targeted at different groups, such as the residential sector, the commercial and industrial workplace sector, and the school population.

In order to strengthen the preparedness for response, Kathmandu Risk-Sensitive Land Use Planning from aims to ensure that the detailed land use plan of the Kathmandu Metropolitan City (KMC) of Nepal effectively integrates disaster risk reduction within its spatial and physical development strategies including regulatory and non-regulatory planning tools, bylaws, regulations and procedures. Specifically, the Project aims to provide technical assistance to the Urban Development Department of KMC in terms of incorporating risk information and parameters in KMC's planning process and procedures.

Good Practice: "Risk-Sensitive Land Use Planning" and "Building a Competent Disaster Management Department" in Kathmandu

The Kathmandu Risk-Sensitive Land Use Planning is one of the two pilot applications of the Mainstreaming Disaster Risk Reduction in Megacities Project. It aims to mainstream disaster risk reduction in the development strategies and legislations of Kathmandu Metropolitan City (KMC) through the development of a risk-sensitive land-use plan, advocacy campaigns, policy formulation, inter-institutional coordination and strengthening of local institutions. The overall goal of the Project is to ensure that the detailed land use plan of the Kathmandu Metropolitan City (KMC) fully integrates disaster risk reduction within its spatial and physical development strategies including regulatory and non-regulatory planning tools, bylaws, regulations and procedures. Specifically, the Project aims to provide technical assistance to the Urban Development Department of KMC in terms of incorporating risk information and parameters in KMC's planning process and procedures.

Another project in Nepal entitled "Building a Competent Disaster Management Department at the Kathmandu Metropolitan City" aims to enhance the institutional capacities of the city government of Kathmandu in emergency and disaster management, and integrate it with the National Strategy for Disaster Risk Management. The first phase of the Project has focused on the assessment of the Emergency Management System of Kathmandu Metropolitan City (KMC) and the city's institutional training needs. Phase 2 addresses the creation of a competent and operational Disaster Risk Management and Citizen Safety (DRMCS) Section within the Urban Development Department of KMC. The Emergency Management component of the Cross-Cutting Capacity Development (3CD) Program aims to (1) enhance the institutional capacities of KMC in emergency and disaster management; (2) build a disaster management system at KMC, (3) build staff competency through specialized training, and (4) develop the city's Emergency Plan.

INVENTORY OF URBAN RISK REDUCTION INITIATIVES IN ASIA

Global

- Cluster Cities Project
- Mega-Learn: Megacity-specific eLearning Tools and Training Program
- World Bank Institute's Distance Learning Program

South West Asia

- Trainings on Safer Schools

Turkey

Uzbekistan

Tajikistan

Jordan

Iran

Pakistan

Bhutan

India

Nepal

Bangladesh
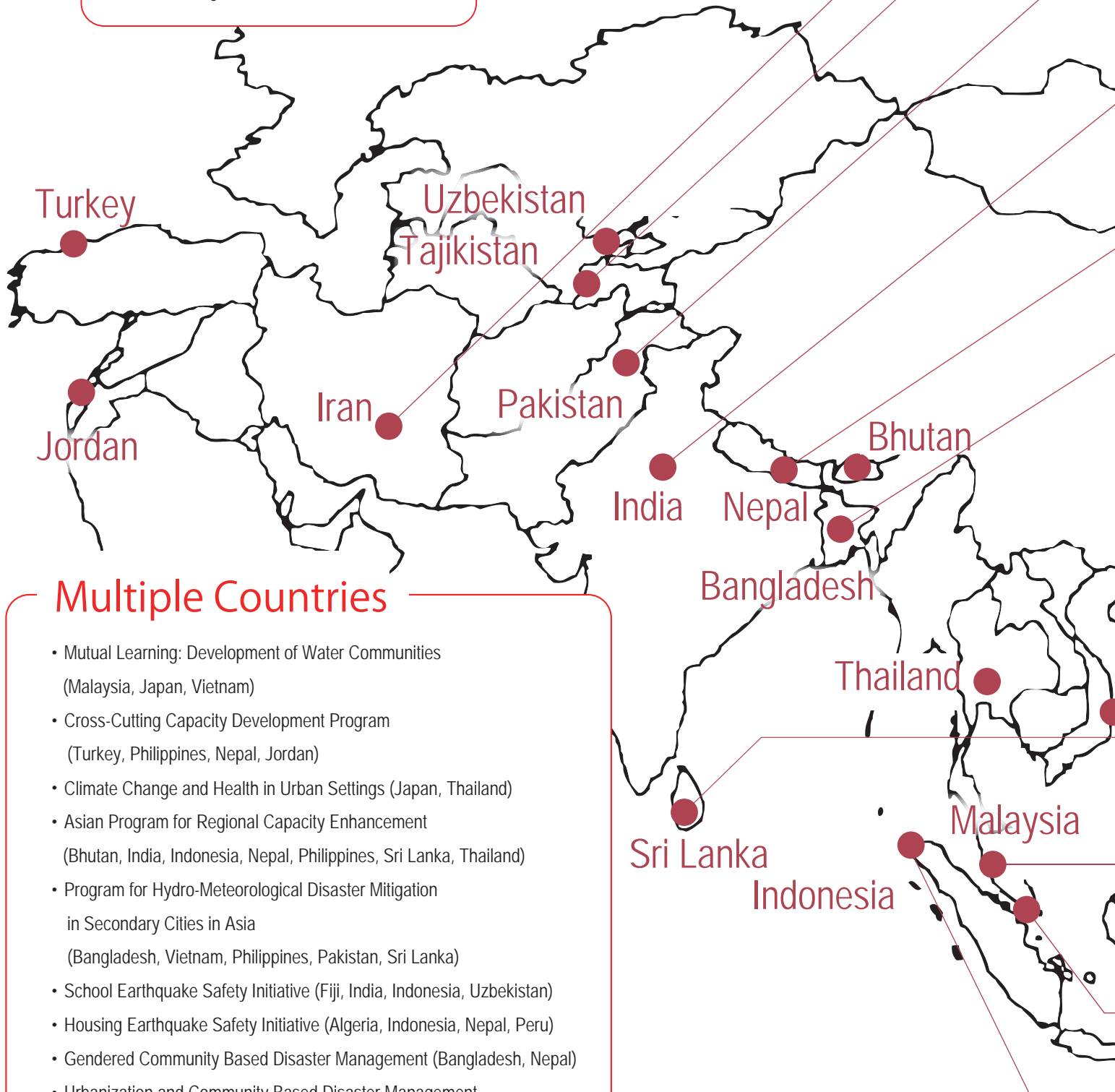
Thailand

Multiple Countries

- Mutual Learning: Development of Water Communities
  (Malaysia, Japan, Vietnam)
- Cross-Cutting Capacity Development Program
  (Turkey, Philippines, Nepal, Jordan)
- Climate Change and Health in Urban Settings (Japan, Thailand)
- Asian Program for Regional Capacity Enhancement
  (Bhutan, India, Indonesia, Nepal, Philippines, Sri Lanka, Thailand)
- Program for Hydro-Meteorological Disaster Mitigation
  in Secondary Cities in Asia
  (Bangladesh, Vietnam, Philippines, Pakistan, Sri Lanka)
- School Earthquake Safety Initiative (Fiji, India, Indonesia, Uzbekistan)
- Housing Earthquake Safety Initiative (Algeria, Indonesia, Nepal, Peru)
- Gendered Community Based Disaster Management (Bangladesh, Nepal)
- Urbanization and Community Based Disaster Management
  (Bangladesh, Nepal, Sri Lanka)

Sri Lanka

Malaysia

Indonesia

- Strengthening Capacities

- Seismic Risk Reduction

- Flood Forecasting & Early Warning System
- Improvement in the Flood Forecasting & Warning System
- Flood Risk Assessment Management

- Health & Hospital Safety
- School Safety Programmes
- Advance Locality Management

- Risk-Sensitive Land Use Planning
- Building a Competent Disaster Management Dept.

- Comprehensive Disaster Management Program

- Urban Disaster Risk Reduction Training Program

- Developing Human Resources
- Preparing health facilities

- Multi-hazard Early Warning System

- Risk-Sensitive Urban Development Planning
- School Hydrological Information Network
- Community Infrastructure in Urban Areas

- A simplified approach to elaborate a tsunami scenario
- Community Based Hazard Mapping

- Seismic and Tsunami Hazards and Risks Study
- Community Preparedness and Emergency Response
  Plan for Tsunami Disaster
- Land Use Planning Appraisal in National Urbanization Policy

- Regulatory Control of Hazardous Materials
- Holistic Approach to Disaster Risk management

- International Earthquake & Tsunami Workshop

Republic of Korea

China

Japan

Vietnam

Philippines

Singapore

INDONESIA

The Great Sumatra Tsunami Disaster of 26 December 2004 took more than 270,000 lives from the countries surrounding the Indian Ocean. An International Workshop "3rd International Sumatra Earthquake & Tsunami Workshop" was organised by Syiah Kuala University to review and discuss the recovery works and DRR efforts of tsunami affected countries. The goal of the program is that this first academic manifestation will become an annual event that would gather international attention on Banda Aceh & other tsunami affected countries, continue the rehabilitation work, and provide the mechanisms for knowledge sharing and learning from this disaster for many years to come. The Workshop also addressed the issue of preservation of data and information about the tsunami for present and future generations, and how to build competent local capacity to ensure that the legacy from this disaster is not lost.

MALAYSIA

Since the level of seismic risk in Malaysia was unknown, there was thus an urgent need to carry out a study to determine the level of seismic and tsunami risk in Malaysia and to determine whether seismic factors should be taken into account in planning and design decisions as well as the risk to tsunamis from the Indian Ocean and from the western Pacific Ocean needed to be ascertained. "Seismic and Tsunami Hazards and Risks Study in Malaysia" was taken up by the Academy of Sciences Malaysia to satisfy the needs through Mapping nationally and regionally, Installation of strong-motion accelerograph in a selected building in Putrajaya, FEM Computer modeling of selected infrastructures (bridges, dams, elevated highways and LRT, and tunnels), and Public Drill for tsunami evacuation.

After the study, surveys and focus group discussions of the community, local agencies and state agencies were conducted to gauge the awareness and preparedness level of the community, local and state agencies in facing tsunami through interfacing activities, seminars, workshops, public lectures, Friday sermons radio talk shows and printed materials in the program "Community Preparedness and Emergency Response Plan for Tsunami Disaster"

Another case from Malaysia is on "Land Use Planning Appraisal for Risk Areas in Malaysia National Urbanisation Policy" taken up by the Town and Country Planning Department, Ministry of Housing and Local Government, with the major goal of providing a systematic approach toward sustainable development by enhancing safe city planning initiatives; comprehensive safe city programmes; and enhanced public awareness programmes through a multi-sectorial approach.

PHILIPPINES

A project in Philippines "Makati Risk-Sensitive Urban Redevelopment Planning" has set its overall goal to transform a disaster-prone area in Makati to a safer and disaster-resilient neighborhood. This demonstration planning project implemented by Earthquakes and Megacities Initiative, German Committee for Disaster Reduction (DKKV), City Government of Makati, Metro Manila Development Authority (MMDA), and Philippine Institute of Volcanology and Seismology (PHIVOLCS), can be used as a model and replication in its other high-risk districts as well as in other cities of Metro Manila. Phase 1 of the project has set out the guidelines, risk profile, general planning principles and other preparatory work for the formulation of the redevelopment master plan while Phase 2 focuses on situational analysis, site selection and analysis and redevelopment planning.

School Hydrological Information Network (SHINE)" implemented by Provincial Government of Bulacan through its Provincial Disaster Management Office (PDMO) in coordination with the Pampanga River Flood Forecasting & Warning Center (PRFFWC) and Flood Forecasting Branch of PAGASA, is a program aiming at addressing the global warming issue, focusing on the awareness to hydtomet-related disasters. The activity is another way of supporting the Department of Education's thrust in its "climate change" enhanced curriculum, there is also that underlying principle that disaster awareness begins in schools.

"Community Infrastructure in Urban Areas - Creating Jobs" has been implemented in Philippines by ILO in collaboration with local government units and communities, and is now expanding activities to crisis affected urban areas and intends to develop a new Guide for local government units on enhancing disaster preparedness and risk reduction through the use of local-resource based work methods including employment-intensive works technology. Activities of the project will include the identification and scoping of selected disaster preparedness interventions in cyclone prone areas, the implementation of demonstration projects in collaboration with local agencies, the development of a Guide on using local resource-based methods to create employment and reduce poverty in a crisis response context and the training of local government units in scoping and implementing disaster preparedness and risk reduction projects through employment intensive methods. The demonstration projects which will be implemented to enhance disaster risk preparedness and reduce disaster risk will also generate "green jobs" and sustainable enterprises.

SINGAPORE

Two distinctive programmes are presented by the Singapore Civil Defense Force (SCDF). One of the programmes is entitled "Regulatory Control of Hazardous Materials (HazMat) in Singapore's land transportation landscape." This programme has been planned to defuse the threat of terrorist using hazardous materials through enhancing security regarding HazMat transportation by providing SCDF an overall picture of the movement of Hazmat transport vehicles in Singapore on a 24/7 basis.

Another programme from Singapore is "Holistic Approach to Disaster Risk management--Public Education and Community Outreach Programmes by the Singapore Civil Defense Force (SCDF)," with its vision to strengthen the nation's resilience and preparedness towards disasters through active public education and engagement programmes with all stakeholders of the country such as residential sector, the commercial and industrial workplace sector, and the school population.

BANGLADESH

"Comprehensive Disaster Management Program (CDMP)"intends to carry out projects on three main subcomponents of the Earthquake and Tsunami preparedness component and one subcomponent under Support for Disaster Management Information Network. CDMP is designed to strengthen the Bangladesh Disaster Management System and more specifically to achieve a paradigm shift from reactive response to a proactive risk reduction culture. It is a multi agency collaborative initiative by Oyo International Corporation (OIC)-Japan; Asian Institute of Technology (AIT)-Thailand; National Society for Earthquake Technology (NSET)-Nepal; Dhaka University Chittagong University of Engineering and Technology (CUET)-Bangladesh, Shajalal University of Sylhet; and Bangladesh Disaster Preparedness Centre (BDPC). Under the Earthquake and Tsunami Preparedness Component, this consultancy project aims to facilitate the preparation of the earthquake emergency plans with a view to strengthen the capacity of the city dwellers to face, manage and operate the plan effectively in the event of the earthquakes

INDIA

In the programme named "Urban Risk Reduction through Health & Hospital Safety from Disasters in National Capital Territory of Delhi, India", the focus has been put on the initiative on "health sector safety in disasters" in Delhi, which includes major activities such as preparetion of hospital disaster management plan in each hospital in Delhi, district health plan for all districts, training of doctors on pre-hospital care and support staff, and ensuring hospital networking during disasters. It is an initiative of the Directorate of Health Services (DHS), Delhi, in consultation with the National Institute of Disaster Management.

Another program from India is about "Urban Risk Mitigation through School Safety Programmes in Delhi," aiming at developing a culture of disaster safety in schools with broad objectives of sensitization of students and teachers towards safety issues and making schools premises safe against impending disasters. Government of the National Capital Territory of Delhi (GNCTD) has taken up this initiative with support from SEEDS, Geo Hazards International (GHI) and USAID. The Building Material Technology Promotion Council (BMTPC) is also contributing, with support NCPDP Ahmedabad.

Also from India, there is a unique example of community-government partnership presented in another programme, entitled "Advance Locality Management (ALM) in Mumbai: Enhancing disaster resilience through local environmental management." The Advance Locality Management (ALM) was started by motivated citizens who were concerned with neighborhood problems and resultantly growing localized risks. ALMs play a key role in sensitizing the citizens to inculcate the spirit of civic consciousness, and ensure their co-operation to the municipal administration. Their role is most significant to educate the masses. This is a system which encourages the citizen to take active role in reducing localized risks significantly. The programme is being implemented by about 800 neighbourhood groups in association with Municipal Corporation of Greater Mumbai and a few community based organizations.

NEPAL

Kathmandu Metropolitan City

The programme "Kathmandu Risk-Sensitive Land Use Planning" has set its aims to mainstream disaster risk reduction in the development strategies and legislations of Kathmandu Metropolitan City (KMC) through the development of a risk-sensitive land-use plan, advocacy campaigns, policy formulation, inter-institutional coodination and strengthening of local institutions. The overall goal of the Project is to ensure that the detailed land use plan of the Kathmandu Metropolitan City (KMC) fully integrates disaster risk reduction within its spatial and physical development strategies including regulatory and non-regulatory planning tools, bylaws, regulations and procedures. The programme is an initiative of Earthquakes and Megacities Initiative, German Committee for Disaster Reduction (DKKV), Kathmandu Metropolitan City, Kathmandu Valley Town Planning Committee, and National Society for Earthquake Technology.

Another project in Nepal entitled "Building a Competent Disaster Management Department at the Kathmandu Metropolitan City" implemented by Earthquakes and Megacities Initiative (EMI), German Committee for Disaster Reduction (DKKV), and Kathmandu Metropolitan City, aims to enhance the institutional capacities of the city government of Katumandu in emergency and disaster management, and integrate it with the National Stragegy for Disaster Risk Management. The Emergency Management component of the Cross-Cutting Capacity Development (3CD) Program aims to (1) enhance the institutional capacities of KMC in emergency and disaster management; (2) build a disaster management sysytems at KMC, (3) build staff competency through specialized training, and (4) develop the city's Emergency Plan.

PAKISTAN

Rawalpindi & Islamabad

After unprecedented rainfall on July 23, 2001, the flood in Nullah Lai produced catastrophic damage in the based area including death of 74 people and the destruction of about 3000 houses. After this flood, "Project for Imploving in Flood Forecasting & Early Warning System of Lai Nullah Basin in Rawalpindi and Islamabad" was initiated for establishing early waning system for safety of life and property of the people of twin cities.

The flood experience also initiated a set of project named "Project for Improvement in the Flood Forecasting & Warning System in Lai Nullah Basin in Rawalpindi and Islamabad" with its aim to enhance availability of early warning time period and availability of more accurate hydrological data for future studies and programs, and "Flood Risk Assessment Management of Lai Nullah," including flood risk assessment management through DRR, capacity building, foreign training of counterparts, and rescue & evacuation. The projects were initiated by Federal Flood Center (FFC) in collaboration with Pakistan Meteorological Department (PMD), Central District Government Rawalpindi (CDGR), Rescue 1122 and Civil Defence.

SRI LANKA

Galle

In the programme "A simplified approach to elaborate a tsunami scenario for the Port of Galle, Sri Lanka," a methodology to elaborate a scenario of potential impacts of a tsunami in coastal cities is presented. The approach has been tailored to span eleven development sectors which are present in typical cities such as health, education, housing, life lines, transportation, telecommunications, industry, government, etc. The programme was taken up by the Technical Committee on Early Warning and Disaster Management of Sri Lanka, UNU-EHS, and PPEW-ISDR.

Community Based Hazard Mapping has been started in "Community Based Hazard Mapping in Galle District, Sri-Lanka" through community level workshop in all 19 divisions of Galle district, Sri-Lanka.

The goal is to rise to the public awareness about natural disaster. In total, 3350 residents participated in this project. And they could propose their opinion actively and consider disaster prevention by themselves. The initiative was taken by residents, local government officials and experts in Galle district with support from ADRC (Asian Disaster Reduction Center).
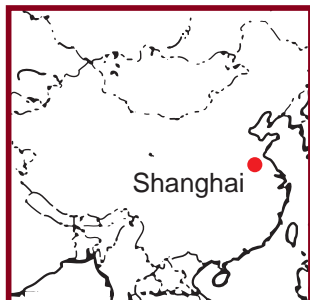
China

In China, A programme on early warning system has been introduced in the project: "The Shanghai Multi-hazard Early Warning System (The Shanghai MHWS)" by the Shanghai Regional Meteorological Centre, and the Emergency Response Management Office of the Shanghai Municipal Government. This programme aims to establish a mechanism on multi-agency response to natural disaster and standards on production and dissemination of multi-hazard early warning. On the social level, carrying out the 'Leading by government, Grass-roots' disaster prevention concept, push forward the development of community safety system.

Japan

After the Great Hanshin Earthquake in 1999, Kobe has been the center of disaster-related activities in Japan. A training program entitled "Developing Human Resources of Disaster Reduction" has been conducted by Japan International Cooperation Agency (JICA) Hyogo International Center to share accumulated experience, lessons, and expertise with government officials from developing countries through training programmes.

As another program in Kobe, an international program named "Preparing health facilities for disasters in cities" has been implemented by WHO Kobe Center with its aims to conduct a situational analysis on the preparedness of selected health facilities, characterize the features and attributes of effective urban health facility disaster preparedness policies and programmes, and advocate the policies and programmes within the context of health systems development.

Republic of Korea

Republic of Korea is targeting the test operation in 2009 to initiate the program "Urban Disaster Risk Reduction Training Program (proposed)" with the aims to construct the cooperation system for DRR and to support the activity of various DRR in North East Asia and to develop a training and educational program for experts of urban DRR in the world. The initiative is proposed by the National Emergency Management Agency, and the City of Incheon.

IRAN

The program "Strengthening Capacities for Disaster Risk Management in Iran" by ADPC intends to reduce risks associated with one natural hazard (earthquakes) in an urban context. The intention will be to replicate these management arrangements on a larger scale and operationalize it across other cities of Iran, in accordance with national codes and building standards developed during the pilot.

TAJIKISTAN

The objective of the project "Seismic Risk Reduction for the City of Dushanbe Project" is to reduce vulnerability of the capital city residents to strong and catastrophic earthquakes through the implementation of building inventory and development of earthquake damage scenarios and action plans. The project beneficiaries are the total population of the city of Dushanbe. Special attention will be given to social facilities, such as school and hospitals. The project has been initiated by United Nations Disaster Risk Mitigation Project (UN/DRMP), "Prevention, Mitigation, and Preparedness (PMP) International" NGO, Tajik Technical University (Civil Engineering Department), Institute of Earthquake Engineering and Seismology (IEES) of the Academy of Sciences of the Republic of Tajikistan, and the Ministry of Emergencies and Civil Defence of the Republic of Tajikistan.

Multiple Countries

BANGLADESH, NEPAL

"Gendered Community Based Disaster Management (CBDM) in the Context of Regional Development" intends to promote gender perspectives and disaster preparedness in the context of regional development at government levels and at the community levels, empowering both women and men through decision-making and planning as members of communities.

JAPAN, THAILAND

"Climate change and health in urban settings" is a newly conceptualized project, seeking to put health at the heart of the climate change agenda by convening of an expert group meeting, by in-house and contractual research work for evidence generation and evidence-based bulid up, and by advocacy work to draw attention on climate change and health.

BANGLADESH, NEPAL, SRI LANKA

"Urbanisation and Community Based Disaster management (HTF VII - IX)" is a series of projects focusing on mainstreaming disaster risk reduction activities in the context of urbanising communities and city planning over a three year period with additional focus on gender. Projects were implemented in a manner that addressed the needs, vulnerabilities, and capacities of communities in the midst of rapid urban growth.

INDIA, INDONESIA, UZBEKISTAN

"School Earthquake Safety Initiative (SESI): Reducing Vulnerability of School Children to Earthquakes" includes retrofitting of school buildings in a participatory way with the involvement of local communities, resource institution, local governments; and training on safer construction practices to technicians, disaster education in schools and local communities, targeting India, Indonesia, and Uzbekistan.

MALAYSIA, JAPAN, VIETNAM

With the core concept of 'Water-Environment', "Participatory Environment and Disaster Management through Mutual Learning: Development of Water Communities in Japan, Malaysia and Vietnam" discusses the urban management from community perspective, and specifically focuses on water related environment and disaster issues in Kuala Lumpur (Malaysia), Saijo (Japan), and Danang (Vietgnam), aiming to show the awareness of water-environment in community and the environmental characteristics of region.

INDONESIA, NEPAL

"Housing Earthquake Safety Initiative (HESI)" is a project aiming to improve structural safety of houses to prevent damages and safeguard people's lives, property and livelihood from earthquakes through effective implementation of building safety regulations for Indonesia and Nepal. This initiative is also covering countries in other regions such as Algeria and Peru.

TURKEY, PHILIPPINES, NEPAL, JORDAN

"Cross-Cutting Capacity Development Program (3cd Programe)" is a long-term, inter-disciplinary and multi-partner program aimed at assisting cities to implement sound practices in disaster risk management by finding ways to conduct risk reduction and management activities before disaster strikes in order to protect lives and properties, enhance economic activities, and preserve historical wealth and social structures, particularly of megacities in developing nations such as Turkey, Philippines, Nepal and Jordan.

BANGLADESH, VIET NAM, PHILIPPINES, PAKISTAN, SRI LANKA

"Program for Hydro-Meteorological Disaster Mitigation in Secondary Cities in Aisa (PROMISE)" contributes towards reduction of vulnerability of urban communities through enhanced preparedness and mitigation of hydro-meteorological disasters in South and Southeast Asian countries such as Bangladesh, Vietnam, Philipphines, Pakistan, and Sri Lanka. The program's strategies include increasing stakeholders' involvement and further enhancement of strategies, tools and methodologies related to community preparedness and mitigation through the promotion of good governance and community-based disaster risk management.

BHUTAN, INDIA, INDONESIA, NEPAL, THE PHILIPPINES, SRI LANKA AND THAILAND

"Asian Program for Regional Capacity Enhancement for Landslide Impact Mitigatin (RECLAM)--Phase II" promotes a dialogue between decisionmakers and professionals about the theoretical and practical aspects and issues related to landslide hazard mitigation. The program activities are designed to be implemented in three-years involving national partners from Bhutan, India, Indonesia, Nepal, the Philoppines, Thailand and Sri Lanka.

SOUTH WEST ASIAN COUNTRIES

"Training on Safer Schools Against Disasters" aims to build capacity of government officials responsible for building schools in implementing school earthquake safety programs, targeting South West Asian Countries.

GLOBAL

"Mega-Learn: Negacity-specific eLearning Toors and Training Programs" is a global on-line platform for training, capacity building and knowledge sharing. It consists of megacity-specific tools and online training courses for disaster risk management practitioners, city managers, researchers and other professionals.

Another global online project is "World Bank Institute's Distance Learning Program on Natural Disaster Risk Management," which is a series of online courses designed to develop a broader understanding of natural disaster risk management among local government decision makers, policy makers, city managers, administrators, and planners, disaster management practitioners and responders as well as enhance the effectiveness of disaster risk management practices at the local and community levels.

There is also a non-online global project named "Cluster Cities Project (CCP) ." This is a pioneering platform for the establishment of a worldwide network of megacities supporting the paradigm shift from reactive disaster response to proactive risk reduction by building a coalition of partner cities amongst each worldwide cluster and a community of urban disaster risk reduction practitioners.

WAY FORWARD

In conclusion, urban risk reduction in Asia needs a balanced mix of policy formulation, implementation of regulatory measures, and education-awareness programs with community based approaches. A few conclusive statements can be as follow :

1. Urban risk poses a challenge for effective distribution and management of global resources.

2. For effective urban risk reduction, there is a need to strike a balance between natural and built environments and between ecological and economic objectives.

3. There is a need to develop a structure of goals/ visions and a methodology to achieve urban risk reduction in order to identify the action that has to be taken.

4. Steps need to be taken that are relevant in the short term in order to gain wider acceptability, but keeping long term goals in mind.

5. Access, sharing and dissemination of information has to be a priority to achieve greater understanding of the issues involved.

6. Collaborative efforts in 'knowledge transfer' at the community-to-community level and city to city level have to be encouraged, particularly between developed and developing cities.

7. There is a need to understand and enact the concept of sustainable development and sustainable living, in all its varied definitions, to achieve urban risk reduction objectives.

8. Development of new technologies that are clean, green and practical has to be encouraged and exchanged between national and city/local governments to combat environmental risk problems emanating from and also impacting cities.