सत्यमेव जयते

Integrating Disaster Risk Reduction into Preparedness: Perspectives from India

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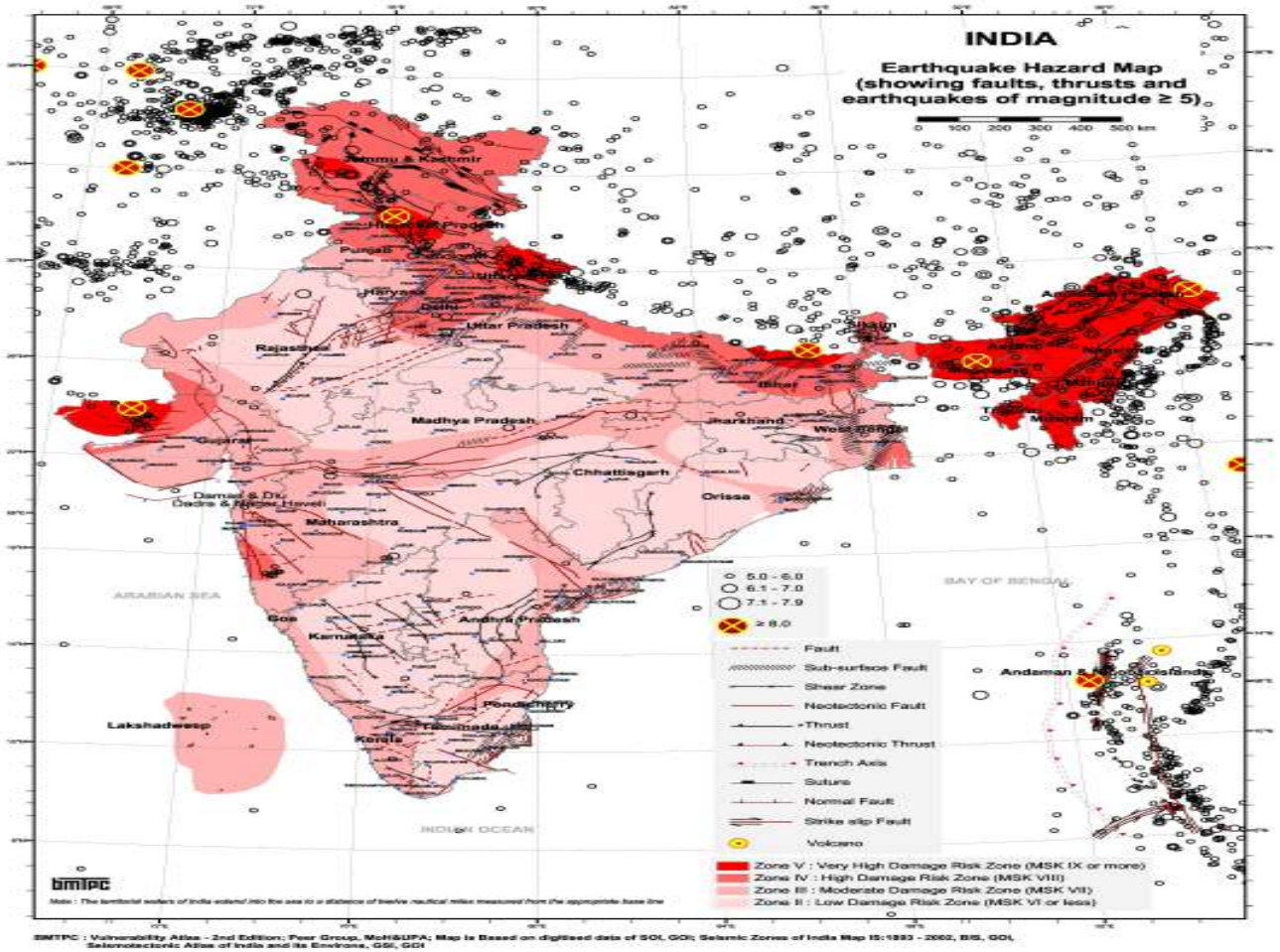
Hazards in India

- India is traditionally vulnerable to large number of natural disasters on account of its unique Geo-climatic conditions;

- Situation further aggravated because of 241 districts in 21 states are prone to multi-hazards risks; and

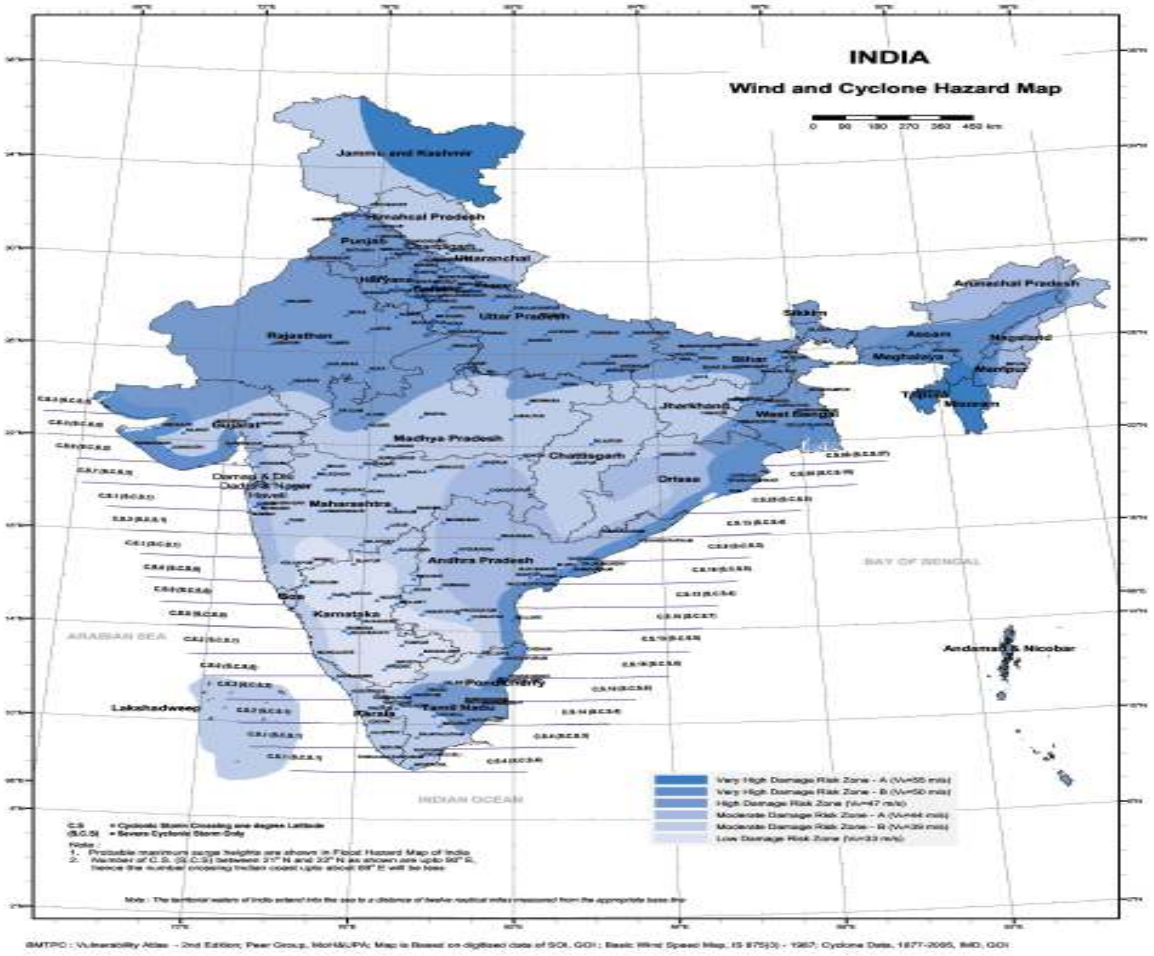
- Vulnerability is compounded by other factors (like ever growing population, rapid urbanization, increasing industrialization, developmental activities at high risk zones).

Hazard Atlas of India-Earthquake

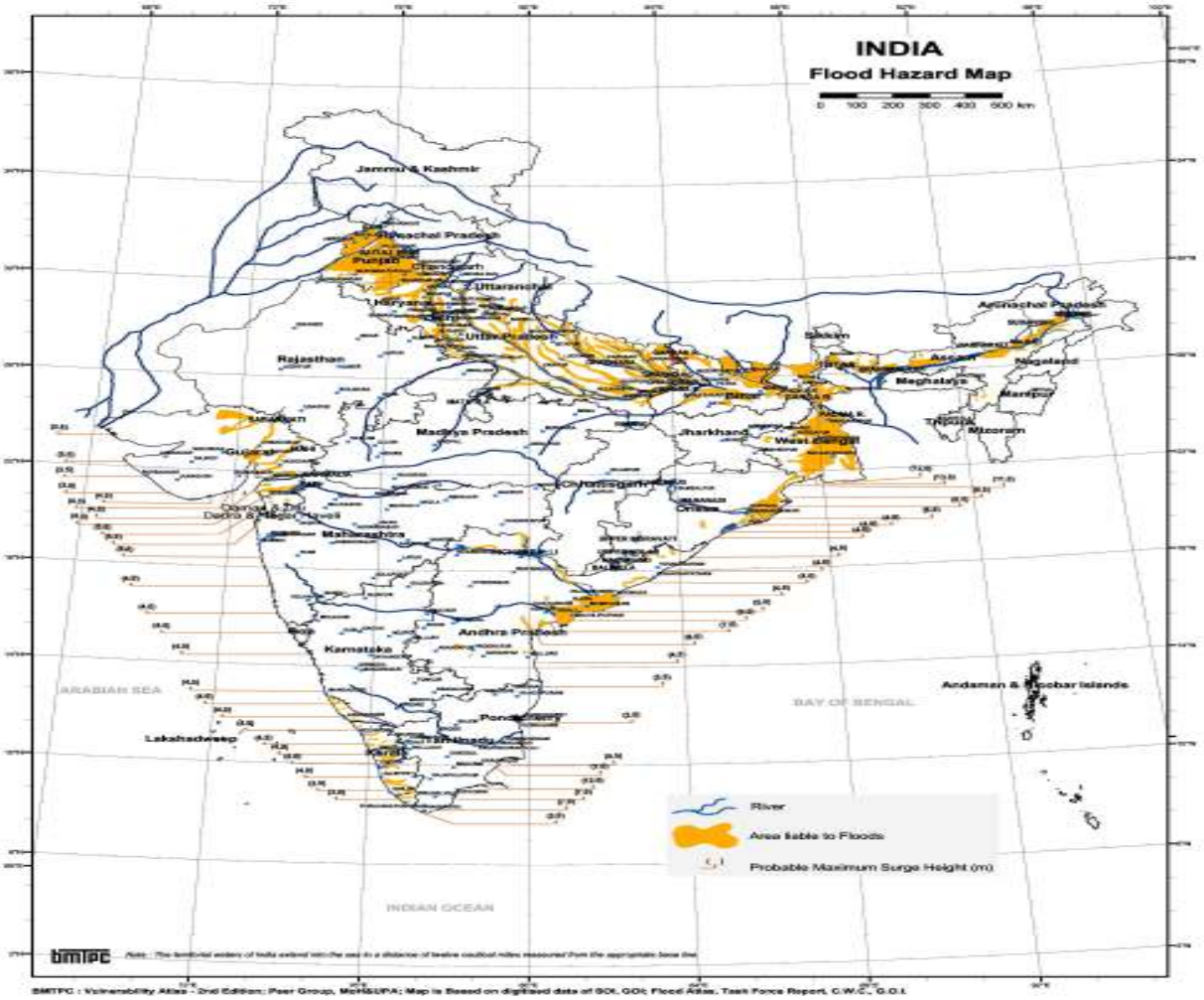


BMTPC : Vulnerability Atlas - 2nd Edition; Peer Group, MoH&UPA; Map is Based on digitised data of SOI, GOI; Seismic Zones of India Map IS:1893 - 2002, BIS, GOI, Seismotectonic Atlas of India and its Environs, GSI, GOI

Hazard Atlas of India-Cyclone

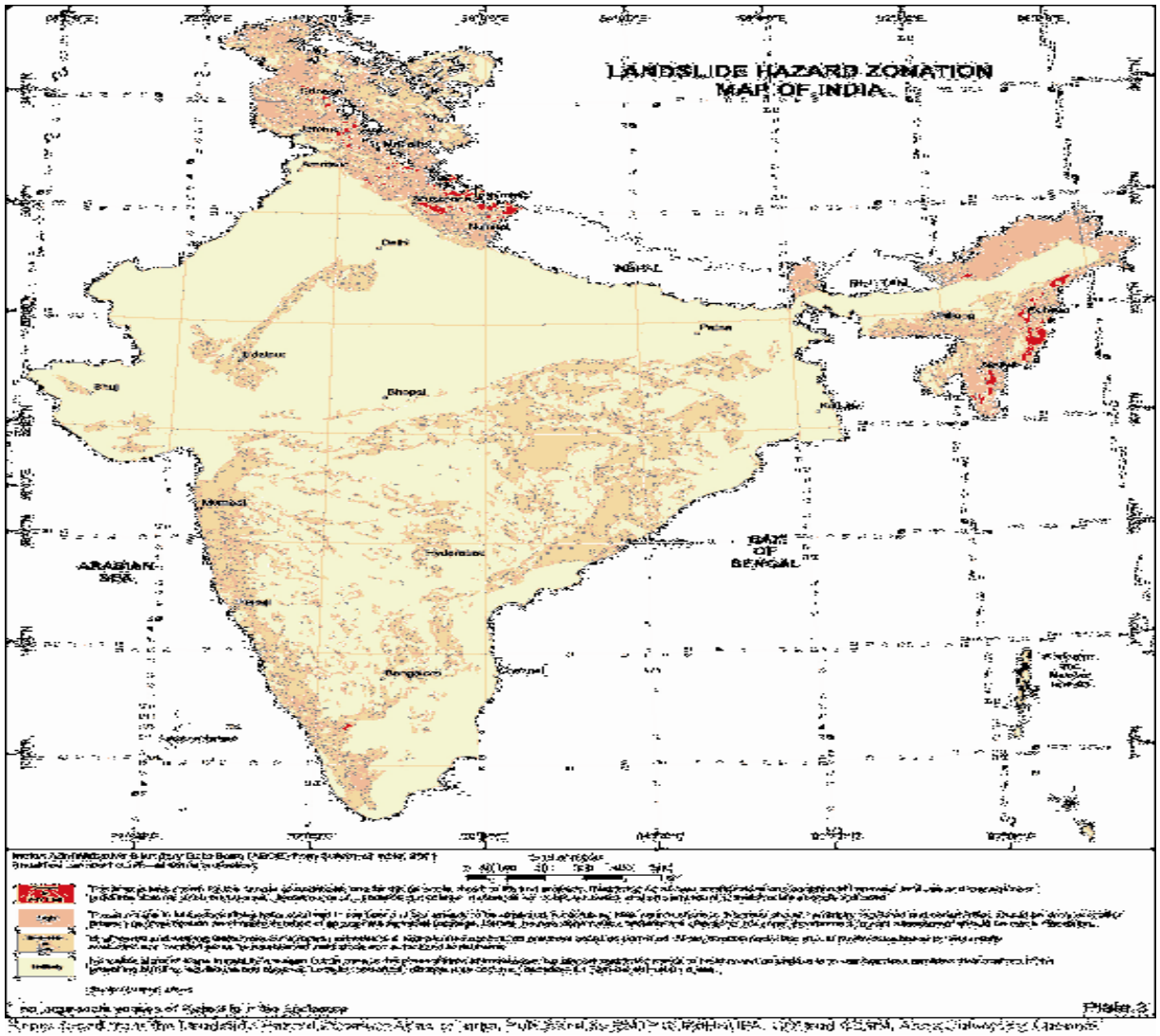


Hazard Atlas of India-Flood



BMTPC : Vulnerability Atlas - 2nd Edition; Peer Group, MoH&UPA; Map is Based on digitised data of SOI, GOI; Flood Atlas, Task Force Report, C.W.C., G.O.I.

Hazard Atlas of India-Landslide



MAJOR DISASTERS IN INDIA : 1990 - 2005

YEAR	PLACES	DISASTER	LOSS OF LIVES (APPROX)	LOSS OF PROPERTY (RS CRORE) (APPROX)
1991	UTTARKASHI	EARTHQUAKE	2000	2000
1993	LATUR	EARTHQUAKE	9500	6000
1997	JABALPUR	EARTHQUAKE	200	5000
1999	CHAMOLI	EARTHQUAKE	2000	2000
1999	ORISSA	S CYCLONE	9887	10000
TOTAL LOSSES DURING THE DECADE			23587	25000
2001	BHUJ	EARTHQUAKE	14000	13400
2004	SE INDIA	TSUNAMI	15000	10000
2004	ASSAM & BIHAR	FLOODS	700	5000
2005	J&K	AVALANCHE	350	100
2005	MAH, GUJ, HP, KARNATAKA, T'NADU	FLOODS	1569	10300
2005	J&K	EARTHQUAKES	1336	1000
TOTAL LOSSES IN ONLY FIVE YEARS			56542	64800

Links With International Strategy and Action Plan

1) **The Yokohama Strategy and Plan of Action for Safer World (23rd – 27th May,1994)**

- A midterm review of International Decade (1990-1999) for Natural Disaster Reduction (IDNDR) Programme Identified certain Gaps to be bridged.

(2) Hyogo Framework for Action 2005-2015 (18th-22nd January, 2005): Building Resilience of Nations and Communities to Disasters

- Identified the various strategic goals and priorities of action needed

Paradigm Shift In Disaster Management

- Government of India took a defining step by ushering in a Paradigm Shift in disaster management approach through enactment of Disaster Management Act, in December 2005.
- To replace the erstwhile reactive and response-centric disaster management approach with a proactive and holistic one, emphasizing disaster mitigation and preparedness.

DM Act, 2005

- The Disaster Management Act, 2005, is a unique which manifests the National Will and Vision for a disaster safe and disaster resilient India.
- It provides necessary Institutional, Financial and the Legal framework with the heads of the Governments at different levels.
- The Hon'ble Prime Minister at National Level as the Chairman of NDMA, the apex body created to steer all DM-activities in the country, and the State Chief Ministers themselves heading the State Authorities.
- To ensure the sustainability of the development programme through holistic, participatory, inclusive and eco-friendly manner.

Themes Underpinning the National Approach

- Community based DM, including last mile integration of the policy, plans and execution.
- Capacity development in all spheres.
- Consolidation of past initiatives and best practices.
- Cooperation with agencies at national and international levels.
- Compliance and coordination to generate multi-sectoral synergy.

National Objectives

- DM concerns are built into the developmental planning process.
- Promoting a culture of prevention and preparedness.
- Encouraging mitigation measures based on state-of-the-art technology, traditional wisdom and environmental sustainability.
- Streamline institutional techno-legal framework.

National Objectives-contd.

- Promoting a productive partnership with the media.
- Ensuring efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society.
- Undertaking reconstruction as an opportunity to build disaster resilient structures and habitat.
- Undertaking recovery to bring back the community to a better and safer level than the pre-disaster stage.

Strategy at National Level

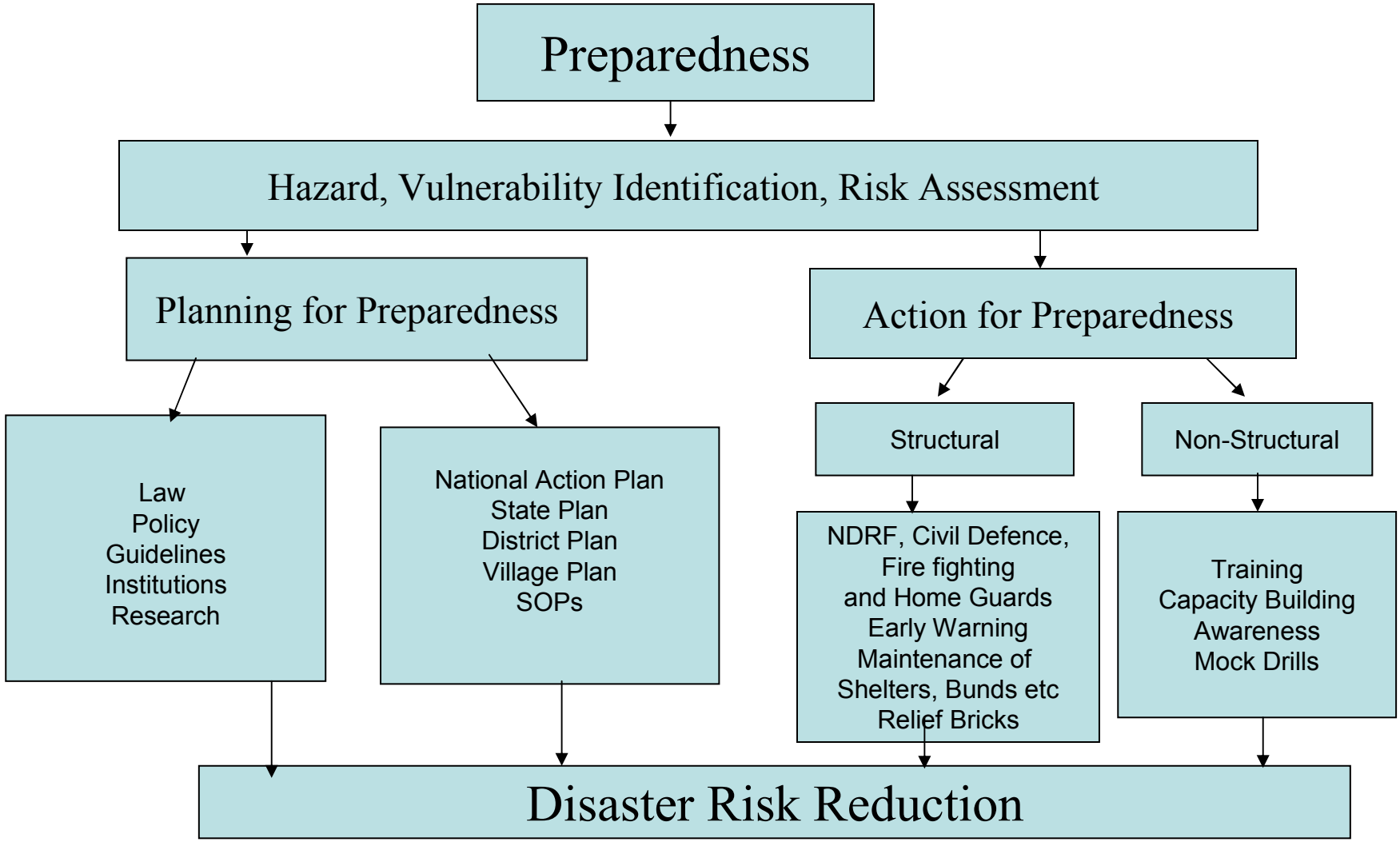
Technology Driven and Focussed on

- PREVENTION AND MITIGATION
- PREPAREDNESS
- CAPACITY DEVELOPMENT, and
- RESPONSE – (Well informed, well equipped and well rehearsed).

Disaster Preparedness

- Even if technically feasible, Prevention of all disasters, particularly the natural ones, *Not* cost-effective
- We have to live with risks - *identify the 'acceptable risks' and be Prepared to face these risks*
- Emphasise Preparedness and Mitigation measures to stop natural hazards from assuming the dimension of disasters.

Disaster Preparedness - Framework



Major Preparedness Initiatives

1. Establish Basic Inputs

- Create GIS based data by integrating Spatial Data with corresponding non-spatial information;
- Upgrade vulnerability atlas from district to block level; and
- Microzonation and Risk Analysis

2. Operationalize and train the National Disaster Response Force of approximately 10,000 personnel with state-of-the-art equipment for Specialized Response.

Major Preparedness Initiatives

3. Restructure and Reorient the Civil Defence and Home Guards and Up-gradation of Fire Services.

4. Creation of National Disaster Mitigation Reserves for 325,000 Personnel affected by disasters in 8 Strategic Locations.

5. Launching of National Cyclone Risk Mitigation Project in Collaboration with World Bank.

6. Emergency Operation Centers for Data, Video and Audio link-up at all levels

7. India Disaster Resource Network (IRDN); web-enabled centralized inventory of resources

8. Finally initiate Mitigation Projects on;

   Earthquake and Floods

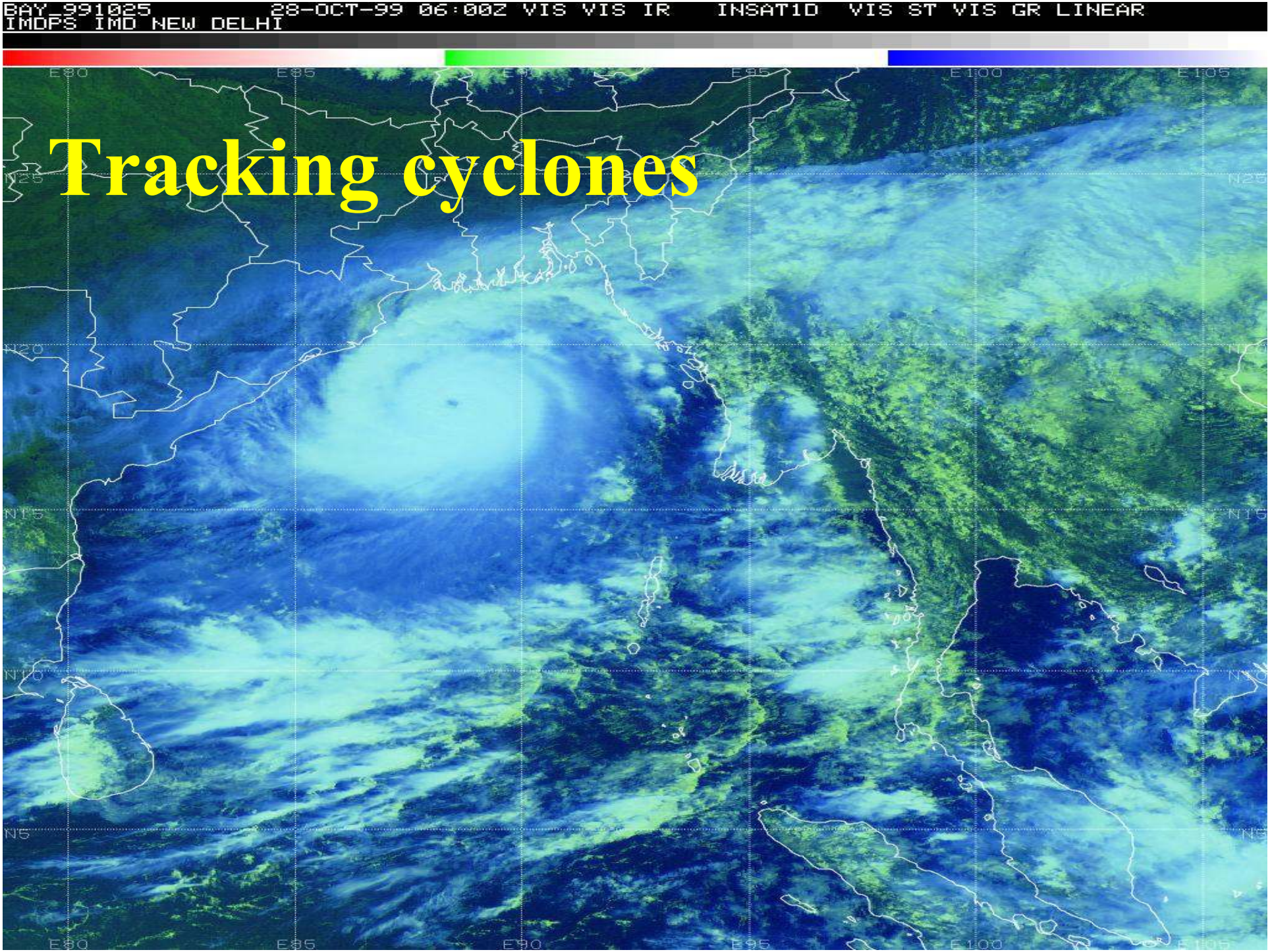
Major Preparedness Initiatives

9. Early Warning Systems with Reduced Error-band

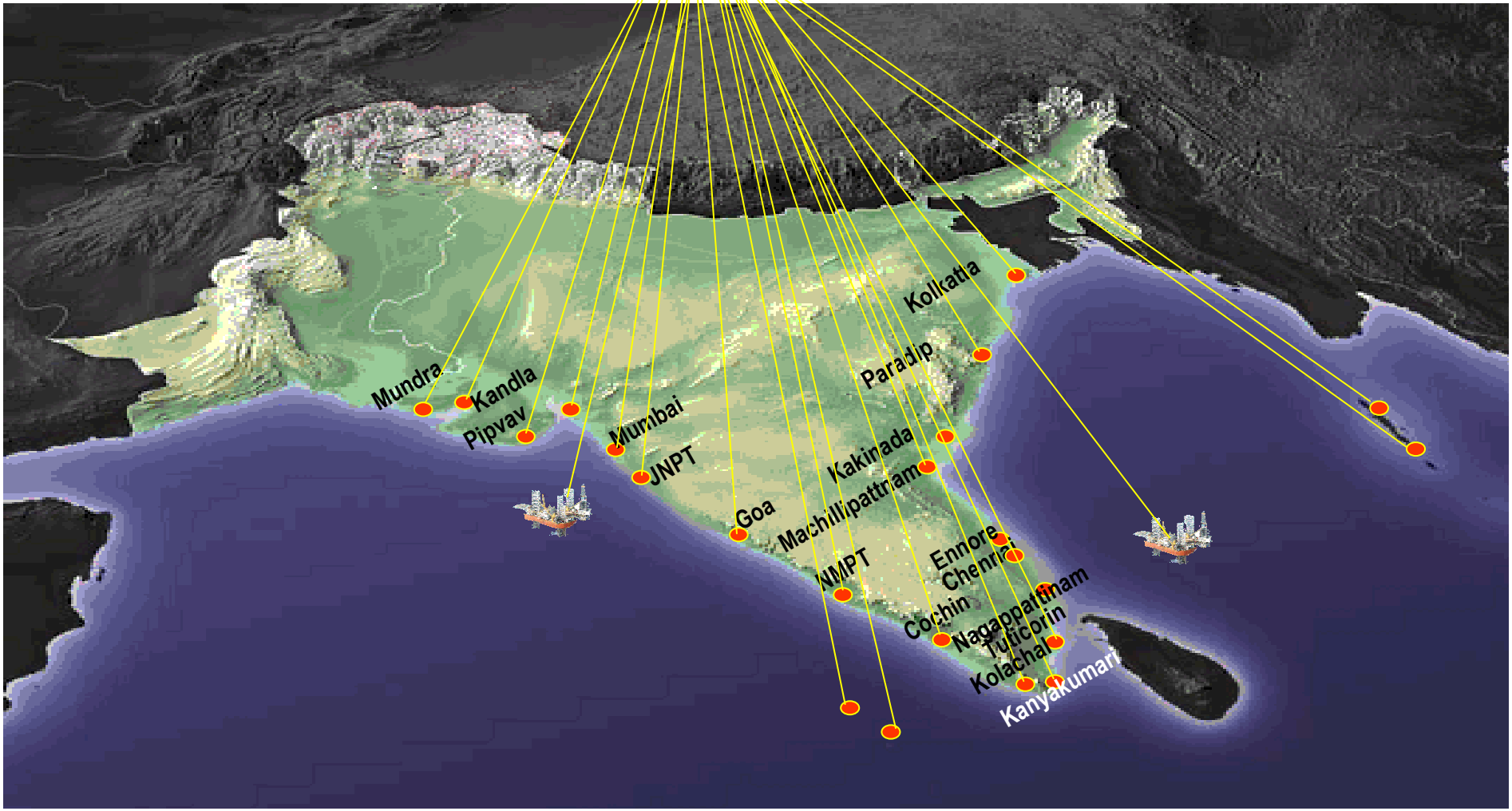
- Induction of additional observations systems and advanced technologies (AWSs, propeller driven aircraft etc) to upgrade the existing forecasting, computational capabilities and warning systems based on;

  a network of satellite ground and ocean monitoring stations and chain of doppler radards along the coasts;

- To forewarn occurrence of Tsunami and Strom-Surges in Indian Ocean, totally indigenous system to be ready by September, 2007.


BAY_991025 28-OCT-99 06:00Z VIS VIS IR INSAT1D VIS ST VIS GR LINEAR
IMDPS IMD NEW DELHI
Tracking cyclones

Early Warning System for Indian Ocean Tsunamis



Major Preparedness Initiatives

10. Medical Preparedness and Mass Causality Management;

11. Community Preparedness:

- For increased Ownership along with clarity on Roles and Responsibilities;
- To take care for elderly, woman, children and physically challenged groups;
- Needs proactive and participatory partnership of community in identification, analysis, treatment, monitoring and evaluation of disaster risk.

Major Preparedness Initiatives

- India is implementing largest Community based Disaster Preparedness programme in the world.

- Multiple donor supported programme covers nearly 300 million people in 169 multi-hazard districts in 17 States since 2003.

- Public Awareness Campaign and Education augmented on along with

- Workshops, Table-Top Exercises and Mock Exercises at State Level.

Major Preparedness Initiatives

12. Training of the Professional by networking available scientific, technical and R&D institutions, and
    Administrative Staff by NIDM at national level and ATIs at State level

13. The National Disaster Communication Network
    (Based on diverse technologies with adequate redundancy having last line connectivity in simple local language).

Major Preparedness Initiatives

14 Funding Mechanism:

- For coping with the additional expenses over and above those for emergency response, relief and rehabilitation, two additional funds proposed viz., National Disaster Response Funds (for Equipping NDRF) and National Disaster Mitigation Funds (for mitigation and preparedness projects).

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INITIATIVES AT INTERNATIONAL LEVEL

1. Membership of the Emergency Management Fund of the United Nations.
2. Setting up of the SAARC Centre of Excellence.
3. Dialogue with the US, Japan and Singapore on Technology Sharing.
4. Active participation in International Conferences and Exercises.
5. Organizing First India Disaster Management Congress.
6. Conclaves in partnership with the World Bank and OECD for ex-ante Financial Management of Disasters.

Challenges ahead

- Growing economy and rapid urbanization are exposing more areas, assets and people to risks
- Increasing glacial melts, desertification and atmospheric depressions due to global warming and climate change
- Gaps in capacity building at all levels
- Weak enforcement of building codes and zonal regulations in rural and urban areas
- Effective dissemination of early warning to the last mile

CONCLUSION

By centre staging the community and providing momentum and sustenance through the collective efforts of all government agencies and Non-Governmental Organizations (NGOs) with bottom-up approach, India is committed to build a safer and disaster resilient nation by inducting continuous influx of advance science and technology at each component of the Disaster Continuum.

Thank you