Geophysical Research Abstracts
Vol. 19, EGU2017-4513, 2017
EGU General Assembly 2017

Megacity Indicator System for Disaster Risk Management in Istanbul (MegaIST)

Emin Yahya Menteşe (1), Osman Kılıç (1), Mahmut Baş (1), Bijan Khazai (2), Betul Ergün Konukcu (1), and Ahmet Emre Basmacı (1)

(1) Istanbul Metropolitan Municipality, Istanbul, Turkey, depremzemin@ibb.gov.tr, (2) Risklayer UG, Karlsruhe, Germany, info@risklayer.com

Decision makers need tools to understand the priorities and to set up benchmarks and track progress in their disaster risk reduction activities, so that they can justify their decisions and investments.

In this regard, Megacity Indicator System for Disaster Risk Management (MegaIST), is developed in order to be used in disaster risk management studies, for decision makers and managers to establish right strategies and proper risk reduction actions, enhance resource management and investment decisions, set priorities, monitor progress in DRM and validate decisions taken with the aim of helping disaster oriented urban redevelopment, inform investors about risk profile of the city and providing a basis for dissemination and sharing of risk components with related stakeholders; by Directorate of Earthquake and Ground Research of Istanbul Metropolitan Municipality (IMM).

MegaIST achieves these goals by analyzing the earthquake risk in three separate but complementary subcategories consisting of "urban seismic risk, coping capacity and disaster risk management index" in an integrated way. MegaIST model fosters its analyses by presenting the outputs in a simple and user friendly format benefiting from GIS technology that ensures the adoptability of the model's use.

Urban seismic risk analysis includes two components, namely; Physical Risk and Social Vulnerability Analysis. Physical risk analysis is based on the possible physical losses (such as building damage, casualties etc.) due to an earthquake while social vulnerability is considered as a factor that increases the results of the physical losses in correlation with the level of education, health, economic status and disaster awareness/preparedness of society.
Coping capacity analysis is carried out with the aim of understanding the readiness of the Municipality to respond and recover from a disaster in Istanbul can be defined both in terms of the Municipality's operational capacities – the capacity of the Municipality in terms of the demand on its resources to respond to emergencies and restore services – as well as functional capacities – the policies and planning measures at the Municipality which lead to reduction of risk and protection of people.

Disaster Risk Management Index (DRMI) is used as "control system" within the conceptual framework of MegaIST. This index has been developed to understand impact of corporate governance and enforcement structures and policies on total Urban Seismic Risk and in order to make the performance evaluation.

Also, DRMI is composed of macro indicators that are developed in order to monitor progress in reducing disaster risk management of institution. They are presented in four broad indicator groups: Legal and Institutional Requirements, Risk Reduction Implementation and Preparedness Activities, Readiness to Respond and Recover, and Strategy and Coordination.

As a result; in MegaIST, with the identification and analysis of physical and social vulnerabilities along with coping capacity and disaster risk management performance indicators; an integrated and analytical decision support system has been established to enhance DRM process and reach to a disaster resilient urban environment.