The Dhaka Profile and Earthquake Risk Atlas is a compilation of physical & socio-economic profiles, built environment, hazards, vulnerability & risks information, and maps of Dhaka. It was based on the initial results and findings of the Bangladesh Urban Earthquake Resilience Project (BUERP).

The Atlas will help in providing essential scientific data and information to improve capacity for earthquake resilience of Bangladesh.

Dhaka Profile
- Background
- Physical and Socio-economic Profile Components
  - Political
  - Physical
  - Socio-cultural
  - Built Environment

Earthquake Hazards
- Bangladesh Tectonics
- Historical Seismic Activity
- Modeled Sources
- Soil Classification
- Peak Ground Accelerations
- Liquefaction

Earthquake Vulnerability and Risk Analysis
- Vulnerability Definition
- Physical Vulnerability
  - Building Exposure and Inventory
  - Buildings Vulnerability
  - Building Losses
  - Lifelines
  - Essential Facilities
- Social Vulnerability
  - Casualties
  - Population Affected
  - Economic and Property Losses

Risk Definition
- Physical Risk Indicators
- Socio-Economic Impact Factors

Urban Disaster Risk Index
- Physical Risk
- Socio-Economic Impact Risk
- Combined Risk

The Dhaka Profile and Earthquake Risk Atlas is one of the tools that will assist to raise awareness and support decision making and policies aimed at mitigating the impact of earthquake hazards through structural and non-structural vulnerability reduction measures.

The Risk Atlas is supported by a Geographic Information System (GIS) which will enable users to generate their own maps for their disaster risk resilient activities. By having all data into a single spatial database, stakeholders can work more efficiently in planning and executing Disaster Risk Reduction (DRR) activities.

For more information on where to get a copy of the Dhaka Profile and Earthquake Risk Atlas, contact:

Disaster Risk Management and Climate Change Unit
South Asia Sustainable Development Department
The World Bank Office Dhaka
Plot E 32, Sher-e-bangla Nagar, Agargaon
Phone: 880-2-8159001-28

Earthquakes and Megacities Initiative
Puno Building, 47 Kalayaan Avenue, Diliman, Quezon City, Metro Manila, Philippines 1101
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www.emi-megacities.org

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The Risk Atlas is for everyone and can be used by anyone. Experts, professionals, and specialists in the field of Hazard Vulnerability Risk Assessment (HVRA) as well as practitioners and researchers in Disaster Risk Reduction and Management (DRRM) and its related fields can find relevant information. Stakeholders such as government officials, community leaders and the private sector involved in and has interests in urban DRRM can use information in the Risk Atlas for educational, communication, and planning purposes.

What earthquakes have impacted Dhaka?

**Intensity VIII**
- Bengal Earthquake, 1885. Magnitude 7
- Great Indian Earthquake, 1897. Magnitude 8.1

**Intensity VII**
- Srimangal Earthquake, 1918. Magnitude 7.6

**Intensity VI (intensity where structural damage begins to occur)**
- 1923, Magnitude 7.1
- 1934, Magnitude 8.1
- 1935, Magnitude 6.0
- 1943, Magnitude 7.2
- 2001, Magnitude 5.1

Ground motion based on postulated magnitude 7.5 earthquake on the Madhupur Fault

Ground motion is the measure of the amplitude and period of seismic waves once it arrives at the earth’s surface. Higher ground motion may bring higher damage or impact.
WHAT CAN BE DONE?

Awareness Raising
Knowledge of hazards and risks by the general public will raise awareness and build social responsibility and social resilience.

Competency Building
Training of architects, engineers, planners, and construction professionals will improve standards for earthquake-resilient construction, thus protecting people and property.

Improving Response
Having competent Emergency Management plans, drills, exercises and trainings for first responders.

Implementation of Building Codes
Implementation and enforcement of the building codes will ensure that buildings will protect their occupants and reduce damages and losses.

Risk-Sensitive Land Use Plans
Understanding of hazards and risks can inform land use plans and zoning ordinances to build away from hazardous areas and reduce exposure to earthquakes.

Expected losses from a postulated magnitude 7.5 earthquake on the Madhupur Fault

US$5.7 billion estimated losses

over 200,000 injured & 50,000 fatalities

180,000 estimated damaged buildings

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Bangladesh Urban Earthquake Resilience Project
February 2014

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Bangladesh is exposed to significant seismic risk due to its proximity to the seismically active tectonic plates. A Magnitude 7.5 event on the Madhupur fault and a Magnitude 8 event on the Plate Boundary 2 fault have the greatest impact on the city of Dhaka, Bangladesh’s capital.

*The Madhupur fault event is to the north of the city. Ground motions generally decrease from north to south and are amplified in areas of soft soil. The Plate Boundary 2 fault is to the east of the city and ground motions decrease going east to west.*

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