Mainstreaming Disaster Risk Reduction into Local Governance

Gabrielle Iglesias, Iglesias@adpc.net
N.M.S.I. Arambepola, arambepoloa@adpc.net
Dr. Bhichit Rattakul, bhichit@adpc.net
Asian Disaster Preparedness Center

Disaster risks in Asia

We can recognize that urban areas as economic engines of any Asian country, but these engines can fail if there is no action taken to address the soaring reconstruction costs incurred after disasters, and to minimize significantly the losses to shelter, infrastructure, and commerce [12]. Our urban governments need to take serious note of the priorities for disaster management, and adopt proactive approaches and practices for mainstreaming disaster risk mitigation within the efforts for sustainable development.

Asia is exposed to intense natural hazard events, such as earthquakes of high magnitude and intense rainfall that produce floods and landslides. A global study of the relationship between elevation and the location of hazards found that the largest coastal urban areas are located in the flood plains of major rivers of Asia (e.g. Ganges-Brahmaputra, Mekong, and Yangtze), and many other coastal urban areas are within cyclone-prone regions (e.g. Bay of Bengal, South China Sea, Japan and the Philippines). Unfortunately, these coastal areas of low elevations are more densely populated than other areas; in fact, Asia accounts for eight of the top ten countries with populations in the coastal zone with elevation from 0 to 10 meters [6].

At the same time, Asia is one of the fastest urbanizing regions in the world. If, 37% of its population lived in cities in the year 2000, this proportion is projected to reach more than 50% by 2025. By 2020, it is expected that seven of the world’s ten largest economies will be from Asia. A study on the location of megacities and hazard zones found that the majority of Asian mega-cities and other urban municipalities are located in hazard-prone areas. It is no surprise to disaster managers that during the period 1990 to 2004, Asia accounted for one-third of 1,562 flood disasters in the world, wherein more than 63,000 people were killed in floods, and the total number of those affected by floods in Asia is 98% for the world [2].

City governments in general seem to fail to design action plans to address the problems associated with vulnerability and fail to engage the urban poor in their own disaster mitigation, although it is directly connected with the urban development process. Institutional vulnerability of city governments refers to the limitation in capacity of municipalities to assess risk trends. It is related to the lack of technical information and probable scenarios of hazard exposure, socio-economic and physical vulnerabilities, risk assessment tools, an early warning mechanism, and historical information on destructive events. It is also related to the ability to use technical information and probable scenarios within the urban planning and decision-making processes. The responsibility of urban authorities is to provide safer areas for living, but cities do not implement strict land use and construction regulations. The result is the death, damage and destruction that could have been avoided through zoning, adequate building codes implementation, emergency response planning, and disaster mitigation and preparedness that involve communities. The June 2007 landslides in Chittagong, Bangladesh is an example of how poor land use regulation that did not prevent cutting hillside sections to “make room for development”.

In most countries in Asia, DRM is a subject handled by central authorities and little effort has been made to delegate the DRM responsibilities to the local government sector. Despite the increased recognition of the effectiveness of mitigation at local level, it has not generated the resources and attention necessary from city governments to make it a mainstream requirement of their development efforts to spread the benefits of mitigation to a greater portion of the population. It is in this respect that mechanisms for
participatory approaches for decision-making are recommended. Most decisions taken in the absence of representation from vulnerable communities are unfavorable to them, and consequently resisted by them.

Needs and Challenges

Until recently, disaster prevention was not a development priority. Other issues associated with rapid urbanization, such as poverty and inadequate access to shelter and basic services took on greater importance and significance. However, this trend began changing in the 1980s and 1990s when a series of devastating floods, earthquakes, etc. caused widespread destruction in various parts of Asia and made it clear that our cities are becoming increasingly vulnerable to disasters. It is important to focus efforts upon disaster mitigation and risk reduction.

In comparison with earthquakes, floods are more widespread and bring more losses to economic sectors, such as industry and agriculture. In this regard, there are several issues that need to be considered within any program for disaster mitigation.

- **Lower social vulnerability to hazards to reduce disaster risk.** Socio-economic vulnerability has to be addressed through solutions capable of tackling either the drivers of vulnerability or the root causes. There are several problems associated with the progression of vulnerability that need to be managed. These include uncontrolled urban growth, unplanned physical development, lack of access to basic services, lack of or substandard infrastructure, land scarcity, poor health and sanitation conditions, and poverty. This set of drivers of vulnerability is a big challenge for developing countries in Asia and governments are ill-equipped and under-resourced to provide solutions.

- **Develop a policy framework for disaster management, and enforce laws and regulations.** Asian mega-cities with their high-density populations within a relatively small geographic area present a unique environment for attempting to develop disaster risk policies. A comprehensive master plan for economic loss prevention and disaster mitigation is recommended for each city.

- **Strengthen the links between development and disaster risk reduction.** City planning should guide and control the development activities of the private sector to address disaster risk. Spatial hazard assessments should be the basis of physical planning. Hazard zonation mapping and risk assessment is the starting point for vulnerability reduction. The principles of safe construction should be followed at all times, and building codes be periodically reviewed for validity. The increase in physical vulnerability is connected with the substandard construction of buildings and infrastructure. Shelters occupied by the Asian middle class often are owner-built without adequate technical guidance from architects and engineers. The housing in crowded informal settlements is substandard structures of a temporary nature. Poor people live in slums and under-served settlements. Further, cities lack a sizeable, capable cadre of technical experts who can assess building plans and monitor actual construction against technical requirements for structures that could withstand the destabilizing forces from potential hazards.

- **Consider the impacts of global factors such as climate change.** As data accumulates, data and climate models become increasingly sophisticated, and global temperatures are expected to continue to increase, extreme weather events are predicted to occur more often and with greater severity. For example, socio-economic models of flood damage in cities independently predict vast increases in spending on damages due to climate change in the absence of adaptive infrastructure changes. The potential impacts of changes in the severity and frequency of other climate and hydro-meteorological hazards (such as typhoons, avalanches, landslides, storm surge, droughts) should also be studied and preparations made because if the climate change predictions bear out, then investment must be made now to avert the massive damages of the future.
• **DRM should be everybody’s business.** Disaster risk management always demands the concerted actions by cities and its partners who should help to manage the risk environment. It is the duty of all, city dwellers, business community, private sector and government institutions as impacts can be expected by everybody in various forms and degree. Household- and community-level preparedness is critical for reducing fatalities and disruption of livelihood.

• **Assure a broad coverage for information, awareness and education campaigns.** Lack of information on exposure to hazards of specific locations, probable disaster scenarios, the absence of an early warning mechanism, and the unavailability of recorded historical information about destructive flood events are some of the reasons why, in spite of technical training, the relevant disaster preparedness institutions have limited capacity to assess disaster trends. Hazard zonation and risk assessments should be made freely available to the public.

**ADPC Strategy 2020: Reducing Urban Disaster Risks since 1995**

ADPC has fifteen years of experience in urban disaster mitigation. In 1995, ADPC began implementing the Asian Urban Disaster Mitigation Program (AUDMP) with funding support from USAID/DCHA/OFDA; the program initiated a number of innovative disaster risk mitigation and management activities in ten countries and promoted a strategic framework to introduce disaster mitigation as a proactive measure. ADPC created a team dedicated to Urban Disaster Risk Management (UDRM) in 2003 and launched its Strategy 2020 for Urban Disaster Risk Management. ADPC is committed to continue to carry out urban disaster mitigation activities in the Asian region through a more tailored and targeted approach. In these fifteen years, we found that the disaster management challenges for Asia are the following:

• **Disaster-Risk Reduction (DRR).** Natural disaster risks increase as cities grow unplanned and marginalized populations are pushed to vulnerable areas and as more houses are built and more infrastructure is constructed without enforcement of regulations that take disaster risks into consideration. ADPC helps to reduce disaster risk by building disaster-resilient urban communities, promoting development efforts that protect the environment and do not increase cities’ vulnerability to disasters.

• **Integrate DRR in poverty reduction programs.** Natural disasters can impoverish people and leave those who are already poor unable to cope in a crisis. Preparing for disasters in a multi-dimension approach includes poverty-reduction strategies at a local level that aim to bolster people’s ability to survive in a calamity and afterward. ADPC gives priority to building up the physical, social and economic capacity of communities and institutions in disaster-prone areas.

• **Work towards sustainable development.** Poor land-use planning, environmental mismanagement and a lack of regulatory mechanisms increase the risks and exacerbate the effects of disasters. ADPC works to improve access to safe shelter, services and infrastructure for the urban poor by advocating for and facilitating the incorporation of disaster risks in development planning and management processes.

• **Environmental Protection.** Environmental degradation leads to local climate change, deforestation, loss of biodiversity, reduced water supply and desertification. These effects have been found to accelerate or amplify disasters, such as floods, landslides and droughts. ADPC provides multi-disciplinary, multi-level and multi-hazard approaches to risk reduction that focus on long-term development and environmental protection.

**Mainstreaming Disaster Risk Reduction**

Mainstreaming refers to bringing different ideas, concepts, approaches/practices, policies and programs into the prevalent one. The idea of mainstreaming is to incorporate disaster risk reduction activities in
ongoing development programs/projects. In the early '80s and late '90s, disaster risk reduction was seen as standing apart from development. Considering the fact that disasters quite often hamper the economic and social development, efforts are on to sensitize the actors of development to mainstream disaster risk reduction in urban development. The end objective of mainstreaming disaster risk reduction is to assist the community, actors of development, governments and institutions in adapting approaches and formulating policy framework so that the risk emanating factors can be addressed in an effective manner.

With mainstreaming, the local institutions including the city/municipal authorities, non-governmental organizations and community based organizations interface with each other and facilitate the disaster risk management at local level. This collaboration assists in sector and spatial planning of the urban cities which further leads to reduce the impact of hazards.

Mainstreaming disaster risk reduction into local governance necessitates relating development priorities to the environmental and social issues that contribute to disasters. Within the various functions of local authorities, mainstreaming requires: the identification of areas prone to hazard events; the identification of communities and sectors at risk; the implementation of protection measures; and the promotion of citizens' abilities to cope. However, despite the growing risks, most of the rapidly developing countries in Asia adopt a reactive approach for management of the risks in urban areas. Spatial plans are often prepared without adequate considerations to seismic or hydrological aspects, with city expansions directed towards the most prone areas or even creating new risks from rapid land use change. Countries need to understand the urban risks arising due to natural and manmade hazards and subsequently, should adopt a long-term and proactive strategy for risk management. Some of the strategies that can be adopted are as follows:

**Increase the coping capacities of citizens by enabling them to reduce their own risks.**

Through the city governance process, local governments are encouraged to engage in a constructive dialogue with stakeholders on development issues, and involving them in decision-making through a sustainable and proactive risk reduction approach. In many countries, the national legal mandates of cities do not include such processes and therefore, it is necessary to promote the establishment of Municipality Disaster Management committees with representation from city government, civil society groups and public sector. This can be an effective informal governance approach for risk reduction.

Participatory hazard and vulnerability mapping with the subsequent participatory risk assessment are considered to be the starting point in the process. These assessments are carried out using participatory tools and trained volunteers to facilitate inputs from a wide range of community stakeholders. At the municipal level, the assessment is integrated into other municipal maps, such as land use, human settlement data, etc. using GPS and GIS technology, transforming the community knowledge into formal products. At the community level, the assessments are the basis for community action plans to reduce their own risks. It was successful in the Philippines in cities like Marikina, Dagupan and Naga, and the knowledge and support of civil society stakeholders was considered an essential aspect for solving the safety of city population.

**Reduce risks by strictly regulating specific, disaster risk-related private sector activities.**

One of the essential aspects of urban disaster reduction is ensuring safer housing and shelter, capable of withstanding the forces inflicted due to hazard events. Most of the casualties from disasters are associated with collapsing buildings. Few countries in Asia have appropriate construction regulations for specific potential hazards that occur within the city, and the strength specifications of building materials often do not take into consideration potential disaster impacts. More often, buildings are built by owners themselves who do not use appropriate construction materials and techniques; they would rather take on the perceived smaller cost for reinforcing and renovating existing vulnerable buildings. The appropriate government institutions have to take initiatives to promote techniques for construction in disaster prone areas through demonstrations of model housing, school retrofit programs, including reinforcement of historical and old school buildings, community buildings, etc.
While the private sector is considered a catalyst in the development process, it shares responsibility in converting negative vulnerable environment into a positive safe environment. When the commitment of the vulnerable communities is high, it is expected that private sector institutions should step in to fill the funding gap for mitigation. Risk can be minimized if it is always considered to be a part of an investor’s consideration within a project design. This has been demonstrated in school retrofitting programs implemented by National Society for Earthquake Technology (NSET) in Nepal, and disaster resistant model housing initiatives undertaken by Center for Housing Planning and Building (CHPB) and National Building Research Organization (NBRO) in Sri Lanka.

Include disaster risk considerations within urban planning and development planning

Development choices can come in the form of stronger infrastructure and poverty reduction programs, with emphasis on the role of development in reducing vulnerability to disasters by increasing the ability of specific groups to cope and recover from their aftermath. The United Nations and others have taken an active role in promoting vulnerability reduction through land use planning and other development actions by city governments in their publications (see [1], [8], and [9]). Development planning should also not occur in a spatial vacuum, but include the rural development issues [11]. It is also good to consider a conceptual shift away from conventional and traditional urban planning towards a planning framework based on the proposed concepts of urban environmental planning, defensible city, responsible architecture and urban disaster governance [13].

Include disaster risk considerations within poverty reduction programs.

The urban poor should be made a specific target for risk reduction because they have a greater exposure to hazards, lower tendency to move to safer areas, lower protection through insurance and other economic mechanisms, and lower adaptive capacity to changing risks. Effort should be made to include risk reduction indicators within programs for attaining the Millennium Development Goals and other poverty reduction programs. For example, livelihood programs should not promote economic options that are vulnerable to interruption by floods or other present risks. Attempts can be made for crop insurance against floods and drought. Community savings schemes and micro-credit should be designed to promote disaster recovery. Low-cost housing should be designated upon safe sites.

Promoting good governance to sustain disaster risk reduction

Good governance is the foundation for sustainable disaster management. UNHABITAT’s Global Campaign on Urban Governance promotes the UN definition of urban governance as the continuing process through which conflicting or diverse interests may be accommodated with cooperative action. Adding the adjective “good” elevates the discussion to a debate over desired standards [10]. These standards promoted are interdependent and mutually reinforce each other. They are sustainability, subsidiarity, equity, efficiency, transparency and accountability, civic engagement and citizenship, and security. Disaster management is specifically mentioned under sustainability and security. Good governance is not yet fully studied in relation to disaster risk reduction, but some research into the Katrina disaster have already found issues of accountability [5], subsidiarity [14], and efficiency [3].

Planning for climate change in the urban areas

Coastal erosion and the projected increase in sea levels from climate change scenarios underline the need for city governments to re-plan their infrastructure to be ready for the future. There is a lot of indication of a global climate change; events around the world that can be evidence to it include the heat wave in Western Europe, the recent flooding in England, and the monsoon floods in South Asia. Urban planning of coastal cities should include a long-term climate scenario, and appropriately design the infrastructure.
There are attempts by many governments to institutionalize the better governance principles in government institutions. Governments are trying this in a top-down approach, with a few attempts to do the same with a bottom-up approach and by a simultaneous top-down/bottom-up approach. However, if both local governments and citizens do not understand the core elements of vulnerability, their relationship with governance structure and their ability to propose and implement the necessary change in governance structure or risk-related behaviors, then their society will remain vulnerable.

Taking Action for Mainstreaming DRR

Perhaps one of the most important policy decisions taken by ADPC is the promotion of mainstreaming of disaster risk reduction. ADPC annually convenes a Regional Consultative Committee on Disaster Management (RCC) meeting where all the national disaster management focal points meet and discuss important matters related to risk management at regional and national levels. In the RCC meeting held in Dhaka, Bangladesh from March 29-31 2004, the ADPC member countries took a decision to be more action-oriented for disaster risk reduction, and launched the RCC project of advocacy and capacity building for the mainstreaming of disaster risk management into development practice.

Since then, ADPC has had several priority implementation projects on mainstreaming in different sectors:

- Mainstreaming Disaster Risk Reduction in the Education Sector in Cambodia
- Mainstreaming Disaster Risk Reduction in the Education Sector in Laos
- Mainstreaming Disaster Risk Reduction in the Education Sector in the Philippines
- Mainstreaming Disaster Risk Reduction into the Planning Process of Road Construction in the Philippines
- Mainstreaming Disaster Risk Management in the Comprehensive (Multi-sectoral) Development Planning Process at the Local Level in the Philippines
- Mainstreaming Disaster Risk Management in Urban Local Government Sector in Sri Lanka

These achievements meet the challenges set by the previous RCC Meetings to embark on the ambitious direction identified. ADPC continues to meet the needs of the RCC Members, and values the Committee as an invaluable access to feedback and ideas from its member countries. We look forward to continue the discourse on disaster risk and to take action with you for everyone’s safety.

References:


