

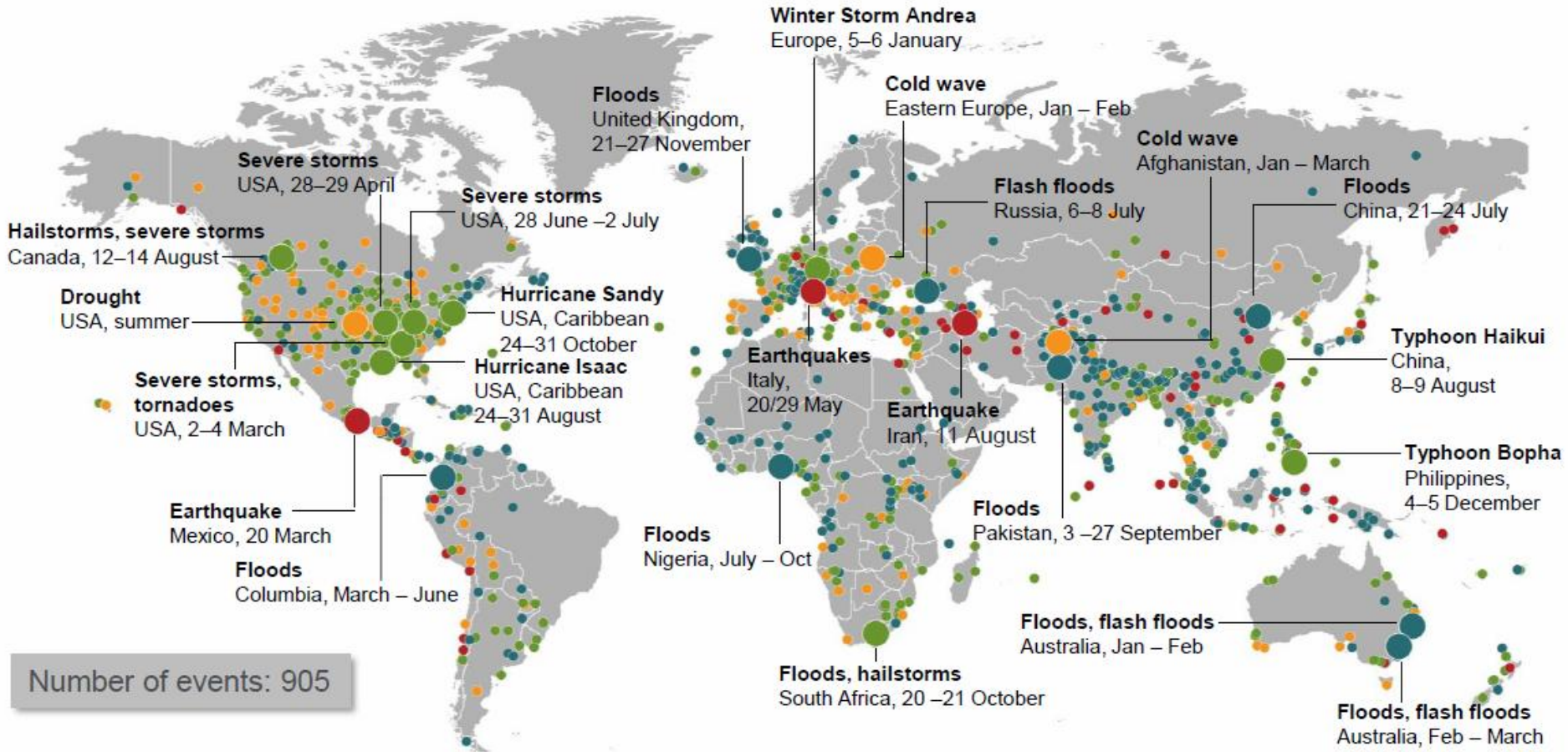


Role of Corporate Sector in Disaster Management

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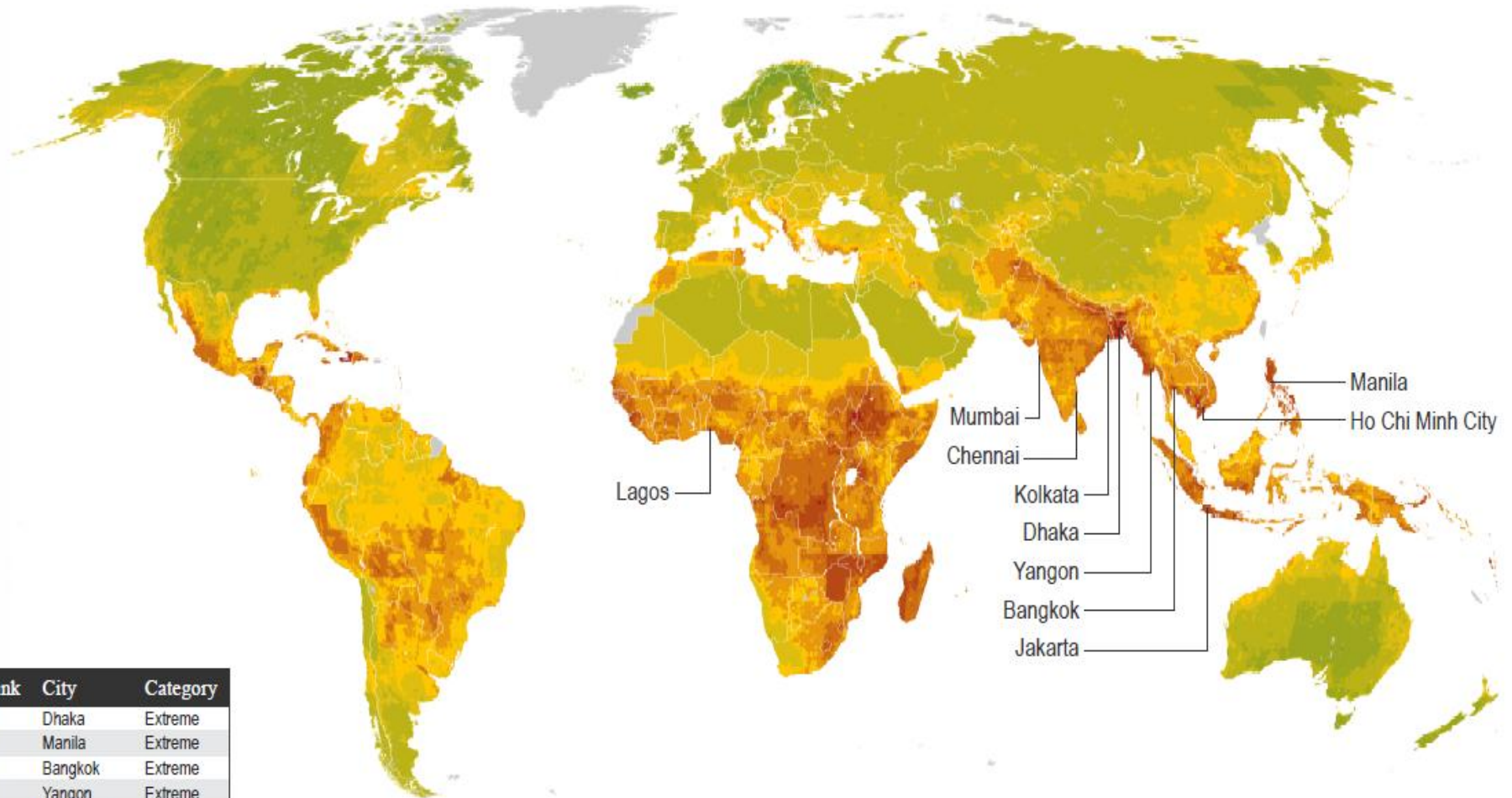
World map



Number of events: 905

- Natural catastrophes
- Selection of significant Natural catastrophes
- Geophysical events (earthquake, tsunami, volcanic activity)
- Meteorological events (storm)
- Hydrological events (flood, mass movement)
- Climatological events (extreme temperature, drought, wildfire)

Out of 905 natural disasters worldwide, nearly 10% in India



Rank	City	Category
1	Dhaka	Extreme
2	Manila	Extreme
3	Bangkok	Extreme
4	Yangon	Extreme
5	Djakarta	Extreme
6	Ho Chi Minh	Extreme
7	Kolkata	Extreme
8	Mumbai	High
9	Chennai	High
10	Lagos	High

**Globally Increasing Trend of Disasters:
78 in 1970 to 348 in 2004 and 905 in 2012**



Indian Scenario

- British risk assessors Maplecroft conducted a survey “Natural Hazards Risk Atlas 2011”
- India along with six other countries (Mexico, Turkey, Philippines, Indonesia , Italy and Canada) was rated as "high risk" in terms of human and economic losses

According to the World Bank:

- Direct losses from natural disasters have been estimated to amount up to 2% of India's GDP
- Initial GDP growth forecast for the Financial Year 2013-14 is 5.7 %. Revised forecast 4.8%. Estimated GDP (2012-13) - Rs. 55,05, 437 crore

Vulnerability Profile of India

- Over 40 million hectares (12% of land) is prone to floods and river erosion
- Of the 7,516 km long coastline, close to 5,700 km is prone to cyclones and tsunamis
- 58.6% of the landmass is prone to earthquakes of moderate to very high intensity
- Western & Eastern Himalayan States and Western Ghat States are at risk from landslides and avalanches
- 68 per cent of the cultivable area is vulnerable to drought
- Further, the vulnerability to Chemical Biological, Radiological and Nuclear (CBRN) emergencies has also increased

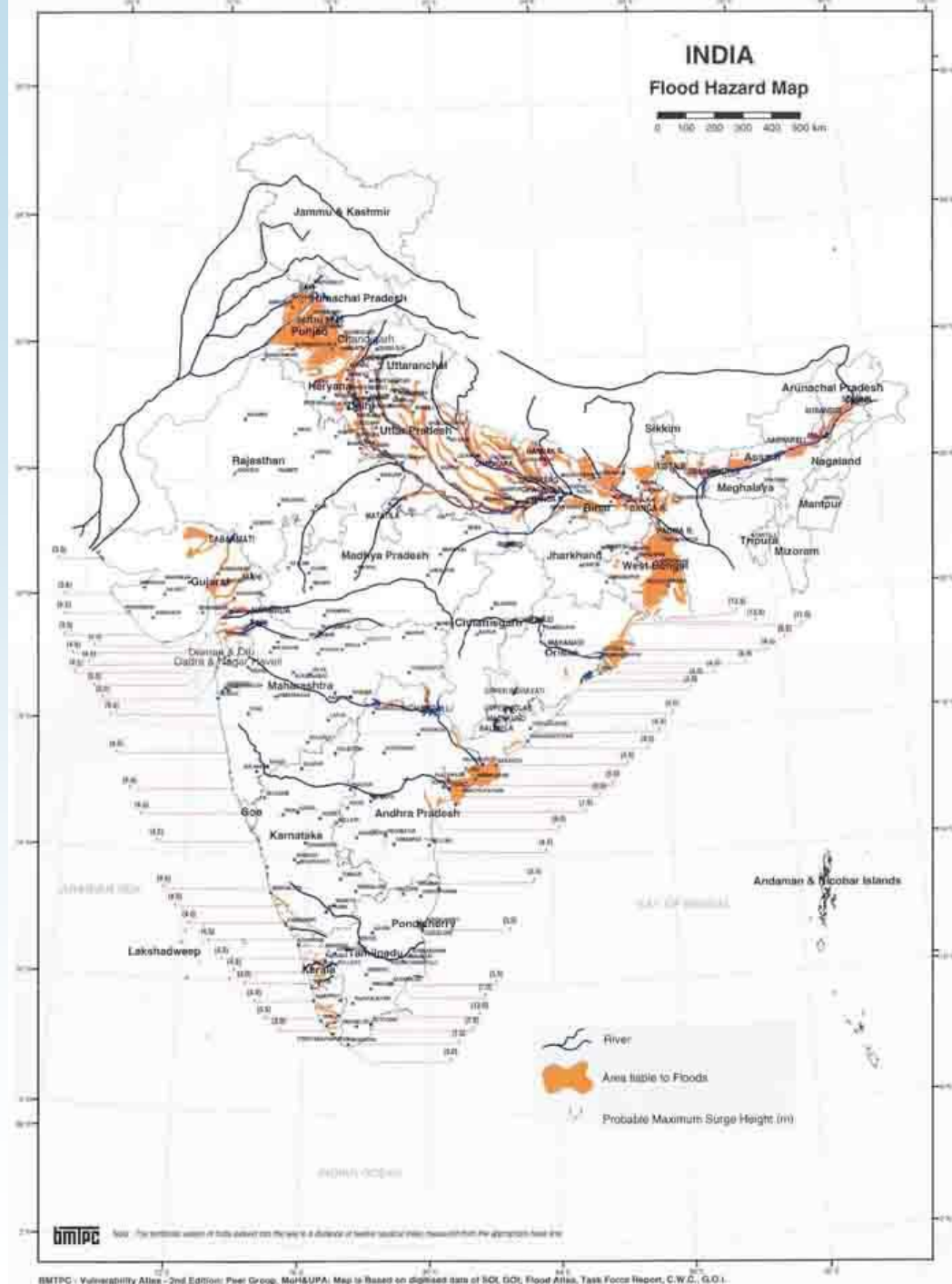
Floods

Vulnerability – 12% of total landmass

Most of the States in the country are vulnerable to floods in varying degree

High Vulnerability States are:

- Assam
- Bihar
- Andhra Pradesh
- Odisha
- West Bengal
- Gujarat
- Maharashtra
- Karnataka
- Gujarat
- Uttar Pradesh
- Uttarakhand
- Himachal Pradesh
- Delhi
- Punjab
- Haryana
- Kerala



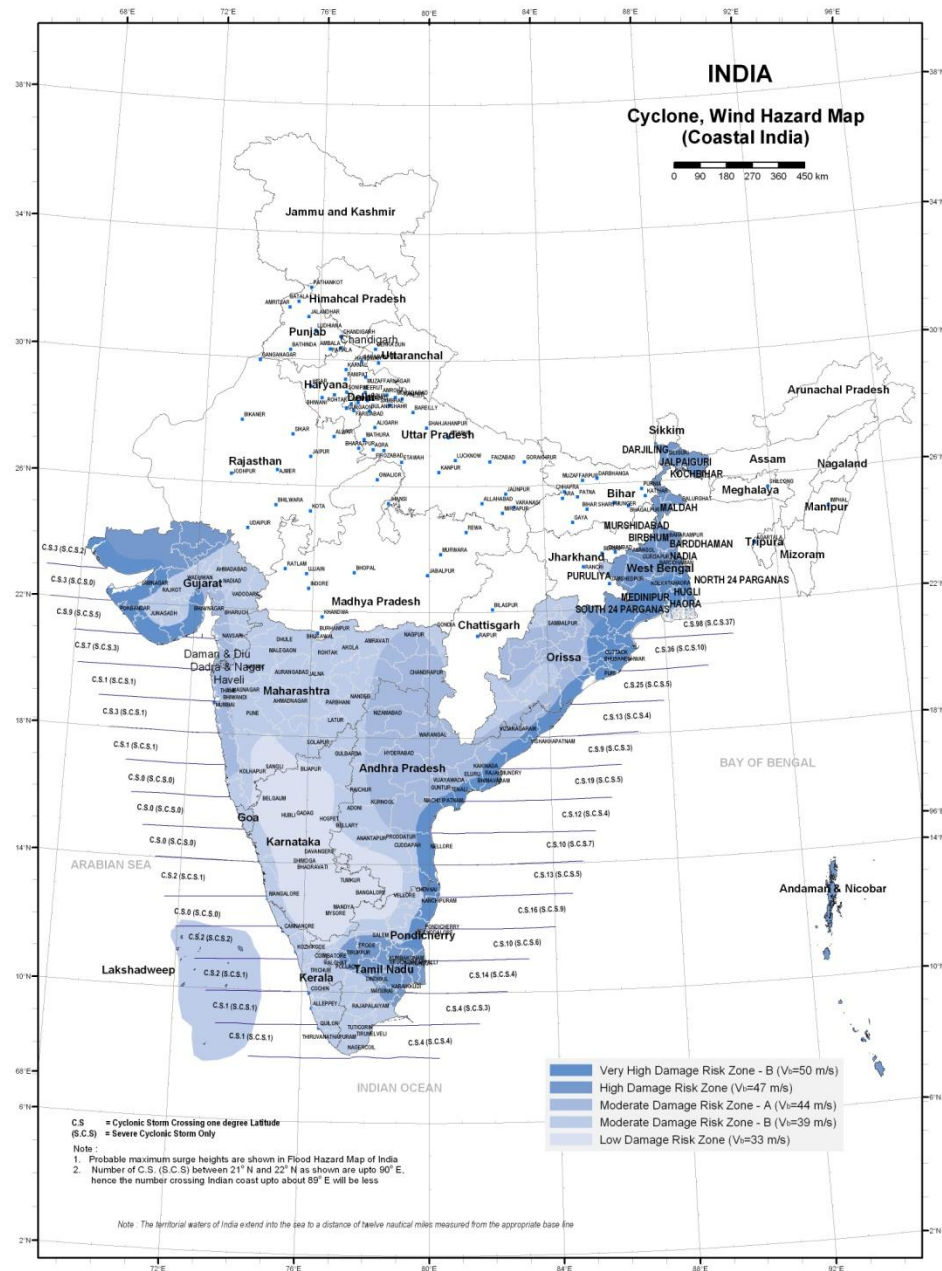
Cyclone & Tsunami

Total Coastline – 7,516 kms

Vulnerable to Cyclones & Tsunamis – 5,700 kms

Out of 13 States and UTs, some high vulnerable States are:

- Odisha
- Andhra Pradesh
- West Bengal
- Tamil Nadu
- Gujarat
- Kerala

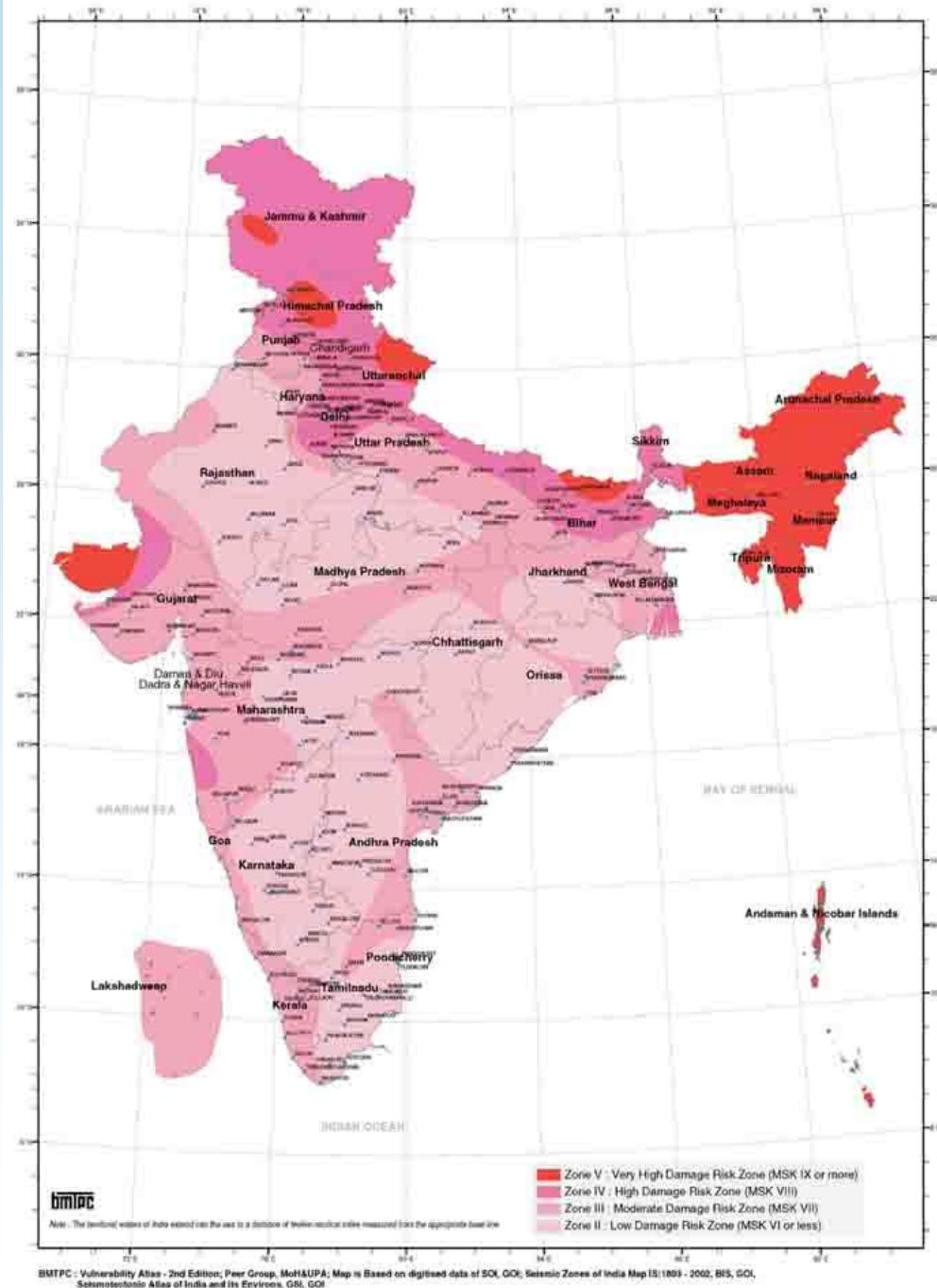


Earthquake

Vulnerability – 58.6% of the total landmass

High Vulnerability States (Zone IV & V):

- Jammu & Kashmir
- Himachal Pradesh
- Uttarakhand
- Punjab
- Delhi
- Gujarat
- Bihar
- North Bengal
- NE States
- Sikkim



Cities at Risk

- Increasing density of population, economic activities and urbanization have put Cities at greater risk
- Risk primarily from Structural Collapse, Urban Flooding, Fire and Chemical & Biological
- Inadequate regulations and enforcement on Built Environment increases earthquake vulnerability
- Insufficient technical expertise
- Twin challenges of building new disaster resilient infrastructure and making existing infrastructure safer through retro-fitting

India – Major Disasters (Last 2 Decades)

State	Year	Place	Disaster	Loss of Lives (Approx)
Uttar Pradesh	1991	Uttarkashi	Earthquake	2,000
Maharashtra	1993	Latur	Earthquake	9,500
Uttarakhand	1999	Chamoli	Earthquake	2,000
Odisha	1999	Odisha	Cyclone	9,887
Gujarat	2001	Bhuj	Earthquake	13,805
South East Coast	2004	South East Coast	Tsunami	13,377
Jammu & Kashmir	2005	Jammu & Kashmir	Earthquake/ Avalanche	1,336
Maharashtra	2005	Mumbai	Flood/Urban Flooding	1,000
Bihar	2008	Kosi Flood	Flood	530
Jammu & Kashmir	2010	Leh Cloudburst	Cloudburst	255
Sikkim	2011	Sikkim	Earthquake	111
Uttarakhand	2013	Uttarakhand	Flood/Landslide	4,092
Odisha, West Bengal, Andhra Pradesh	2013	Odisha, WB, AP	Cyclone Phailin & Floods	45

India – Other Significant Disasters (2006-13)

State	Year	Place	Disaster
Gujarat	2006, 2009	Gujarat	Floods
Bihar	2007	North Bihar	Floods
Assam	2008, 2012	Assam	Floods
West Bengal	2009	Coastal Areas	Cyclone Aila
Andhra Pradesh & Karnataka	2009	Andhra Pradesh & Karnataka	Floods
Punjab & Haryana	2010	Punjab & Haryana	Floods
Maharashtra	2010	Mumbai Port Trust	Chlorine Leakage
Karnataka	2010	Bellary	Building Collapse
Punjab	2010	Jalandhar	Building Collapse
Delhi	2010	Mayapuri	Radiation Leakage
Andhra Pradesh	2012	Coastal Areas	Cyclone Nilam
Kerala	2013	Idukki	Landslide
Maharashtra	2013	Mumbra	Building Collapse
Andhra Pradesh	2013	Coastal Areas	Cyclone Helen, Lehar

29 Major landslides in the North Eastern States only between 2009-13 including two most recent ones in Mizoram and Arunachal Pradesh

DM Act 2005: A Paradigm Shift

- From a response and relief-centric approach to a proactive, holistic approach covering prevention, mitigation and preparedness to rehabilitation, reconstruction and recovery
- It also provides for:
 - The creation of a policy, legal and institutional framework, backed by effective statutory and financial support
 - The mainstreaming of multi-sectoral DM concerns into the developmental process and mitigation measures through projects
 - **A continuous and integrated process of planning, organizing, coordinating and implementing policies and plans in a holistic, community based participatory, inclusive and sustainable manner**
- Under the Act, the States are the First Responder, while the Centre plays a supportive role

Role of Corporate Sector in Disaster Management

- Disasters being unforeseen events that cause great damage, destruction and human suffering require immediate coordinated and effective response by Government/ Organisations/ Agencies, including Private and Corporate Sector
- As per the DM Act, 2005, “Disaster Management is a continuous and integrated process of planning, organising, coordinating and implementing measures for
 - prevention of damage or threat of any disaster
 - mitigation or reduction of risk
 - capacity building
 - preparedness
 - prompt response
 - evacuation, rescue and relief
 - rehabilitation and reconstruction
- As per Companies Act, 2013, large profit making Corporates have to earmark at least two percent of the average net profits of the company made during the three immediately preceding financial years, in pursuance of its Corporate Social Responsibility Policy and make projects and programmes accordingly

Role of Private and Corporate Sector in Disaster Management

- The private sector has always been involved in DM System/ Cycle. The involvement and association of the corporate sector with national risk reduction and risk management initiatives and with dissemination of appropriate and practical structural and non-structural disaster prevention and mitigation measures necessary for their safe and disaster-free functioning has been accorded priority as part of a strategy to systematically mainstream holistic disaster management into the functioning of the corporate sector
- The private sector has been the main source of supplies to all agencies involved in DM both at the Centre and at the State level e.g. hardware like vehicles, fire engines, equipments for Forces like National Disaster Response Force (NDRF), boats, tents, food supplies, medicines, pre-fab shelters, communication equipments, earth moving machinery, aircraft, helicopters etc.

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Role of Private and Corporate Sector in Disaster Management

- Important role in watershed management, channel and drainage improvement, construction of reservoirs, anti-erosion works
- In government projects like National Cyclone Risk Mitigation Project (NCRMP) Phase I for Andhra Pradesh and Odisha, out of the budgeted amount Rs 1496.71 crores, large expenditures incurred on construction of Multi Purpose Shelters (MPS), roads, bridges, embankments (saline) mainly through private agencies
- Phase II sanctioned of about US\$ 250 million for the States of West Bengal, Kerala, Maharashtra and Gujarat
- In high-tech Early Warning Systems (EWS), e.g. Doppler Weather Radars (DWR), Automatic Weather Stations, Automatic Rain gauge Stations etc. large expenditure are proposed for procuring equipments manufactured mainly through Corporates

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CSR Role of Corporate Sector in recent Disasters

- The contribution of the Corporate Sector has been notable especially in the aftermath of the devastating Super-Cyclone Odisha in 1999, Bhuj Earthquake in 2001 and Tsunami in 2004
- During Kosi Floods and Andhra Pradesh & Karnataka Floods in 2008 & 2009 respectively, the Corporate Sector came forward in providing relief in a big way
- Corporate Sector played a significant role in the aftermath of 16-17 June disaster in Uttarakhand
 - Major corporate houses especially Tatas and Organisations such as CII/ FICCI, CSOs and NGOs like Rotary International are contributing substantially to the rebuilding effort
- Tata Institute of Social Sciences (TISS) prepared an Impact Assessment Report of the most devastated villages of Uttarakhand
- Supporting livelihood programmes

Integrating DM into Developmental Efforts

- Awareness generation
- Training
- Mock drills
- Development of on-site and off-site DM plans
- Preparation of inventory of resources
- Sensitization programme
- Organisation of annual event

In addition, Corporate Sector can play a pivotal role in development and enforcement of an appropriate techno-legal regime which involves examining and reviewing the existing building by-laws and codes/ rules. Further Corporate Sector can support a techno-financial regime whereby financial institutions insist on adoption of disaster resistant construction as a pre-condition for providing loans/ grants

Other Potential Areas for Participation by Private/ Corporate Sector

- R&D for introduction of cost-effective technology/ equipment for hazard-resilient housing and infrastructure
- Supporting and popularizing traditional and modern disaster mitigation approach/ method
- Environmental studies and preservation of flora and fauna
- Bringing in State-of-the-Art DM technologies from developed economies and best global practices

Strength of Corporate Sector in DM

- Introduction of new technology and innovative approach
- Management skills
- Arranging essential supplies and equipments
- Providing Risk transfer mechanism through insurance products
- Flexibility and speed of implementation
- Capacity building of workers and local communities
- Forging public-private partnerships

Thank You