Asia Forum 2006

Session No. 3: DRMMP Applications, Case Studies and Experiences
Chair: Yasuo Tanaka, Kobe University
Rapporteur: Jeannette Fernandez, EMI/PDC and EPN

Six very important and complementary sessions were made by representatives from Istanbul, Tehran, Tashkent, Mumbai and Shanghai, all of them members of the EMI's Asian Clusters. Also, Dr. Pariatmo from Indonesia, made a presentation on behalf of the Ministry of Education and Technology, it is expected that in the near future EMI will sign a MOU to incorporate Jakarta as one of the megacities network.

The implementation of a DRMMP is clearly city specific and it is closely related to the availability of human and financial resources but most importantly to the political will and community support and understanding of the benefits of investing in prevention and mitigation. Cities such as Tashkent for example are in the first phase of the DRMMP process, where the technical groups are completing vulnerability and risk assessment, this information will be used to decide and agree on a strategy to reduce the risk. In this case it is strongly desired that researchers, municipal authorities and the community will have the opportunity to discuss and agree on priorities for risk reduction. Istambul on the other hand is a clear example of the mainstreaming concept that the 3cd program promotes, once the assessment was done and the strategy was agreed upon, the municipality has shown ownership and specific action plans are being implemented by the appropriate municipal enterprises. Once this process of "mainstreaming" through existing municipal functions is accomplished, the whole process gets stronger and even survives the transition of different municipal administrations; such is the case of Istanbul and the urban renovation programs that have been embraced by two different municipal administrations already.

Tehran and Shanghai showed a different approach, each one of them consistent with their own culture and interest of the authorities. Tehran counts on a very comprehensive DRMMP and implementation is focused on strong and decentralized DM centers to get closer to the smaller administrative units or wards. In the case of Shanghai, instrumentation to monitor the seismic activity and prediction are the main interest of the authorities, while at the same time investing in education, particularly with children and teenagers.

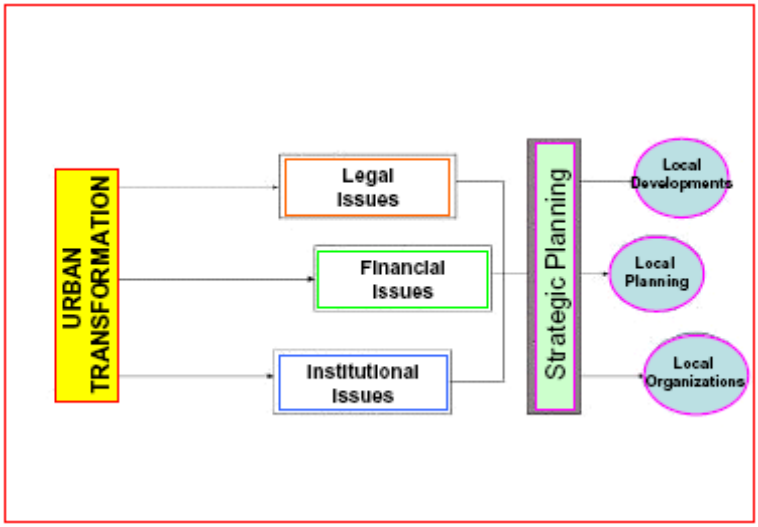
Mumbai and Jakarta discussed the lessons learned from recent disasters associated with flooding and tsunamis, in both cases, the need of a comprehensive DRM System with a multidisciplinary perspective was emphasized, along with the need of considering education, awareness raising, implementation of early warning systems and mitigation actions to reduce future impact.

Urban Renovation is promoted in Istanbul

Dr. Metin Ilkisik from the Municipality of Istanbul discussed the complexities of dealing with the actual implementation of programs and projects aiming at reducing future earthquake losses in Istanbul. After the recent earthquakes of 1999, consensus was build among the technical groups and the municipality to look into sustained actions to reduce future risk in the city. Reducing the vulnerability of existing building stock was considered one of the key elements for this purpose. Different techniques for vulnerability evaluation were considered, among them, a rapid screening method followed by detailed analysis of those critical structures was utilized. Pilot projects in Zeytinburnu (good mix of housing, business and socio-economic complexities), Fatih (historical value site) and Kucukcekmece included first phase evaluation of more than 100.000 buildings. These studies show that roughly the 20% of the Istanbul building stock can be expected to have poor or bad condition; this gives a figure of 200.000 structures (20% of 1'000.000). Massive urban renovation is one of the tools that is being used to improve the quality of the structures, and introduce a comprehensive urban process that looks into the community needs, its safety and a renewed economic activity.

Engineering solutions and approaches may turn into urban planning problems which on the other hand require informed political decisions and leadership. Local authorities need to carefully evaluate what to do to avoid negative impact, disruption in the selected areas, and the creation of additional indirect costs.

Critical aspects to take into consideration include but are not limited to: a) Re-location of people while the works are executed or moving them away from places where they have been for years, even generations, b) shutting businesses, c) Rebuilding, repairing or building new apartments, houses, etc, d) Looking into intricate old legal systems, and d) Urban planners need to deal with creative and not always traditional options.



Urban transformation implies legal, financial and institutional issues, along with a strong strategic planning process. Most of the time local governments and municipalities are not fully aware not fully prepared to face these processes. An invitation was made by the Istanbul Metropolitan Municipality to use and learn from this experience that is linked to the whole concept of the implementation of a Disaster Risk Management Master Plan that EMI and the 3cd Program promote.

Tehran Municipality promotes decentralized disaster management centers to get closer to the community

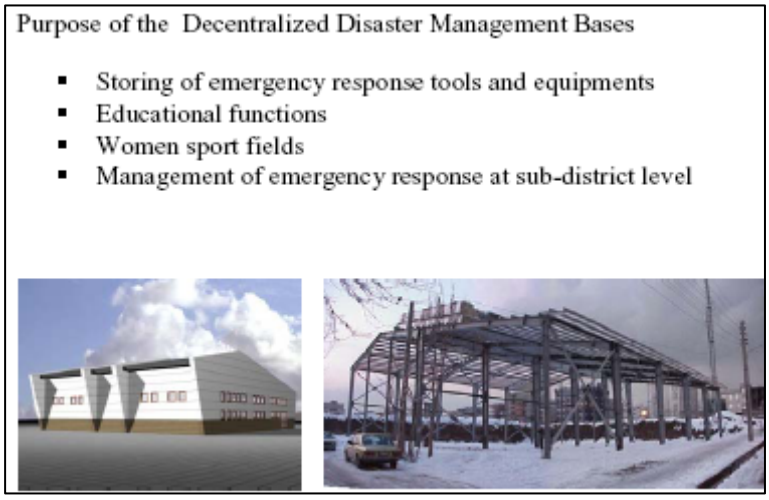
Mr. Maziar Hosseini, president of the Teheran Disaster Mitigation and Management Organization (TDMMO) at the Tehran Municipality shared with the participants the ambitious mission statement of TDMMO to become a model for megacities around the world regarding decentralized disaster management organization and the steps being taken to reach this goal through the implementation of a number of action plans, 2005-2017) identified in four major categories: Risk Assessment, Mitigation, Preparedness, Response. Risk evaluation and assessment has been completed with the assistance of JICA and complemented with additional studies, this provides de basis for the design and implementation of concrete plans in the other 3 categories. Major progress can be summarized as follows:

- **Mitigation**

Major concern is to improve the control for the structural design and construction of new buildings, retrofitting of existing building structures and lifelines such as bridges, water and gas distribution systems, land use and urban planning tools are considered to be key for mitigation, therefore there is a particular interest in this field. Capacity Builing and enhancement of TDMMO capacities to act in mitigation is also seen as very relevant and necessary.

- **Preparedness**

Education, enhancing communication options and building emergency response capacity are seen as key elements for preparedness. With the main concept of providing decentralized capabilities to the sub districts and wards, 120 multidisciplinary disaster management bases are being set, 98 of them are currently in place.



- **Response**

Twenty two specialized comities have been integrated to prepare specific action plans for this matter particularly for evacuation, fire fighting, rescue & relief, medical and health care.

The message is that implementation is not an easy task, it requires the collective support from authorities at different levels and the community, nevertheless, Tehran Municipality is doing a sustained work which approach can be useful to other megacities in the region and elsewhere.

Mumbai and the lessons learned from the 2005 flooding episode

The unprecedented rainfall of July 2005 caused severed human and economic losses in Mumbai, as reported by Mr. S.K. Singh from Greater Municipality of Mumbai. The direct impact of the event was translated into 445 casualties due to flash floods and landslides, 194 died due to various deluged-related illnesses. Disruption of the suburban train system, disruption in the roads turning the traffic chaotic where the streets were still useful, other major roads were completely flooded and couldn't the utilized, the airport was shut for two consecutive days and the electricity was also shut to avoid electric shocks. Estimated number of establishments/vehicles damaged: 50, 000 Residential establishments - partly damaged, 2,000 residential establishments - fully damaged, 40,000 commercial establishments, and 30,000 vehicles.

In preparation for 2006 monsoon season, the local authorities through the Disaster Management Office, established in the Muncipality in year 2000 has designed the following plan to reduce the impact observed last year**:**

Flood control arrangement

- 100% Desilting of entire nallas system, micro tunneling to take care of discharge Monsoon water at several chronic spots, and cleaning of Railway culverts.
- Flood-gates, sluice gates manned to operate during high tide & Low tide.
- 26 automatic weather stations with rain-gauges are installed to monitor the system.
- Widening & deepening of Mithi-River- removed 5,57,500 cu.mt.silt cleared encroachments.
- 85 Pumps with operator & mobile phone made available at chronic spots.

Communicable disease

- To control water & food borne disease cleanliness drive, wall posters, slides of do & don't in cinema media, papers.
- Medicine stock, hospitals on alert. Water samples, destroy spoilt foodstuff, etc.

Contingency Plan

- Transport system, Relief camps, hygiene & cleanliness

Enhanced Response Mechanism

- Monitoring and 'first response' enhanced

A Flood warning system is being designed and soon will be put in place, six individual command centers have been established and better coordination with the NGOs and CBOs is promoted for assistance.

Earthquake Preparedness in Shanghai

Mr. Zhu Yuanqing from the Earthquake Administration of Shanghai Municipality introduced current activities related to risk identification and assessment, education and risk communication campaigns, and the emergency response plan that the city is trying to implement, based on the national model. Since earthquakes don't happen often in Shanghai, there is a concern, local authorities and the population are not fully aware of the consequences of a severe earthquake near the city.

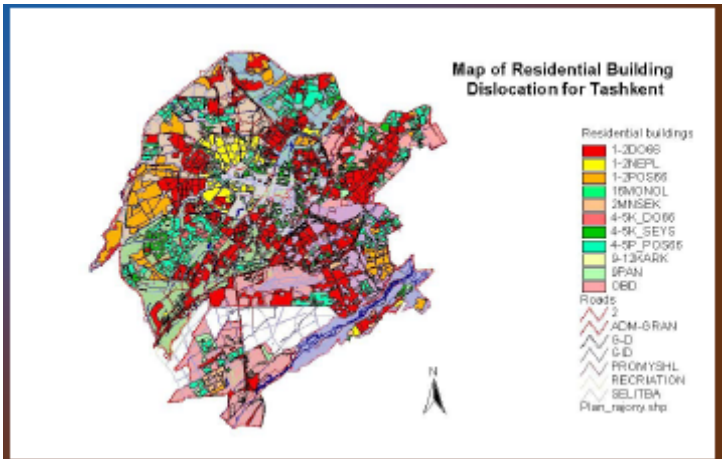
This city has a population of about 19 million inhabitants and close to 3 million that commute daily from neighboring regions, the area of the city is not very big, therefore population density is high. Recently this modern city is interested in developing several major construction projects including roads, bridges and huge buildings, therefore it is very important to clearly identify its hazard and consequent risk.

Major interest of the authorities relates to earthquake prediction and monitoring, therefore three specialized networks and instrumentation arrays have been put in place. Three instruments in the sea, 48 station within the city and 20 of them in real time, one full earthquake precursor network includes more than 60 different instr uments, and the use of microseismicity to better understand major seismicity is also promoted.

Education campaigns that include drills, periodic competitions to practice citizen's earthquake knowledge, and the constant use of the earthquake museum are some of the options for the community, particularly children and teenagers. An emergency response plan is also available, which is being socialized among different stakeholders.

Future efforts are concentrated on the ocean's bottom observation, boreholes with enough instrumentation, the development of an early warning system, a earthquake safety project for the city (City-Group), and the provision of guidelines for housing in the country side which currently don't have any regulation for their construction.

Tashkent completes its earthquake risk assessment



Professor Tursunbay Rashidov from the Usbeck Academy of Science showed the progress that the technical groups in Tashkent have done to estimate probabilistic ground accelerations and probable losses in terms of casualties and damaged and collapsed buildings. A very complete building inventory has been carried out and then a classification around 19 different types of building structures has been also completed. Intensity, peak ground acceleration, and spectral acceleration maps are available, along with earthquake damage scenarios.

Efforts have been done by the municipality in the Emergency and Preparedness side. “Rescue service-050” was established by decision of the Mayor of Tashkent City in anniversary of Tashkent earthquake, April 26, 1999, in addition to 19 Civil Protection Services Among them: medical service, fire-prevention service, service for protection of public order, service for foodstuff and food and domestic-technical service. All this services have units of increased readiness, which are on duty twenty-four hours a day.

Indonesia two years after the Tsunami

Dr. Pariatmo from the Ministry of Education and Technology reminded the participants to the 2006 Asia Forum the terrible impact of the Indian Ocean tsunami that produced 132,000 confirmed dead and 37,000 missing people, not to mention the physical devastation of several towns caused by waves raging between 4 to 35 mts.

Seismic monitoring and the design of an early warning system that can be used as a model for other cities in similar conditions have been two of the most relevant efforts. Currently seismic monitoring includes 500 accelerographic units around the country and 160 seismographs.

Padang city is supposed to be the highest prone area for a future tsunami in the Indean Ocean, therefore periodic drills are carried out in this and other costal cities such as Bali for example. December 26, 2006 was scheduled for a complete simulation in Bali with the participation of local, national and regional authorities and delegates.