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**Title of the Session:** Disaster risk management (DRM) in megacities: challenges & opportunities

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## **Summary**

More than half of the world population lives in cities now and the tendency to move from rural to urban seems inevitable. This process is adding up new challenges to urban neighborhoods, such as slum generation, environmental pollution, lack of infrastructure and socio-economic disparity. In megacities these problems are even more complex due to high level of exposure and interrelation between these problems. Naturally the structure of DRM in megacities must be formed in accordance with this complexity, which requires efficient administration. On the other hand megacities have relatively better access to resources, both in financial and social basis.

## **Context**

According to UN<sup>1</sup>, 54% of the world's population lives in urban areas in 2014 and this number is projected to be 66% in 2030. It is also stated that almost half of these dwellers live in small cities with population less than 500,000 while 13% lives in megacities with inhabitants more than 10 million. Megacities are not just important by means of their population; they are also the cores of their national wealth; especially in developing countries. As seen in the table below, the GDPs of megacities constitute the biggest portion of their national GDPs<sup>2</sup>.

Megacity	Country	City GDP in % of country's GDP
Cairo	Egypt	50
Manila, Quezon	Philippines	30
Mexico City	Mexico	30
Jakarta	Indonesia	30
Johannesburg, East Rand	South Africa	30
Bangkok	Thailand	35
Istanbul	Turkey	25
Sao Paulo	Brazil	25
Teheran	Iran	40

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<sup>1</sup> UN, World Urbanization Prospects-The 2014 Revision, 2014

<sup>2</sup> MunichRE, Megacities – Megarisks Trends and challenges for insurance and risk management, 2004

But megacities should not be solely considered as economic wealth providers, they are also centers of cultural, educational and touristic attention in their countries. Moreover most of the megacities are regional (and sometimes international) focal points. Thus megacities have so much to offer and they are natural attraction points. This attraction brings along challenges and opportunities to DRM process as well.

DRM is defined by UNISDR<sup>3</sup> as: "*The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster.*" Based on this statement and implementations in general, it can be stated that DRM is composed of three main phases: disaster risk reduction, response and recovery<sup>4</sup>. In other words, DRM is actually the efficient administration of these three complementary phases. Considering the characteristics of megacities along with the DRM process some of the main challenges are listed below.

Challenges		
DRR	Response	Recovery
<ul style="list-style-type: none"> <li>• Multiple types of hazards and risks</li> <li>• Complex infrastructure</li> <li>• Dense population</li> <li>• Slums</li> <li>• Clustering of the commercial and industrial sectors</li> <li>• Immigration pressure</li> <li>• GHG emissions</li> <li>• ...</li> </ul>	<ul style="list-style-type: none"> <li>• High level of losses <ul style="list-style-type: none"> <li>◦ Casualties</li> <li>◦ Buildings</li> <li>◦ Infrastructures</li> <li>◦ Economic</li> <li>◦ Social</li> </ul> </li> <li>• Cascading effects of disasters</li> <li>• Immediate healthcare needs and epidemics</li> <li>• Criminal events</li> <li>• ...</li> </ul>	<ul style="list-style-type: none"> <li>• Re-establishment of disaster stricken neighborhoods</li> <li>• Temporary accommodation</li> <li>• Psychosocial treatment</li> <li>• Restoration of infrastructure</li> <li>• ...</li> </ul>

It must be noted that, the challenges counted here can also be valid for smaller scale cities, but biggest difference is the extent (scale and quantity) of the exposure and vulnerability. Moreover these problems are correlated with each other that make the complications more difficult to govern.

It is relatively harder to categorize the opportunities of megacities since all of them (in accordance with their own characteristics) are valid for all phases of DRM. In general, these opportunities increase megacities' resiliency compared to small and medium sized cities. For example megacities are more developed than other cities in their countries in economical means and this is a big advantage for DRR activities. Thus policy makers can spare budget to hazard analysis studies, R&D and capacity development activities. Budget is also crucial in

<sup>3</sup> UNISDR Terminology on Disaster Risk Reduction, 2009

<sup>4</sup> [http://www.preventionweb.net/files/21008\\_21008torqaiddiagrammaticframeworkfo.pdf](http://www.preventionweb.net/files/21008_21008torqaiddiagrammaticframeworkfo.pdf)

response phase to allocate finances immediately in a case of emergency. Another example is integration with international frameworks; megacities are relatively more integrated with these frameworks that lead them to mainstream knowledge from experiences all around the world. In addition, these relationships let them provide budget easier for risk financing mechanisms. Examples can be varied and increased based on different cities or disaster types.

<i>Opportunities</i>
<ul style="list-style-type: none"><li>• Wealth</li><li>• Integration with regional and international frameworks</li><li>• Qualified labor force</li><li>• Developed scientific background</li><li>• Youth</li><li>• Cultural diversity</li><li>• Dynamism</li><li>• Capacity to cope</li><li>• Variety of NGOs</li><li>• ...</li></ul>

To summarize, in order to establish an efficient DRM process, policy makers must be aware that challenges and opportunities in a megacity can reach way beyond their assumptions. While megacities can cause complex problems, they might also have the capacity to cope against them.