Implementing Sound Practices for Disaster Risk Management in Complex Urban Environments (Megacities): Metropolitan Manila, Mumbai, and Beyond

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SUMMARY

This paper relates the earliest findings of a 6-year disaster mitigation research and implementation program currently underway in Metropolitan Manila and Mumbai, and expanding to other megacities over time. Metro Manila and Mumbai are the first of a number of world cities to engage in the Cross-Cutting Capacity Development (3cd) Program, a long term, multi-disciplinary program which aims to contribute to the safety and economic development of major metropolises. 3cd establishes partnerships for implementing sound practices and systematic mechanisms for disaster risk management. These include institutional and legal frameworks, policies, processes, and action plans that together will mainstream disaster risk reduction in local governments and institutions. The paper explores how local researchers and governmental institutions are partnering in collaboration with international organizations to enhance local planning and capacity to reduce disaster risk.

INTRODUCTION

Like many other megacities in the developing world, Metropolitan Manila, with an ever-growing population of over 11 million, is the political, economic, and socio-cultural center and capital of its country, the Philippines, attracting new residents from the countryside in relentless waves. Metro Manila isn't one city, however; it is composed of 17 separate cities and municipalities, each facing its own challenges as well as the multiple threats they have in common: floods, typhoons, earthquakes, terrorism, civil disorder, and in some cases tsunami, as well as rapid urbanization, homelessness, and widespread poverty.

Mumbai is not the capital of its country but it is India's financial, business and commercial center. It has the largest stock exchange in India, its port handles half of India's total foreign trade, and many multinational and corporate head offices are located there. And its official population of 11.9 million (2001) understates by up to an estimated 2 to 3 million its total population, which taxes every imaginable governmental and service system. The population density is one of the highest in the world, and over half the population resides in informal settlements.[i]

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While differing in socio-cultural, political, and geographic settings, Metro Manila and Mumbai have in common an increasing awareness of the high vulnerability of their populations, institutions and economies to disaster and willingness to take steps to reduce it. And when the 3cd Program was launched in early 2004, they were among the cities eager to volunteer to be the first cities active in the program.

INTEGRATING RESEARCH AND IMPLEMENTATION

The program's appeal to Metro Manila, Mumbai, and other cities was clear: it offers linkages with other cities, facilitates inter-institutional and researcher-government linkages within cities, brings in outside perspectives and expertise, and promotes risk communication and collaborative action. It is a truly cooperative partnership of:

- the Earthquakes and Megacities Initiative (EMI), an international scientific not-for-profit organization based in the Philippines,
- city governments and academic institutions from within EMI's existing 20-city network
- scientific and research institutions, notably the Earthquake Disaster Mitigation Research Center (EdM-NIED) in Kobe, Japan, Kobe University, and the Pacific Disaster Center (PDC) in Maui, Hawaii, and
- sponsoring organizations including the World Bank, UNESCO, UNDP, and other multi-lateral and international organizations.

Further, the program combines academic research with actual implementation of research findings in Metro Manila and Mumbai, and soon in other participating cities, by putting into practice key strategies, which have been proven through field work and experience:

- involving stakeholders as equal partners in all phases of program design and execution
- making the beneficiaries of the program its implementers
- teaming local and international multi-disciplinary researchers, and
- ensuring implementers have an active role in the research activity.

The program encourages a broad and integrated view of disaster risk reduction, taking into account characteristics peculiar to each participating city. Cities and researchers together examine the status of their cities and institutions in relation to factors which contribute to a successful disaster risk management system, including the following:

- an effective planning process
- a strong legal basis, as a country's constitution and laws provide the framework for its response to societal issues and its philosophical approach to managing disaster risk
- a good understanding of the hazards and vulnerabilities faced by the city
- a capable nodal agency to keep disaster risk mitigation in public and official view, to stimulate integration of mitigation into development and economic plans, to schedule and plan public awareness activities, contests, drills and exercises, etc.
- mechanisms for inter-institutional coordination
- ongoing capacity-building processes
- public policies that protect human and economic and natural resources and activities, that integrate risk management into development plans, that empower the people as well as the government to take action, and
- community and stakeholder participation, with the idea being to tap the initiative of local community groups and contribute to community empowerment.

In each participating city, research will identify the status of current mechanisms and practices, gaps and needs, and will identify and document sound practices that may be useful to other cities. 3cd also addresses, among other concerns, how to convince policy-makers and professionals of their role in disaster risk mitigation, by working to create a constituency within the government departments. Turnover of officials means that it is often necessary to start anew with the new person, so 3cd works to create this constituency within the government agencies, as well as in the political leadership and other key local players and stakeholders.

INITIAL PROGRAM IMPLEMENTATION

Early lessons learned in this seven-month old program reinforce some initial perceptions and lessons learned from recent urban disasters and previous research. For instance, it is most obvious that participatory processes are very time-consuming but exceedingly valuable as mechanisms for awareness-raising and capacity building. Everyone involved in any step in the participatory process gains something in terms of awareness of risk and risk reduction. Naturally, mutual understanding is enhanced when representatives of different institutions come together in meetings and workshops. Second, we have seen that direct personal contact between the research team (local and international) and the local officials is a very effective means of generating personal support and commitment from the officials. It is hard to ignore someone sitting across from you at your desk.

The first six months of the program were undertaken in collaboration with EdM Team 4 under the leadership of Dr. Neil Britton, with the lead researcher (component coordinator for the analysis of knowledge and practice) Jeannette Fernández taking residency in Kobe. The primary activities were development and analysis of city surveys, literature survey and methodology research, a First 3cd Program Coordination Workshop with partnering institutions and cities, and City workshops in Metro Manila and Mumbai. The program's structure, work plans, and monitoring and assessment procedure were developed and implemented.

Development and Analysis of City Surveys

The first main objective was to collect and analyze relevant information related to current disaster risk management practices and identify sound practices in every EMI city. For this purpose a survey instrument was designed and distributed among participating cities. All answers were collected in one file for further analysis. Templates were designed and redesigned for presenting the collected information to a broader audience.

City Workshops in Metro Manila and Mumbai

Researchers and government officials in both Metro Manila and Mumbai were eager to become immediately involved in the 3cd program's initial component: analysis of knowledge and practice. Metro Manila's political leadership, at both the regional level (Metro Manila is defined as the National Capital Region or NCR) and in the individual cities and municipalities, has reason to be concerned about its disaster risk, particularly in the wake of two recent major research studies focusing on the previously little understood earthquake risk. These studies were the Japan International Cooperation Agency (JICA)-funded *Metropolitan Manila Earthquake Impact Reduction Study (MMEIRS)* and the Metropolitan Manila Case Study conducted as part of the *Development of Earthquake and Tsunami Disaster Mitigation Technologies and their*

Integration for the Asia-Pacific Region (EqTAP) Project carried out by the Earthquake Disaster Mitigation Research Center (EdM) in Kobe. 3cd local and international team members participated in both studies, opening the way for continued collaboration through 3cd.

Two of Metro Manila's cities, Makati City and Quezon City were selected/self-selected as pilot cities for a combined Makati-Quezon City workshop, allowing the research team and city participants to explore inter-city cooperation as an added facet of dealing with disaster risk. Makati City is the financial center of the country, as well as one of the main central business districts of Metro Manila. While its nighttime population is around 440,000, the daytime population reaches one million, creating great congestion in a small area. Quezon City, on the other hand, comprises the largest land area of Metro Manila's 17 cities and municipalities and about 22% of its population. The main offices of the national government agencies, the national legislature, and the campus of the University of the Philippines are located in Quezon City.

The workshops were designed through close work between the 3cd's international and local teams, the latter led by Dr. Renato Solidum, Director of the Philippine Institute of Volcanology and Seismology (PHIVOLCS), and Dr. Ravi Sinha, Professor at the Indian Institute of Technology. The workshops helped define the foundations for the program in each city through a better understanding of current arrangements for disaster risk management and collecting what cities consider to be their sound practices. Also through the workshops, City officials and representative community groups became engaged in the program and strategic local groups were created, i.e. the Local Working Group in Manila and the Advisory Group and Expert Group in Mumbai, to activate local activities and follow up on agreements reached at the workshops.

The workshops demonstrated clear interest by the cities to get involved in the 3cd Program and willingness to provide all necessary local support. This was clearly expressed by the Mayors, and the respective cities covered all the local expenses. Workshop evaluation results showed around 84% of respondents were definitively satisfied and pleased with the overall exercise.

Methodology Research regarding Sound Practice

EdM Team 4 led by Neil Britton is taking the lead on the development of attributes of sound practices and a methodological approach to evaluate sound practices, and this aspect of the project will be discussed in detail in a separate paper presented by Dr. Britton. EdM Team 4 continues to work with other program partners to document its research in this area benefiting from the insight gained from city workshops as well as review of the literature produced through other current international efforts aimed at defining and assessing risk management practices.

KEY INITIAL FINDINGS

Assessment of Current Practice

To date, the assessment indicates that the concept of disaster risk management has not really taken hold in Metro Manila and Mumbai. The cities have not really moved their vision from response; they are very concerned about and continuing to make efforts toward improving their response capacity. This indicates a big challenge to 3cd to try to incorporate proactive mitigation visualization, while at the same time supporting the immediate requirements of the cities.

A related observation is that decision makers and officials in general have not fully grasped how services and daily activity of the people could be highly disrupted in case of a severe event in the complex environment of a megacity. Even in the presence of a scenario, which is available in some of the cities which have been surveyed, the question of how to get a resilient and robust city and community has not been addressed yet. Further, how to get city officials and others involved in a strategic thinking approach to envision what sort of things can be put in place, prior to the event, to reverse the situation has not yet been considered.

These observations are not by themselves surprises as similar observations have been made through EMI's work with 20 world cities in its Cluster Cities Project. However, the field observations are providing more insight as to some of the root causes of the lack of disaster risk reduction policies and practices in megacities.

Data Collection and Identification of Sound Practices

Data collection efforts have been focused on developing city profiles with useful information related to disaster risk management, and also on beginning to identify and document sound disaster management practices. These early efforts at data collection reinforce that there are recognized limitations in trying to gather complex information regarding complex matters through questionnaire instruments. Only half of the cities have responded. Additionally, we have found that disaster management people in the cities do not have all the information—no one does--and it is necessary to interview various departments and other organizations to collect basic information.

There is limited recognition in the cities that they may have already implemented sound practices, so ideas for sound practices must be coaxed from the various city departments and organizations. Practices studied so far include the Makati City Emergency Medical Services for its planning for and delivery of health services in times of disaster through a multi-agency approach and coordinated response, and the earthquake simulation (EqSim) project in Mumbai, a public awareness effort which involves road shows where over 150,000 educators, students, and others have been shown an informative presentation followed by a simulation of an earthquake.

It is clear that a vast amount of work is required to develop a really significant and useful database of practices that embody specific key attributes and criteria of "sound practices." Overcoming this will require continuing research and development of appropriate methodology as well as one-on-one work with the local researchers/investigators and city representatives, using interviews, focus groups and other techniques.

Continuity and Sustainability

Another of the lessons learned so far is that in order to get anything beyond the most superficial of inputs from the cities, it is necessary to spend time with and in the city and work closely with the local researchers and their colleagues. In the initial cities, we have seen that the repeat presence of "outside" program implementation team members is necessary to spur progress and keep interest alive. To adjust to the need for follow-up, the program implementation team revised its strategy to incorporate a plan for three city workshops rather than one workshop per city as initially planned. Also, interim visits to the two cities are proposed to advance the collection of data and documentation of sound practices, as well as to initiate the cooperative planning for the second workshop.

Local Process Orientation

As workshops are held in the cities, there are also interviews with key officials and stakeholders as well as planning and follow-up meetings with the local researchers/investigators and their local working group. The local investigators act as the local focal point for the entire process and play a key role in the field work and evaluation of findings. Their local knowledge and insights are invaluable to the process. And while there may be easier methods to collect information and insights, the contacts between the international and local participants, facilitated by the local researchers, contribute to the enlightenment of all. The meetings and city workshops are designed to meet local needs in the cities, needs which probably would not be met through less process oriented means of collecting information.

CONCLUSION AND NEXT STEPS

For the second six months of the program, the lead researcher and component coordinator, Jeannette Fernández, is moving to a new partner institution, the Pacific Disaster Center in Maui, and field work will expand to two additional cities. At the same time in Japan EdM Team 4 is continuing its strong contributions to the program, especially regarding its conceptual underpinnings, the sound practices attributes and templates, and planning for undertaking the program's second component: a specialized capacity building program designed to meet the local needs which are being identified through the current research in the cities.

This program is providing an opportunity for Metro Manila and Mumbai, and other cities over time, to learn more about their own vulnerability to disaster and actions they and other cities can take or have taken to reduce their vulnerability. It is providing a framework and mechanism for collaborative research, sharing of transferable information and strategies, and evaluation of current practices. It is involving stakeholders in research and encouraging involvement of researchers in implementation. But like all efforts to reduce disaster risk, it is a long term endeavor requiring ongoing evaluation and self-correction to ensure that this integrated process is producing the desired outcome of actually reducing disaster risk in world megacities.

[i]REFERENCES AND ACKNOWLEDGMENTS

The authors wish to thank the members of the Earthquake Disaster Research Center Team 4 (Antonio Fernández, Shadi Hijazi, and Zhila Pooyan), Local Investigators Renato Solidum and Ravi Sinha, city officials and researchers from EMI's network, and all 3cd Program participants, sponsors and contributors.

Mumbai City Profile, a 3cd Program product by EdM Team 4 with Ravi Sinha of the Indian Institute of Technology and Vilas Vishawanath Vaidya of the Municipal Corporation of Greater Mumbai.