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ডিজাস্টার রেজিলিয়েন্স এন্ড ইঞ্জিনিয়ারিং বিভাগ
পরিবেশ বিজ্ঞান ও দুর্যোগ ব্যবস্থাপনা অনুষদ
পটুয়াখালী বিজ্ঞান ও প্রযুক্তি বিশ্ববিদ্যালয়
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Earthquake Risk in Bangladesh

Bangladesh is one of the most tectonically active regions in the world. It sits where three tectonic plates meet: the Indian Plate, the Eurasian Plate, and the Burmese Plate. There are many active faults along this boundary, such as the enormous Dauki fault that borders northern Bangladesh. Of course, active faults can also generate huge earthquakes and scientists think that a major earthquake is very closer to Bangladesh and only a matter of time.

Factors contributing to earthquake risks in Bangladesh

The various factors contributing to the earthquake risk in the urban and rural areas of Bangladesh may be summarized below:

a) Absence of earthquake awareness

b) High population density and construction lacking of legal enforcement of building code and its seismic design provisions.

c) Poor quality of construction materials and improper construction method.

d) Economic limitation.

e) Possibility of fire outbreaks due to rupture of gas pipelines or electric short-circuit during an earthquake and inadequate firefighting facilities.

f) Inadequate road width and space between buildings preventing rescue operations and firefighting vehicles to reach certain areas.

g) Inadequate exit (at the same time) for the occupants of a building during an emergency.

H) Lack of facilities (rescue equipment, trained staff, medical personnel, and medical facilities) and preparedness for emergency response and recovery operations following an earthquake.

i) Lack of earthquake resistant design of life line facilities which include power plants, power stations, bridges, communication control stations, gas and water supply stations earthquake resistant design. Etc.

Most vulnerable zones

In the north and northeast of Bangladesh, there are areas of high seismic activity and some of the major earthquakes originating in these areas have affected the adjacent regions of the country. The whole of Bangladesh is divided into three seismic zones.

1. The northern part of the country that includes the greater districts of Rangpur, Mymensingh, and Sylhet are in the Zone-I where earthquake shock of maximum intensity of IX of the Modified Mercalli Scale is possible.
2. The Zone-II includes the greater districts of Dinajpur, Bogra, Dhaka and Chittagong and the shocks of intensity of VIII are possible.
3. The southern part of the country, the least active region, where the maximum intensity is not likely to exceed VII, is in the Zone-III.

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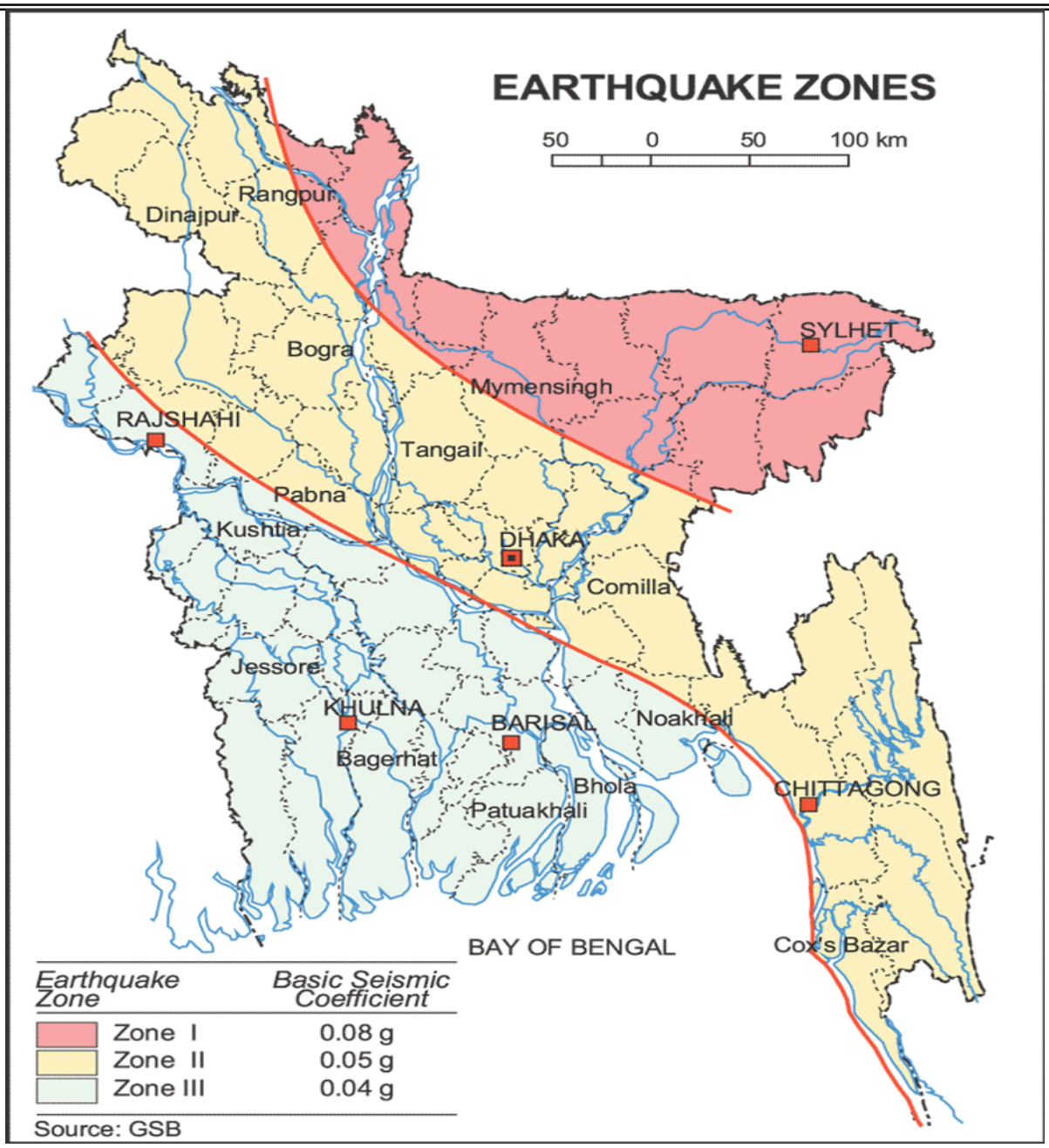

Figure: Earthquake zones of Bangladesh (GSB)

Emerging risks in Dhaka city

Dhaka city, the soul of Bangladesh is highly vulnerable to the earthquake disaster due to high density of population, unplanned infrastructure and close proximity with India and Myanmar's active seismic area, poor economic condition, poor emergency preparation and recovery capability.

Occurrence of earthquakes cannot be prevented, but the impact of these extreme events can be minimized by adopting preparedness measures. These measures can be adopted at various levels. At the state and community level, building-safety codes and land use zoning ordinances both represent measures designed

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to reduce earthquake losses. At the individual or household level, preparedness measures include becoming informed about the earthquake hazard, making the home or workplace safer from earthquake damage, knowing how to turn off gas and other utilities, access to a fire extinguisher, and having a first-aid kit available.