

Disaster Management for a Multi-Hazard Nation - Capacity Building

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STRUCTURE OF PRESENTATION

- **Background**
- **Development of framework for Disaster Management**
- **Guiding Principle**
- **NIDM's Interventions for Strengthening Disaster Management**
- **Way Forward**

Vulnerability Profile of India

- India faces high degree of vulnerability to the following natural hazards:

Natural Hazards	Physical Vulnerabilities
Earthquakes	About 61 percent of the landmass is prone to earthquakes of moderate to very high intensity
Floods	Nearly 12 per cent of India's landmass or 40 million hectare land is vulnerable to floods and river erosion
Cyclones and Tsunamis	Out of the 7,516 km (revised to 11,000 kms) long coastline, close to 5,700 km is prone to cyclones and tsunamis
Drought	68 per cent of the cultivable area is vulnerable to drought
Landslides and Avalanches	Hilly regions, particularly in the Himalayas, are prone to landslides and avalanches

Vulnerability Atlas of India was developed by BMTPC to create understanding of degree of vulnerability to wide-ranged of disasters due to its unique geo-climatic and socio-economic conditions.

Types of Hazards

Water and Climate related disasters	1) Floods and drainage management, 2) Cyclones, 3) Tornadoes and Hurricanes, 4) Hailstorms, 5) Cloud burst, 6) Heat wave and Cold wave, 7) Snow avalanches, 8) Droughts, 9) Sea erosion, 10) Thunder and lightning, 11) Tsunami
Geological related disasters	12) Landslides and mudflows, 13) Earthquakes, 14) Dam failure/Dam bursts, 15) Mine disasters
Chemical, industrial and nuclear related disasters	16) Chemical and industrial disasters, 17) Nuclear disasters
Accident-related disasters	18) Forest fires, 19) Urban fires, 20) Mine flooding, 21) Oil spills, 22) Major building collapse, 23) Serial bomb blasts, 24) Festival related disasters, 25) Electrical disasters and fires, 26) Air, road and rail accidents, 27) Boat Capsizing, 28) Village fire
Biological related disasters	29) Biological disasters and epidemics, 30) Pest attacks, 31) Cattle epidemics, 32) Food poisoning

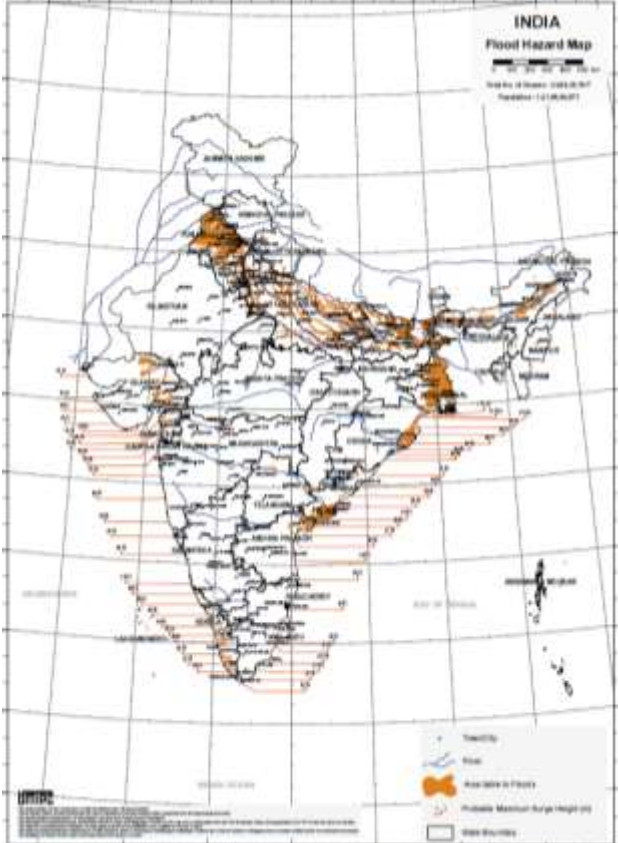
Hazard Mapping of India



Earthquake Hazard Map



Wind Hazard Map



Flood Hazard Map

Source: Building Materials & Technology Promotion Council (2019), 'Vulnerability Atlas of India', Page 22- 24

Hazard Mapping of India



Landslide Incidence Map



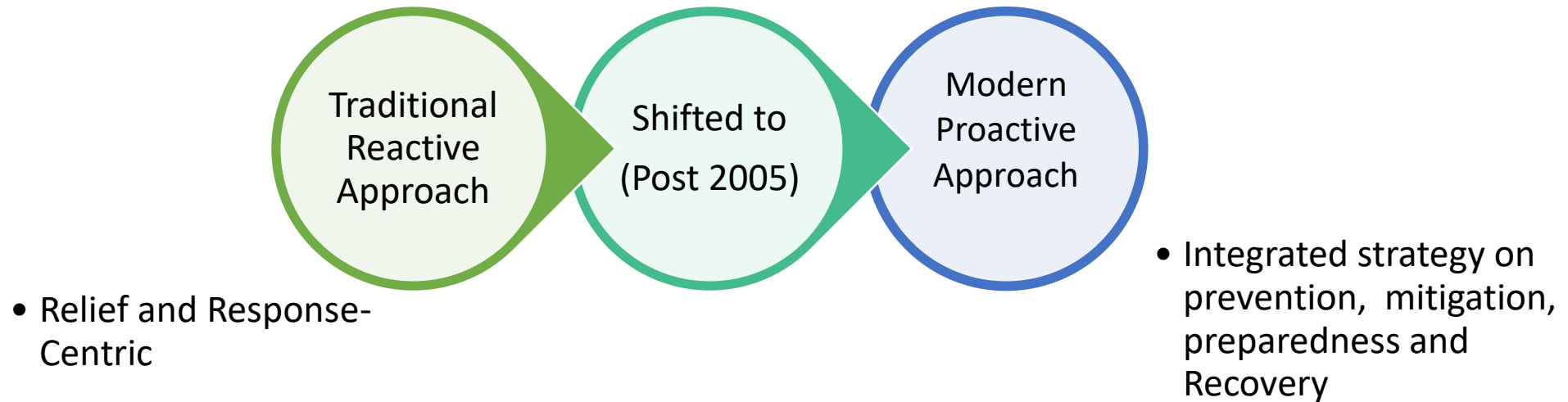
Cyclone Occurrence Map



Thunderstorm Incidence Map

Source: Building Materials & Technology Promotion Council (2019), 'Vulnerability Atlas of India', Page 25- 27

Paradigm Shift in Disaster Management Approach



Drivers to Shift in fundamental approach

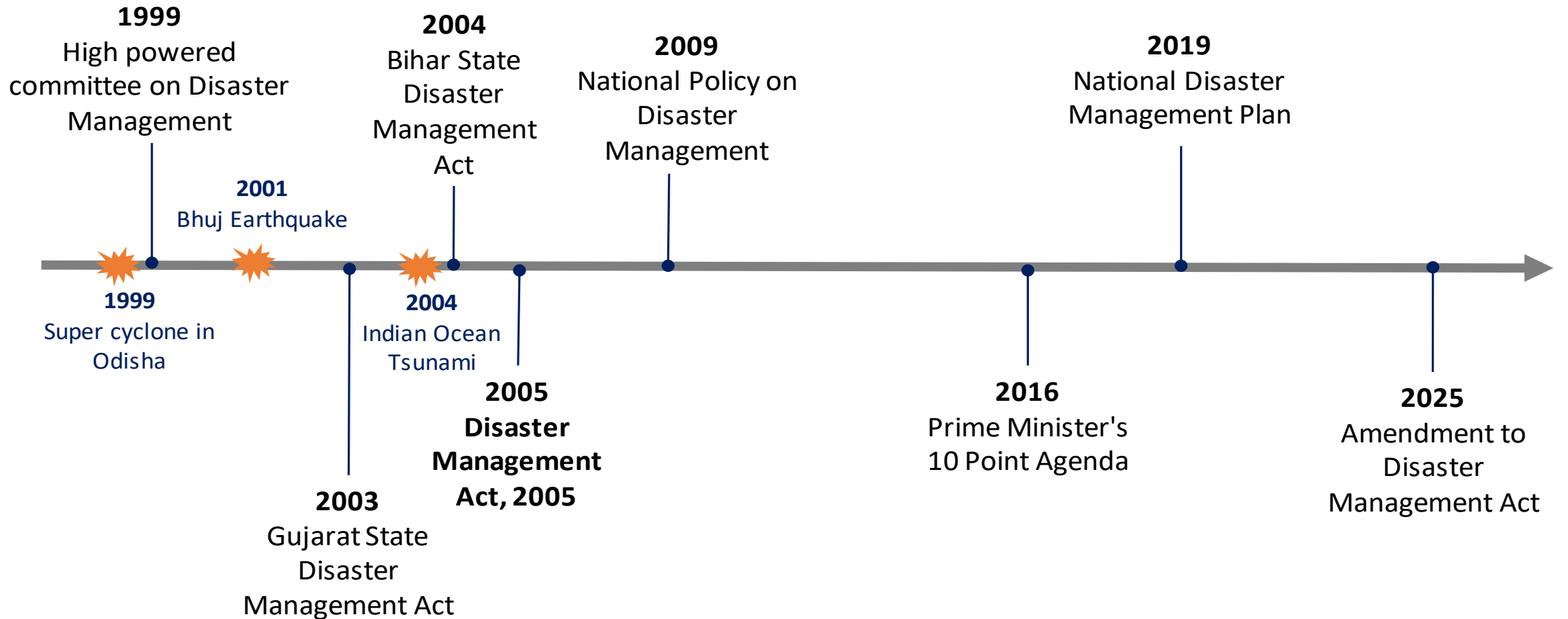
- Disasters occurred during 1990-2004: Latur Earthquake 1993, Odisha Super cyclone 1999, Bhuj Earthquake, 2001 & Indian Ocean Tsunami in 2004
- Increased understanding about that need of risk reduction measures for sustainable development.
- Global frameworks for DRR (Yokohoma strategy, ISDR, HFA and SFDRR)
- Strengthened disaster management framework in our country
- Development of Early warning systems, research and advance technologies

United Nation's Frameworks- Guiding Force

Concern for disaster risk reduction (DRR) is born from the global movement for sustainable development .



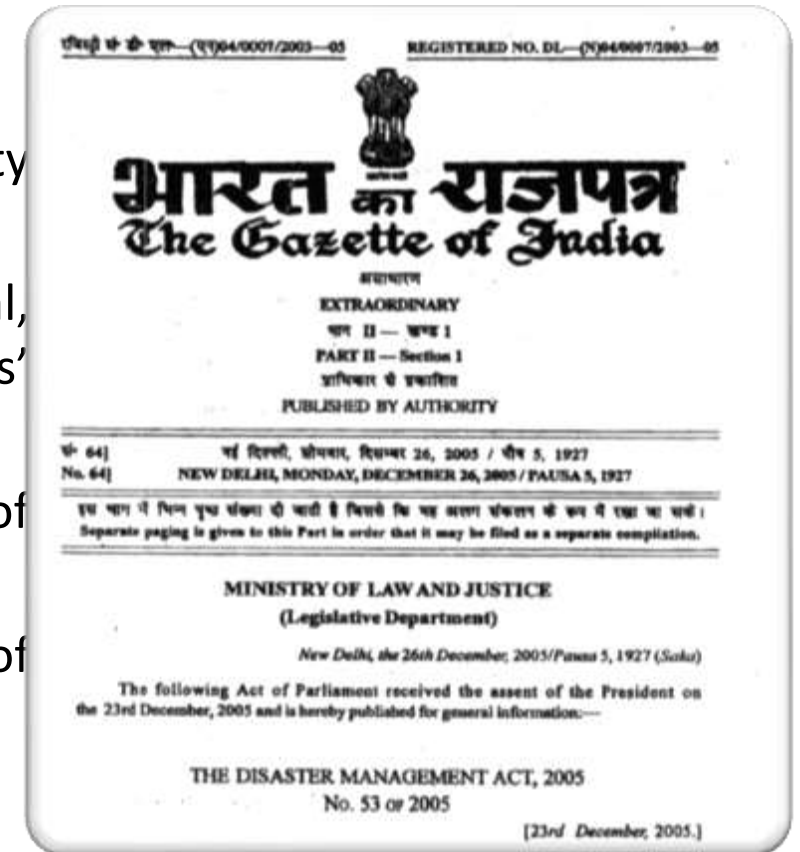
Development of framework for Disaster Management



Disaster Management Act, 2005

Salient Features

- Provides **definitions** & relevant terminologies.
- **Establishes Institutional mechanism** at national, state, district and city levels
- **Provisions for preparation of DM plans** at different levels (national, states and districts) and central ministries/ departments and states' departments
- **Defines responsibilities** of ministries or departments of Government of India and state governments and functions of the local authorities
- Provisions for setting up of national, state and local level institutions of DM
- Highlighted capacity building needs in the country
- Provision for financial mechanism/ **funding arrangements**
- Provides for **penalties and punishments** for various offences
- Each state/UT to have one nodal department for coordination, referred to as DM department (DMD)



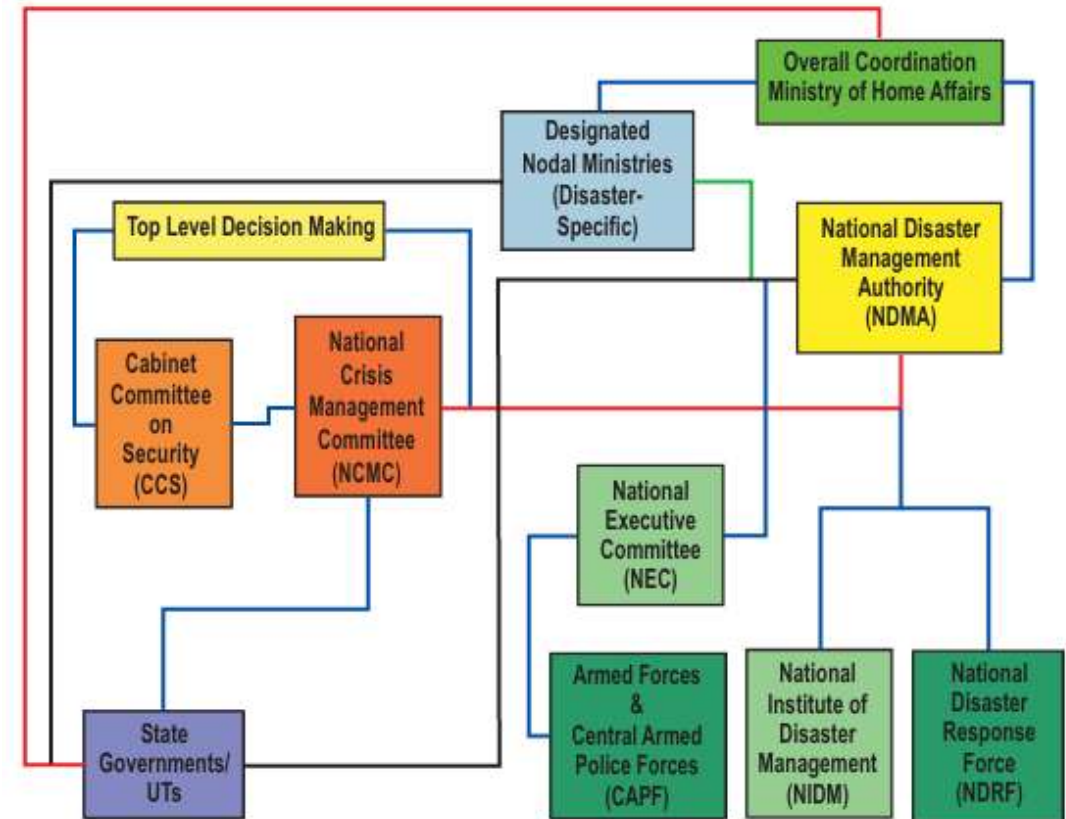
National Institutions and their Roles

National Level Agencies

- Overall coordination of DM vests with the **Ministry of Home Affairs (MHA)**.
- **NDMA** lays down policies, plans and guidelines, coordinate their enforcement and implementation, and approves the DM Plans.
- **NDRF** is a specially trained force for response, structured like paramilitary forces for rapid deployment.
- **NIDM** role is to develop human resource and capacity building, undertake training programmes and research.

Nodal Ministries

- Hazard-specific nodal ministries to function as the lead agency or for specific role.
- Mainstreaming of responsibilities with various allied departments of NCDC, NFSC, Fire Service, Police, education etc.



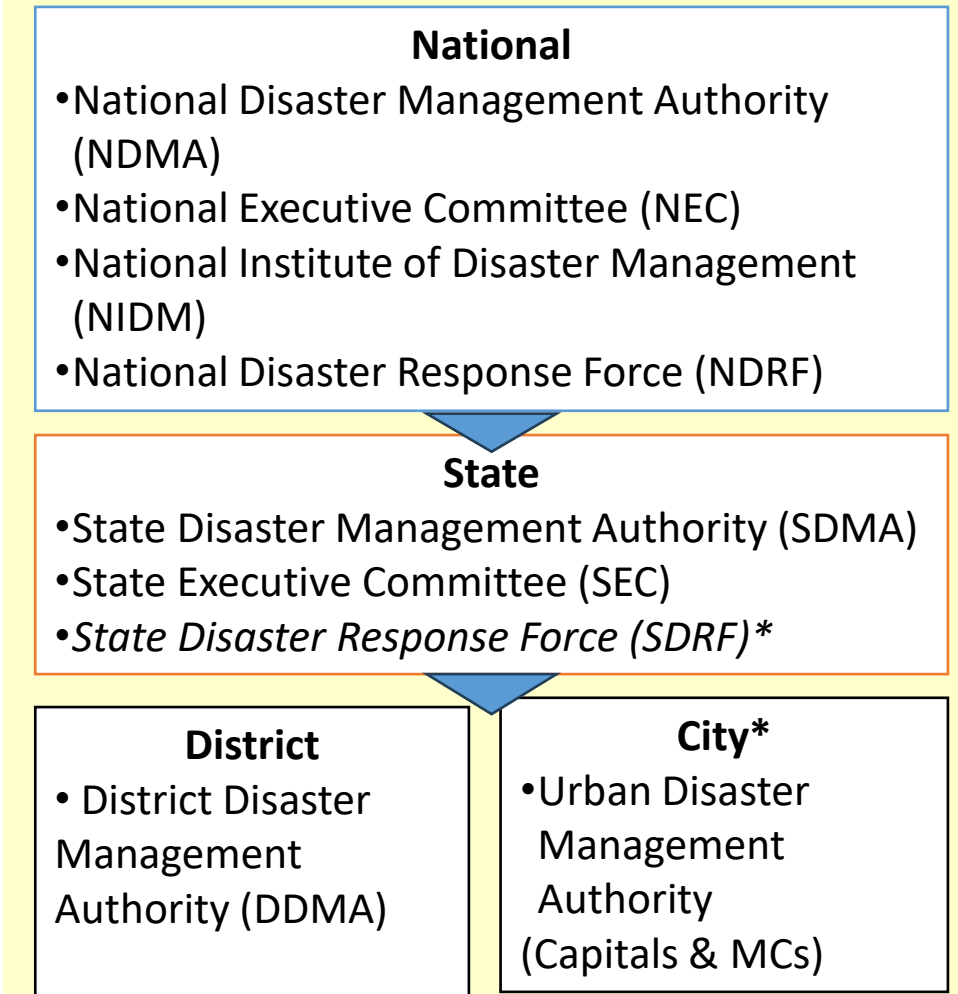
Institutional mechanism for disaster management at national level

Disaster Management (Amendment) Act, 2025

Salient features :

- New terms like 'disaster risk', 'hazard', 'exposure', 'preparedness', 'resilience', 'vulnerability' etc.
- Provides for the **constitution of an 'Urban Disaster Management Authority'** in state capitals and all municipal corporations (except GNCTD and Chandigarh UT) headed by the municipal commissioner.
- Provides responsibility for preparing and coordinating the implementation of the '**Urban Disaster Management Plan**'.
- Constitution of **State Disaster Response Force**.
- **Empowered NDMA** for creation of national disaster database and policy, undertake preparedness assessments, and prepare minimum standards for relief
- Empowered NEC, SEC and HLC for discharging their functions.

Institutional framework for Disaster Management in India (after 2025 amendment act)



International Frameworks (2015)-Landmark Year

Sendai Framework for DRR (2015-2030)

- Endorsed by the UN General Assembly in 2015 and adopted by UN member states. Outlines 7 goals and 4 priority areas.
- Aims for the substantial reduction of disaster risk and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries

2030 Agenda for Sustainable Development

- Adopted by all UN Member States in 2015.
- Provides a blueprint for peace and prosperity for people and the planet.
- Has 17 Sustainable Development Goals (SDGs). Eg. SDG 11 is to 'make cities and human settlements inclusive, safe, resilient, and sustainable'

Paris Agreement on Climate Change(2015)- International treaty

- To keep the global average temperature rise “well below 2° C” above pre-industrial levels
- To continue the efforts to limit the rise to 1.5° C.
- Adopted by 195 countries- legally binding under UNFCCC

Source: [1] <https://www.undrr.org> [2] <https://sdgs.un.org/goals>. [3] <https://unfccc.int>





Prime Minister's Ten Point Agenda for Disaster Risk Reduction

Provides practical guidance
for implementation the
SFDRR, 2015

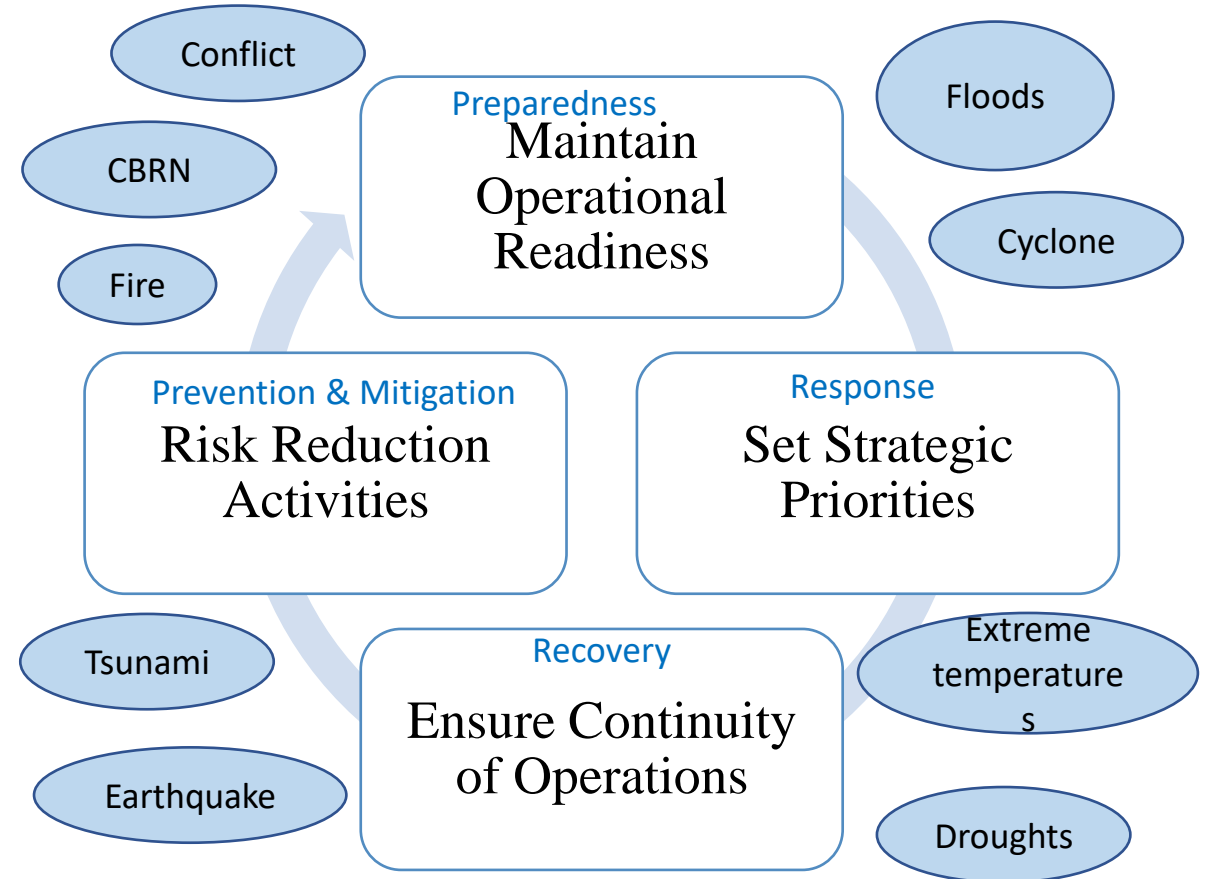
10- POINT AGENDA FOR DISASTER RISK REDUCTION

- 1** All development sectors must imbibe the principle of disaster risk management
- 2** Develop a network of universities to work on disaster
- 3** Work towards risk coverage for all
- 4** Utilise the opportunities provided by social media and mobile technologies
- 5** Encourage greater participation and leadership of women in Disaster Risk Management
- 6** Build on local capacity and initiative
- 7** Invest in risk mapping globally
- 8** Ensure that the opportunity to learn from a disaster is not wasted
- 9** Leverage technology to enhance the efficiency of our disaster risk management efforts
- 10** Bring about a greater cohesion in international response to disasters



Multi-hazards Approach

- **Hazards**, which are one of the **components of risk, may vary in source** (natural, anthropogenic, socio-natural) and challenge the existing systems
- DRR activities are usually implemented along the same model, regardless of the cause (WHO, 2021).
- The focus is on **capacity building** to address the risk.



Whole-of- Society Approach

- **Cooperation and shared responsibility** between local authorities, sectors and stakeholders
- Enhance meaningful participation of **different stakeholders** (Private, government, academia, civil society and community based organizations)
- Breaking the silo-based approach and **cross-cutting sectoral planning**
- **Inclusive approach** (plan for all sections of society)
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- **SDGs Goal 17**-Strengthening Partnerships

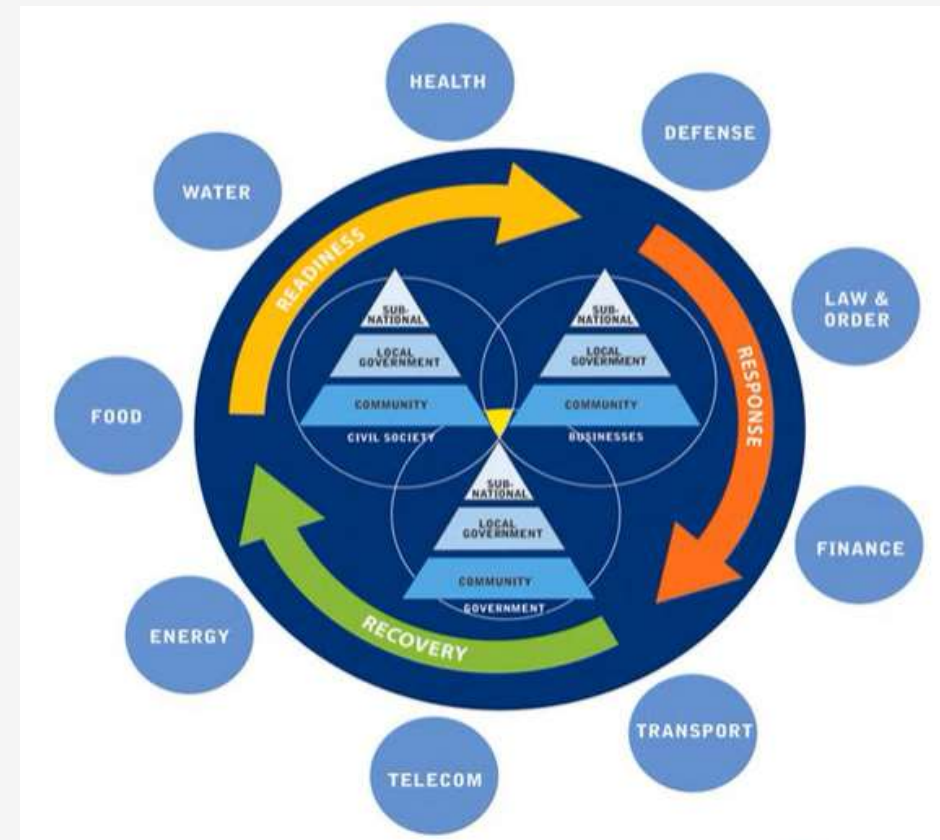
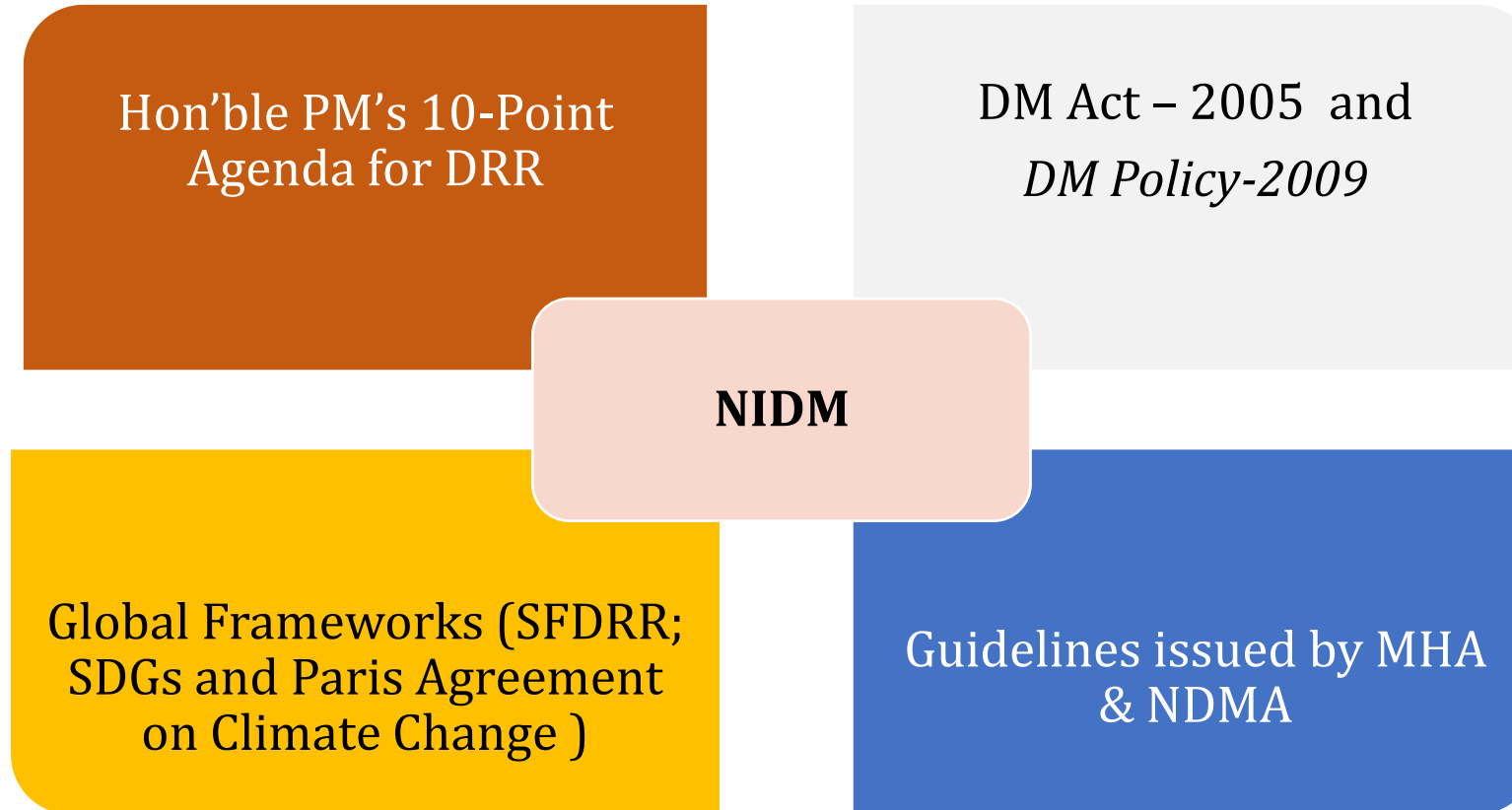


Fig. Whole of society approach (WHO, 2009)



GUIDING PRINCIPLES





CAPACITY BUILDING

Types of Capacity Building Programmes:

Face-to-Face Training Programmes

- Comprehensive DRM Courses (2 Week)
- Thematic Courses for States/UTs (Need based)
- Consultations/Workshops etc.

E-Courses

- Online Certificate
- I-GoT (Capacity Building Commission)

Webinars/Online Training Programmes

Levels:

International / National

States / UTs

District – PRIs, ULBs & DDMA's

Target Participants: Govt. Officials from SDMA's, DDMA's, Urban Local Bodies, Line Departments (Health, Education, Urban Development, Public Works, Water Sanitation etc.) Police, Armed Forces, NDRF and Civil Defence.

CAPACITY BUILDING AND COMMUNITY ENGAGEMENT

Thematic Programmes for the States & UTs

Training Modules on Thematic Areas

- ❖ Earthquake Risk Reduction
- ❖ Landslide Mitigation
- ❖ GLOF Mitigation
- ❖ Critical Infrastructure Resilience
- ❖ Mainstreaming DRR & CCA Measures
- ❖ Psychosocial Care in Disaster Management
- ❖ Child Centric DRR
- ❖ DM Plans
- ❖ Health Resilience
- ❖ Flood Management
- ❖ Inclusive DRR
- ❖ Community Based Disaster Management
- ❖ Incident Response System
- ❖ Cultural Heritage
- ❖ Urban Resilience
- ❖ School Safety
- ❖ Social Behaviour Change
- ❖ NDMIS & IDRN
- ❖ Post Disaster Need Assessment
- ❖ Crowd Management
- ❖ CBRN
- ❖ Drought

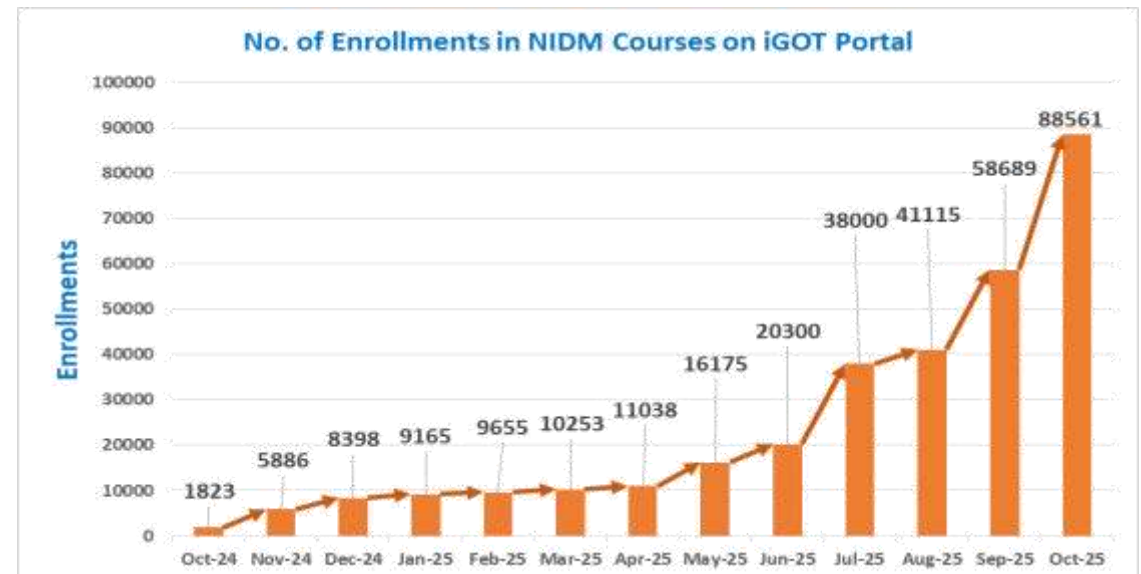
Since 2022, we have conducted more than 500 trainings and trained about 31,000 participants-

E-Learning & I-GOT Courses

S. No.	List of Online Courses
1	Comprehensive Disaster Risk Management Framework (CDRMF)
2	Community-Based Disaster Risk Management (CBDRM)
3	Earthquake Risk Reduction (ERR)
4	Climate Change and Disaster Risks (CCDR)
5	Damage & Reconstruction Needs Assessment (DRNA)
6	Gender Aspects of Disaster Recovery & Reconstructions (GADRR)
7	Risk Sensitive Land Use Planning (RSLUP)
8	Risk Identification, Assessment & Analysis (RA)
9	Safe Cities (SC)
10	Financial Strategies for Managing the Economic Impacts of Disasters (FS)

S. No.	I-GoT Courses (Available in 6 Regional Languages)
1.	Basics of Disaster Management
2.	Flood Management
3.	Do's and Don'ts of Disaster Preparedness
4.	Crowd Management
5.	School Safety: Hazard Risk Vulnerability Analysis
6.	School Safety Beyond Structures: Planning and Mitigation

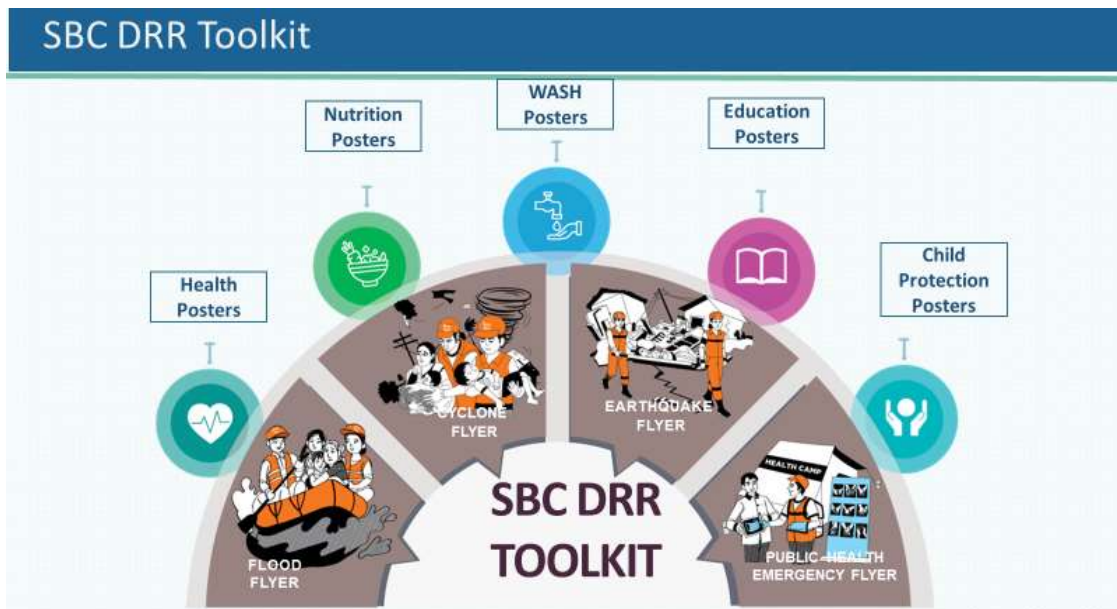
***Upcoming Courses – 22 Nos.**



COMMUNITY ENGAGEMENT

- Trainings for Panchayati Raj Institutions and urban communities are being conducted.
- Sensitization of Youths, Civil Defence, NYKS etc.
- Development of Educational materials and tool kits are being developed.

Toolkit for Community Engagement through Social & Behavioural Changes (SBC)



nidm
National Institute of Disaster Management

FLOOD

BE PREPARED • TAKE PRECAUTIONS • STAY SAFE

Prepare children for emergencies

- Help children memorize vital information
- Give children tags with emergency contact information
- Practice calling on emergency contact number
- Ensure access to safety information for children with special needs
- Counsel children to save cell phone battery
- Teach children age-appropriate first aid

HELPLINE 112

unicef for every child

National Disaster Risk Reduction Communication Toolkit

When you are safe, volunteer in rescue operations

Multilingual Safety Manuals for Common Disasters

- 'Do's and Don'ts for Common Disasters' developed in 15 languages listed under constitution of India.
- Languages: Kannada, Telugu, Tamil, Malayalam, Marathi, Gujarati, Odia, Bengali, Urdu, Sanskrit, Assamese, Nepali, Punjabi, Konkani and Kashmiri.
- Also available in brain language
- Reflects our commitment to inclusivity and safety for all.



STRENGTHENING INSTITUTIONS

- ❖ **Mainstreaming DRR measures with Ministries/Departments** such as Road, Transport and Highways; Agriculture & Farmer Welfare; External Affairs; Ports, Shipping and Waterways; Education; Panchayati Raj & Rural Development; Home Affairs; AYUSH; Health & Family Welfare and Housing and Urban Affairs
- ❖ Collaborations with national and international organizations for capacity building
- ❖ Faculty Development Programmes with UGC HRD Centers
- ❖ **Handholding States/UTs** to mainstreaming DRR and capacity building
 - ❖ SDMAs
 - ❖ ATIs
 - ❖ SIRDs
 - ❖ ULBs
 - ❖ Universities



Stakeholder Workshop on Drought Manual Revision 2025



ITEC Programme 2025

STRENGTHENING INSTITUTIONAL FRAMEWORK

Mainstreaming DRR in Education

- India University and Institution network for DRR(IUINDRR) established
- More than 330 universities and institutions across the country are members.
- A model curriculum on DRR for undergraduate and postgraduate introduced
- National Eligibility Test (NET) has been introduced by UGC.
- A national research facility has been established to strengthen and promote research in the field of DRR.
 - Research projects
 - Thesis award

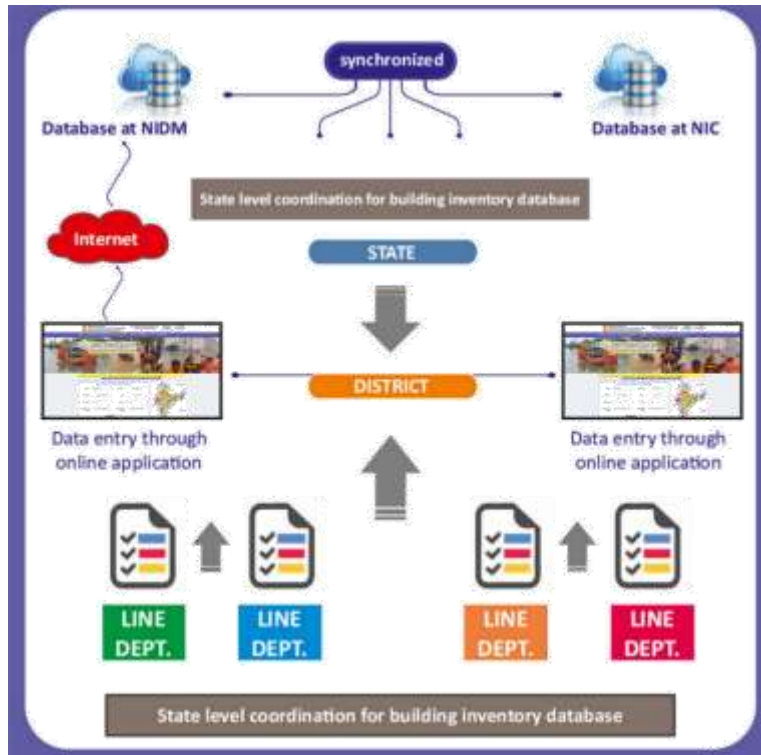


TECHNICAL PRIORITIES AND INNOVATIONS

Knowledge Dashboards

India Disaster Resource Network(IDRN)

- ❖ A nation-wide (up to the district level) inventory of equipment and human resources, for emergency response
- ❖ Dashboard for States/UTs



For more details please visit: <https://idrn.nidm.gov.in/>

Knowledge Vertical for Urban Resilience

This platform serves as a centralized hub for **States and UTs** to share the best practices and highlight successful interventions for urban settings.



For more details please visit: <https://iuin-drr.nidm.gov.in/Vertical/Index>

Sensitisation on Applications for Early Warning Dissemination



Sachet- Integrated alert system on PAN India basis using common alerting protocol. .



National database for emergency management (NDEM) – Mapping of real-time datasets of IMD, DGRE, INCOIS, GSI etc for effective monitoring and effective response.



Damini monitors all lightning activity happening around and alerts if lightning is happening near the user by GPS.

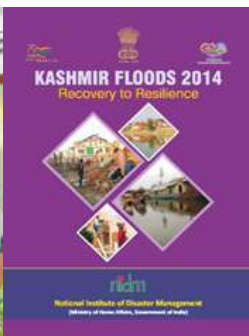


Bhookamp- developed by National Center for Seismology (NCS) which provides real-time earthquake information





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WAY FORWARD

Suggested Areas of Interventions for Capacity Building

Mainstreaming DRR
across sectors

Revision of Disaster
Management Plans

Incident Response
System

Community
Resilience

Post-Disaster Needs
Assessment (PDNA)

Disaster Mitigation

Recovery &
Reconstruction

Technology &
innovation ;
Research & Studies

Thank You



📍 NIDM, Delhi



📍 NIDM, Vijayawada (South Campus)

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