

**GOVERNMENT OF INDIA  
SCIENCE AND TECHNOLOGY  
LOK SABHA**

UNSTARRED QUESTION NO:6939

ANSWERED ON:11.05.2005

POSSIBILITY OF NATURAL DISASTER RISKS IN INDIAN CITIES

Gaikwad Shri Eknath Mahadeo

**Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:**

(a) whether 'Munich Re', in its recent report "Megacities-Megarisks" has listed Mumbai, Bangalore Delhi and Kolkata among high natural disaster risk cities, with possibility of occurrence of disasters like earthquakes, Tsunamis, Tropical Storms, Volcanic Eruptions, Winter Storms and Floods;

(b) if so, the position Mumbai, Bangalore, Delhi and Kolkata hold on the risk index in the Global Mega Risk Map; and

(c) the steps being taken to provide adequate forewarning systems for such disasters in these cities?

**Answer**

THE MINISTER OF STATE (INDEPENDENT CHARGE) OF THE MINISTRY OF SCIENCE & TECHNOLOGY AND MINISTER OF STATE (INDEPENDENT CHARGE) OF THE DEPARTMENT OF OCEAN DEVELOPMENT (SHRI KAPIL SIBAL)

(a) No such report has been received by Government.

(b) Does not arise.

(c) As per the seismic zoning map of India, the country has been divided into four seismic zones, namely, Zone-II to V. Zone-V is considered to be the most seismically active region, while zone-II is the least. Mumbai, Bangalore, Delhi and Kolkata fall in seismic zones III, II, IV and III, respectively. Forewarning of earthquake is not yet possible anywhere in the world, however, damage to property and structure can be minimized by adopting earthquake resistant design and construction guidelines prepared by Bureau of Indian Standards. Also, microzonation of important cities has been initiated, which will help in assessment of related damage potential of smaller zones under different soil conditions and take appropriate measures to reduce the risk.

Delhi and Bangalore are not affected by tropical cyclone, while the frequency of cyclones affecting Mumbai is very low and Kolkata, being island, is not likely to be affected by storm surges. India Meteorological Department (IMD) has the responsibility to monitor and forecast tropical cyclone and severe weather events. A good network of meteorological observatories is operated by IMD covering the entire coastline and islands. These are supplemented by observational data from Radar and Satellite systems. Doppler weather radar operational at Kolkata, Machilipatnam and Chennai provides very important information about the intensity and location of severe weather events. Government has also prepared a plan to set up an early Tsunami warning system in Indian Ocean. Department of Ocean Development, Department of Science and Technology and Council of Scientific and Industrial Research are the lead agencies involved in this endeavour.