

IDRC DAVOS 2008

Urban Congestions and Hydro-meteorological Hazards in Secondary Cities in Asia

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Key words: secondary cities, hydro meteorological hazards, vulnerabilities, mitigation

INTRODUCTION

In the last decade or two, Asian cities have recorded higher rate of urban population than any other part of the world and become a hub of hopes for the poor and vulnerable community to survive. Hewitt (1997) argues that this concentration leads to higher urban vulnerability. In South Asia particularly, country like Bangladesh has been largely influenced by many factors including economic development, population growth and push and pull factors. According to United Nation Habitat, capital city Dhaka is expected to be 6th largest mega city of the world by 2010. In developing world, capital cities or primary cities always attract and influence the investment and development manifold. This lead to provide little opportunities for other heavily dense populated cities like to offer direct or indirect incentives to its citizens. Informal settlements suffer most where lack of access to basic services, access to urban centers, lack of livelihood opportunities and social development creates a typical urban poor community in these secondary cities. Prevailing natural hazards and potential risks compound the problem of urban poor community further. Secondary city has a character of rural and urban both. Community in these areas often proves to be more resilient and show cohesiveness in dealing with natural hazards. Asian Disaster Preparedness Center (ADPC) has recognized the importance of interventions in those congested urban risk areas and accordingly identified Urban Disaster Risk Management (UDRM) as one of its core thematic areas of work. ADPC has developed 'Strategy 2020 for Urban Disaster Risk Mitigation in Asia' which aims to reach 200 cities by the year 2020.

THE CASE STUDY

This case study throws light on best practices adopted by multi-stakeholders under the project PROMISE. The community is at the frontier of any kind of natural hazard and disaster. Empowering the community by internalizing the tools and methods of disaster risk reduction is a good way to deal with the future potential risks. This case study highlights, how to build up community ownership in responding to the existing hydro-meteorological hazards in the most

vulnerable cities of Chittagong City (Bangladesh), Da Nang (Vietnam), Dagupan (Philippines). It also focused on the importance of non-structural mitigation and direct structural mitigation practices with all corrective measures and sustainability.

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 have realized 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.

City Dagupan (Philippines) has grown as major urban center. The city has attracted migrants, students, daily commuters who work in its establishments. The city was flourishing as industrial hub and centre of education and excellence. On 16 July 1990, Dagupan suffered widespread damage due to earthquake and had a direct impact to the city. The earthquake caused flooding in the city. The earthquake made a meandering pattern, left numerous abandoned channels, and created a low lying flood-prone terrain made up of levees and back-swamps. Many of these are inundated during floods and high tides. Other factors that contribute quite often to flooding in the city are: (1) poor drainage system; (2) the continuing increase in built-up area; and (3) conversion of fishponds and other catch basins into residential and commercial lots and subdivisions. The city Dagupan always responded floods only in emergency by search and rescue operation, emergency medical treatment and little maintenance of drainage system. Every political and administrative subdivision, such as Dagupan City Government, is responsible for responding to emergencies and disasters with its area of responsibility. After the intervention of the project PROMISE, the approach towards managing the disaster has completely changed. Mitigation strategies have taken place of response mechanism at all levels. A city level technical team was formed to assist the authorities on continuous practicing the mitigation activities by involving various stakeholders. With this paradigm shift in local response, an assessment was carried out to perceive the hazard, vulnerability and capacity to address at the community and city level. Focus on community based effort was also brought in to work with communities towards their own disaster risk management. Instigating local law to celebrate a Disaster Safety Preparedness Day and making it part of city culture motivated the officials and community to come closer and fight with the prevailing hazards with preparedness and mitigation tools. The local level governance of Dagupan city has been able to bridge the gap between the officials and community to set an example for the other to demonstrate the same.

In Vietnam, there are different flood policies for different regions comprising of northern, central and southern (Mekong). The policy incorporates the geographical, climate and disaster features. Da Nang falls under the central region, which is narrow and topographically complicated and frequently affected many hazards like storms, and heavy rainfall that resulted in flooding. Each province in the Central Region is, in effect, a separate river basin. The principal hazards in the central region are typhoons, flash floods and drought. This region has historically used a river

basin-wide approach to protect itself against water related disasters. Initially the Government focused on avoidance and adaptation to overcome from this affecting impact of disaster. Though mitigation, preparedness were the core of the activities initiated, but most of them were turned into the structural intervention such as dyke strengthening, pier construction and the relocation of agricultural infrastructure. Component of Public awareness was also incorporated within the limitation of early warning and building local capacity for emergency response. Xangsane was the strongest typhoon to hit Da Nang City in 40 years. Reports from the Central Committee for Flood and Storm Control (CCFSC) on incurred damages and losses indicate that 69 people died, two were missing and 435 were injured and more than 1,000 residents were hospitalized. Homes collapsed and roofs were ripped off. Many of the houses were belonged to the poor and vulnerable people. Capacity building for safe housing construction was carried out under the project. Beneficiaries, both men and women, participated in the decision-making over the design and material to ensure the house was suitable for their needs. This process respected local culture and tradition as well as beneficiaries modification concerning their preferences, beliefs and culture. District engineers completed the house design following safer house construction techniques.

The role of the project

The Program for Hydro-Meteorological Disaster Mitigation in Secondary Cities in Asia is working to reduce the vulnerability and impact of the prevailing hazards. The objectives of the project are as follows:

1. Adoption of specific hydro-meteorological disaster preparedness and mitigation measures to manage hydro-meteorological disaster risk by stakeholders in the project area.
2. Increased stakeholder involvement and further enhancement of strategies, tools and methodologies related to community preparedness and mitigation of hydro-meteorological disasters in urban communities.
3. Strengthened networks and links among relevant risk management institutions/organizations within the city for improving potential and capacity for application and dissemination of lessons learned.

Table 1: Results obtained by the project

Item	Description
Major Achievements	Promoted and facilitated Community Based Disaster Management in dealing with hydro-meteorological hazards in Secondary cities in Asia
Lessons learned	Disaster Risk Reduction tools and methods can only be internalized if local context and knowledge are being promoted.
Steps for the future	Sharing the demonstration activities and experiences among local authorities, community, partner NGOs and donors to replicate the same.
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The PROMISE program has provided a platform for community and local institutions to own and share the responsibilities in reducing the impact of hazards. This has also lays down the foundation of local governance with the multi-stakeholder participation.

CONCLUSIONS

With the increase rate of disasters in Asia, vulnerable communities are also increasing everyday. Disasters are now part and parcel of daily life for these poor people. Affordability to recover from

the disaster is very less which eventually take the vulnerable community to remain vulnerable. This PROMISE program demonstrates that through mitigation and preparedness without undermining the local context can be affordable by the vulnerable people living in hazard prone areas.

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