



# 3<sup>rd</sup> Session of National Platform for Disaster Risk Reduction (NPDRR)

10-11 March 2023, Vigyan Bhawan, New Delhi

**PROCEEDINGS**

आपदा जोखिम न्यूनीकरण के लिए  
राष्ट्रीय मंच का तीसरा सत्र



Ministry of Home Affairs, Government of India



# 3<sup>rd</sup> Session of National Platform for Disaster Risk Reduction (NPDRR)

10-11 March 2023, Vigyan Bhawan, New Delhi

## PROCEEDINGS

### THEME:

**Building Local Resilience in a Changing Climate**

*Organized by*

**Ministry of Home Affairs, Government of India (MHA, GoI)**

*In collaboration with*

**National Disaster Management Authority (NDMA)**

**&**

**National Institute of Disaster Management (NIDM)**



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# ABBREVIATIONS

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AI	Artificial Intelligence
AIU	Association of Indian Universities
ATIs	Administrative Training Institutes
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
CAP	Common Alerting Protocol
CBDRR	Community Based Disaster Risk Reduction
CBRI	Central Building Research Institute
CCA	Climate Change Adaptation
CDMP	City Disaster Management Plan
CDRI	Coalition for Disaster Resilient Infrastructure
CoEs	Centres of Excellence (on DRR)
CWC	Central Water Commission
DBT	Direct Benefit Transfer
DDMA	District Disaster Management Authority
DDMP	District Disaster Management Plan
Deptts.	Departments
DG	Director General
DISCOM	Distribution Company
DM	Disaster Management
DoFS	Department of Financial Services



DoNER	Development of North Eastern Region
DoPT	Department of Personnel and Training
DRE	Distributed Renewable Energy
DRR	Disaster Risk Reduction
DSS	Decision Support Systems
DST	Department of Science and Technology
EOC	Emergency Operation Centre
ERSS	Emergency Response Support System
FC	Finance Commission
GEDDMP	Geospatial Enabled-District Disaster Management Plan
GIZ	German Development Cooperation
GLOF	Glacial Lake Outburst Flood
ICCR	Indian Council for Cultural Relations
ICZM	Integrated Coastal Zone Management
IIT	Indian Institute of Technology
IMD	India Meteorological Department
IoT	Internet of Things
IRDAI	Insurance Regulatory and Development Authority of India
ISA	International Solar Alliance
ISRO	Indian Space Research Organization
ITEC	Indian Technical and Economic Cooperation
IUIN	Indian Universities and Institutions Network
KSDMIS	Karnataka State Disaster Management Information System
LBSNAA	Lal Bahadur Shastri National Academy of Administration
MAH	Major Accident Hazard
MEA	Ministry of External Affairs

MeitY	Ministry of Electronics and Information Technology
MGSIPA	Mahatma Gandhi State Institute of Public Administration
MHA	Ministry of Home Affairs
ML	Machine Learning
MoC&F	Ministry of Chemicals and Fertilizers
MoE	Ministry of Education
MoEFCC	Ministry of Environment, Forest and Climate Change
MoES	Ministry of Earth Sciences
MoHFW	Ministry of Health and Family Welfare
MoHUA	Ministry of Housing and Urban Affairs
MoI&B	Ministry of Information and Broadcasting
MoJS	Ministry of Jal Shakti
MoLE	Ministry of Labour and Employment
MoP	Ministry of Power
MoPR	Ministry of Panchayati Raj
MoRD	Ministry of Rural Development
MoS	Minister of State
MoSJE	Ministry of Social Justice and Empowerment
MoWCD	Ministry of Women and Child Development
MoYAS	Ministry of Youth Affairs and Sports
MP-IDSA	Manohar Parrikar Institute for Defence Studies and Analyses
MSME	Micro, Small, and Medium Enterprises
NAPCC	National Action Plan on Climate Change
NBS	Nature Based Solutions
NCC	National Cadet Corps
NCRMP	National Cyclone Risk Mitigation Project





NDEM	National Database for Emergency Management
NDMA	National Disaster Management Authority
NDMIS	National Disaster Management Information System
NDMF	National Disaster Mitigation Fund
NDRF	National Disaster Response Force
NGO	Non- Governmental Organization
NHAI	National Highways Authority of India
NIDM	National Institute for Disaster Management
NPDRR	National Platform for Disaster Risk Reduction
NRF	National Research Foundation
NRSC	National Remote Sensing Centre
NSS	National Service Scheme
NYKS	Nehru Yuva Kendra Sangathan
O-PSA	Office of Principal Scientific Advisor
PMAY	Pradhan Mantri Awaas Yojana
PMO	Prime Minister's Office
RDSS	Revamped Distribution Sector Scheme
SAARC	South Asian Association for Regional Cooperation
SAPCC	State Action Plan on Climate Change
S&T	Science and Technology
SDGs	Sustainable Development Goals
SDMA	State Disaster Management Authority
SDMP	State Disaster Management Plan
SDRF	State Disaster Response Force
SEWA	Self Employed Women's Association
SFDRR	Sendai Framework for Disaster Risk Reduction

SIDS	Small Islands Developing States
SME	Small and Medium-sized enterprise
SOP	Standard Operating Procedure
TERI	The Energy and Resources Institute
TISS	Tata Institute of Social Sciences
UGC	University Grants Commission
ULB	Urban Local Bodies
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nation's International Children Emergency Fund
UNO	United Nations Organization
UNRC	United Nations Resident Coordinator
VNIT	Visvesvaraya National Institute of Technology
WHO	World Health Organization



## BACKGROUND

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The Government of India has recognized the need to evolve a consultative process of decision-making with the active involvement of Central and State Government agencies and all concerned stakeholders in the field of Disaster Risk Reduction (DRR). India has developed a comprehensive DRR apparatus with an effective legal and institutional framework over the years to regulate and manage disaster risks at the national, state and district levels. In order to facilitate the integration of disaster risk reduction into developmental planning across sectors and at all levels, the Government of India (GoI) established a multi-stakeholder National Platform for Disaster Risk Reduction (NPDRR) which was notified on 26th February, 2013. The aim of the platform is to enable broader engagement from Central and State Governments as well as other stakeholders including Scientific, Policy and Academic institutions, Media, International organizations, NGOs, Community representatives, and Industry for DRR in the country.

Following the successful completion of the previous two NPDRR Sessions held in 2013 and 2017 on the themes of "Mainstreaming DRR in Development: From Risk to Resilience" and "Disaster Risk Reduction for Sustainable Development: Making India Resilient by 2030," respectively, the 3rd Session of NPDRR on the theme of "Building Local Resilience in Changing Climate" was organized on 10 -11 March, 2023 at Vigyan Bhawan, New Delhi. The 3rd Session of NPDRR was inaugurated by the Hon'ble Prime Minister, Shri Narendra Modi in the presence of Hon'ble Union Home Minister & Minister of Cooperation, Shri Amit Shah, Principal Secretary to Hon'ble Prime Minister, Dr. P K Mishra and Hon'ble Minister of State for Home Affairs, Shri Nityanand Rai. Along with the members of the NPDRR, more than 1200 experts/delegates including representatives from Central Ministries, State Governments, Institutions of National Importance, Academia, Universities, Civil Society Organization, UN Organizations, elected representatives from Urban Local Bodies and Panchayats and Media participated in the sessions.

Hon'ble Prime Minister emphasized on the needs and challenges of building local resilience against disasters in changing climate scenario. During the inaugural session, deliberations were made on emerging issues with special focus on the Prime Minister's Ten Point Agenda on DRR and its relevance in the integrated



implementation of the Sendai Framework for Disaster Risk Reduction (SFDRR) along with the Paris Climate Agreement and Sustainable Development Goals (SDGs).

Prior to the main event, 19 pre-events were organized across the country and the outcomes of pre-events were fed to the discussions and outcomes of the NPDRR. An exhibition was also organized during the 3rd Session of NPDRR displaying publications/IEC material on disaster risk management, rescue and response related equipment/products and showcasing innovative ideas, initiatives, tools and technologies. A short-film competition on the Common Alerting Protocol (CAP) based on Integrated Alert System to popularize the new phase of the CAP Portal known as Satellite Based Cellular Hybrid Emergency Terminal (SACHET) was also organized.

# Plenary Session 1: Inaugural



**Hon'ble Prime Minister presiding Inaugural session**

The Inaugural Session was presided by the Hon'ble Prime Minister, Shri Narendra Modi, in the presence of Hon'ble Union Home Minister & Minister of Cooperation, Shri Amit Shah, Principal Secretary to Hon'ble PM, Dr. P K Mishra, Hon'ble Minister of State for Home Affairs, Shri Nityanand Rai, Cabinet Secretary, Shri Rajiv Gauba, Union Home Secretary, Shri Ajay Kumar Bhalla and Member & HoD, National Disaster Management Authority (NDMA), Shri Kamal Kishore.

Hon'ble Prime Minister, Shri Narendra Modi extended compliments to all the organizations and related stakeholders, Ministries and Institutions who have contributed to the field of disaster risk reduction and management and helped the

cause of saving lives by putting up concerted efforts in pre-disaster and during disaster phases.

**Hon'ble Prime Minister, Shri Narendra Modi** highlighted the global appreciation for the work carried out by the Indian rescue teams in Turkey and Syria earthquake. He emphasized on the need to integrate modern technologies with traditional knowledge and local wisdom in promoting the cause of disaster risk reduction. Hon'ble Prime Minister underlined that the theme of “Building Local Resilience in a Changing Climate” was inherent in Indian traditions as India has a history of using local solutions to deal with natural catastrophes. He emphasized the need to create a dynamic system to deal with the natural calamities, including floodplain zoning, timely evaluation of current policies and regulations, vulnerability assessments of existing structures along with enabling solutions in a timely manner. He urged for the identification of vulnerable areas and for implementation of timely early warning along with prevention, mitigation and effective response approaches. He also highlighted some of the traditional techniques such as ‘*Bauli*’ which was a source of water during droughts and ‘*Bhunga Houses*’ the resilient houses built in the Kutch region.

Underlining the need to overhaul the entire system, the Hon'ble Prime Minister called for action on two levels. Firstly, experts need to focus on public

participation. He stressed the importance of continuously making people aware about the dangers of earthquakes, cyclones, fire and other disaster risks. It is important to impart awareness about the preparedness process, drill and regulatory provisions. He emphasized the need to further strengthen the mechanisms such as Apada Mitra, NSS-NCC, involving army veterans and ensuring community centers have necessary resources for the first response, as timely start of the rescue work can save many lives.

On the second level, the Hon'ble Prime Minister called for a real-time reporting and monitoring system using modern technology. He stated that knowledge of aspects such as age of the houses, drainage systems and resilience of power and water infrastructure would help in taking proactive steps. Hon'ble Prime Minister discussed the importance of reviewing fire preparedness in urban areas including hospitals, factories, hotels and multi-storied residential buildings, referring to his recent review meeting on the heat wave and noted that regular reviews can save lives. He stressed on the need to improve the skill set of firefighters and also ensuring that there are enough resources to handle industrial fires.

Hon'ble Prime Minister emphasized the need for continuous modernization of local skills and equipment. He recommended to explore the possibility of providing necessary resources to women working in self-help groups to convert forest waste into biofuel. This intervention would help in income generation and reducing fire incidences. He also proposed creating a pool of experts for industries and hospitals where the risk of gas leakages is high. Highlighting the need to make Ambulance networks future ready, the Hon'ble Prime Minister encouraged to explore the use of Artificial Intelligence (AI), 5G and Internet of Things (IoT). He also suggested the stakeholders to consider the use of drones, gadgets for alerting and personal gadgets that can help in locating people buried under debris. He requested experts to study such global practices and recommend suitable approaches for creating new systems and technologies.

Concluding his address, the Hon'ble Prime Minister underlined that India has honed its skills for proactive response to disasters and has initiated efforts for resilient infrastructure. He informed that more than 30 countries of the world have joined the 'Coalition for Disaster Resilient Infrastructure (CDRI)' formed under India's leadership. He expressed that the deliberations under the 3rd session of NPDRR would lead to important suggestions and solutions and, thereby, would lead to the emergence of actionable points with a futuristic vision for DRR.

During the event, the Hon'ble Prime Minister felicitated the awardees of the Subhash Chandra Bose Aapda Prabandhan Puraskar. The winners of the 2023 Puraskar were Odisha State Disaster Management Authority (OSDMA) and the Lunglei Fire Station, Mizoram. Hon'ble Prime Minister also inaugurated the exhibition for showcasing innovative ideas, initiatives, tools and technologies in the field of DRR.



## Key Areas of Intervention as suggested by Hon'ble Prime Minister

- Provide training to 'Yuvak Mandals' and 'Sakhi Mandals' at village level for disaster management.
- Strengthening the mechanisms of Aapda Mitra, NSS-NCC and involving Army Veterans for disaster response.
- Necessity to educate the public about preparedness process, drills and regulatory provisions.
- Strengthen community centers with resources needed for emergency response which can be used by the first responders to start the rescue work timely.
- Continuous modernization of local skills and equipment in disaster management.
- Explore the possibility of providing equipment/resources, that change forest waste into bio-fuel. On one hand, this has the potential to increase the incomes of women SHGs and on the other hand to reduce the fire incidents in forest areas.
- Creating a pool of experts for industries and hospitals to address gas leakages and fires.
- Exploring the use of AI, 5G and IoT in improving disaster risk management.
- Exploring use of the drones and personal gadgets that can help in locating people buried under debris during search & rescue.
- Studying and adopting good practices for creating new systems and technologies.
- United efforts to address climate change, social concerns and environment for disaster resilience in integrated way.



Hon'ble Prime Minister felicitating awardees of the 2023 Subhash Chandra Bose Aapda Prabandhan Puraskar i.e. Odisha State Disaster Management Authority (OSDMA) and the Lunglei Fire Station, Mizoram



Addressing the inaugural session, **Hon'ble Union Home Minister & Minister of Cooperation, Shri Amit Shah** underlined the importance of 3rd session of NPDRR to take stock of the initiatives and actions taken so far for DRR and to increase the scale and speed of the initiatives and actions to reach the desired destination of resilience building.



**Hon'ble Union Home Minister & Minister of Cooperation addressing Inaugural session**

**Hon'ble Union Home Minister & Minister of Cooperation** referred to India's paradigm shift in the field of DRR from relief-centric approach to proactive and multidisciplinary approaches, with a thrust on early warning, disaster risk mitigation and preparedness. He mentioned that a huge shift has taken place in DRR from 1999 to 2023. Hon'ble Union Home Minister & Minister of Cooperation emphasized

the fact that India has not only improved in reducing damages and losses caused by disasters but also built a robust system to support neighboring countries by establishing an effective early warning system and efficient disaster response. He appreciated NDMA & SDMAs for working in coherence and coordination and NDRF for making its global reputation through successful rescue operations. Hon'ble Union Home Minister & Minister of Cooperation also stated his vision that the two-day deliberations of the NPDRR - 3rd session would pave the way forward to advance the work on PM's ten-point agenda on DRR. Hon'ble Union Home Minister & Minister of Cooperation, Shri Amit Shah also highlighted some of the important recent initiatives of the Government of India.

#### **Recent Initiatives of Government of India to take DRR at the Ground Level**

**Aapda Mitra Scheme:** Community being the first responders of disasters, local youths are engaged and trained in the States

**National Disaster Mitigation Fund:** Constituted for disaster mitigation initiatives

**India Disaster Resource Network:** A web-based resource inventory of equipment, skilled human resources and critical supplies for emergency response

**Common Alerting Protocol:** To send timely information/warning via SMS service for increased last mile connectivity

**Mobile Applications for Weather Information:** Mausam, Meghdoot, Damini and Crowd Sourcing information with respect to weather

**Guidelines:** For Cold Waves and Frost, Earthquake Safety, Cool Roof: House Owners Guide to Alternate Roof Cooling Solutions, GLOF, Heat Waves, Landslide Risk Management Strategy, Disability Inclusive DRR and Temporary Shelters for Disaster Affected Families.

**Union Home Secretary, Shri Ajay Kumar Bhalla** expressed his gratitude for the kind presence of Hon'ble Prime Minister, Hon'ble Union Home Minister & Minister of Cooperation, Principal Secretary to Hon'ble Prime Minister, Hon'ble Minister of State for Home Affairs, Cabinet Secretary, Member Secretary & HoD, NDMA and representatives of the key Ministries, Departments and all States & UTs along with other stakeholders and functionaries working in the area of DRR.

Union Home Secretary mentioned that the presence of the Hon'ble Prime Minister in the event shows the commitment of the GOI for DRR in the country. He also expressed gratitude to the Hon'ble Prime Minister for inaugurating the exhibition and interacting with the exhibitors, showcasing new and advanced technologies being used in the field of DRR.

#### **Key Recommendations of the Plenary Session 1 (Actionable Points):**

- Convergence of traditional knowledge and modern technology.
- Use of advanced tools and technology to develop models for improving housing and town planning.
- Constant monitoring and evaluation of the ongoing initiatives to achieve the set targets of DRR.
- Ensure 'Local participation for local resilience'.
- Strengthening of communication system for real time information and monitoring.
- Enhancing scale and speed of initiatives and actions taken for DRR to achieve the goals set for a disaster resilient nation.
- Recognition and Reform were emphasized as the two main components for strengthening DRR.
- Knowledge on aspects like age of the houses, drainage, resilience of electricity and water infrastructure to help in DRR.
- Promote the use of AI, 5G and Internet of Things (IoT).
- Make the ambulance network future ready to deal with newer and futuristic risks in greater uncertainties.

## Ministerial Session: Strengthening of Disaster Management Systems in the States

The Ministerial session was chaired by **Hon'ble Union Minister of Jal Shakti, Shri Gajendra Singh Shekhawat**. During his opening remarks, Hon'ble Union Minister of Jal Shakti highlighted the effect of climate change in accelerating incidences of hazards like landslides, Glacier Lake Outburst Floods (GLOF), cloudbursts, heat waves, etc. He informed that the 15th Finance Commission (FC) allocated more funds than previous FCs for DRR. He emphasized on learning lessons taught by past disasters like COVID-19 and the recent earthquake in Turkey. He also mentioned the importance of urban flood management and learning lessons from the Joshimath incident. He further underlined the need to expedite DRR measures to have a disaster resilient nation along with 'Viksit Bharat' by 2047.

The Chair informed that since disaster management is a state subject, central ministries and departments have a supporting role. The coordinated efforts between the central government and the states are therefore crucial. Hon'ble Union Minister of Jal Shakti stated that states are undertaking a wide range of initiatives in alignment with the National Disaster Management Plan and their own State Disaster Management Plans. These initiatives include technological measures, financial mechanisms, capacity-building activities and the establishment of emergency operation centers, early warning systems and communication channels. In this context, there were presentations in this session by (or on behalf of) the ministers in charge of disaster management in various states.

### Andhra Pradesh

Being a coastal state, Andhra Pradesh faces multiple cyclones every year. **Hon'ble Minister, Disaster Management, Government of Andhra Pradesh, Smt. Taneti Vanitha** referred to the outcomes of the 'National Cyclone Risk Mitigation Project (NCRMP)' which has helped in mitigating the impact of cyclones in the state. She apprised that shelters have been built and connectivity through roads and bridges has been established in nine coastal districts of the state. She also requested support for other structural measures including building cyclone-safe housing and addressing coastal erosion. She requested other coastal states to express their concerns regarding cyclone risk mitigation. In addition, the Minister informed that as a result of several drought mitigation measures, Andhra Pradesh has not faced any drought in the last four years and that the state has also raised a large number of Aapda Mitra volunteers.



## Bihar

Highlighting that the frequency of floods, drought, heat waves and forest fires has increased in Bihar due to climate change, **Hon'ble Minister, Disaster Management, Government of Bihar, Shri Shahnawaz** informed about the progress of the State in the direction of DRR. Preparation of a DRR roadmap under SFDRR, monetary relief measures by the Bihar Government, creation of State Disaster Response Force, 'Emergency Response Training Centre' in all the districts, trained and licensed engineers whom people may approach for verification of building plans for earthquake safety are some of the interventions mentioned by the Hon'ble Minister. He highlighted that river erosion has been affecting a large population in north Bihar and the state government has been providing relief to the affected families from state funds. He proposed to include river erosion in the list of notified disasters and sought central assistance for mitigating it. He further informed that lightning has emerged as a new hazard in the state causing 1500 deaths in the last five years, with more than 100 deaths in a single day in 2020. Bihar has developed a mobile app for lightning alerts. He requested that the state's share for the state Disaster Response Fund should be reduced from 25%, which was too high. He assured that with more financial and technological support from the Centre, Bihar could undertake more initiatives for DRR in the state.

## Manipur

Appreciating the Centre's grant under State Disaster Mitigation Fund (SDMF), **Hon'ble Minister, Relief & Disaster Management, Government of Manipur, Shri Awangbow Newmai** pointed out that SDMF has given states more responsibility for DRR. In this regard, he requested the Centre to provide more assistance citing the expenses for maintaining SDRF as a burden for small states like Manipur. Supporting the proposed 'National Landslide Risk Mitigation Program' by NDMA, the Hon'ble Minister emphasized that landslides are a daily challenge for the hilly states and more assistance is required for landslide and earthquake mitigation and to deal with GLOFs for Himalayan states.

The Hon'ble Minister also highlighted that reaching a remote hilly village affected by a landslide or any other disaster, was a major challenge faced by the State Disaster Response force in the hilly states. He underlined the need to prepare more Aapda Mitra volunteers and local villagers as first responders with some basic training and awareness. He added, that community participation in remote hilly villages was needed for DRR. The Hon'ble Minister highlighted the need for central support to create such trained human resources. In the context of a landslide at Tupul railway station in Manipur in 2022, he urged that the respective agencies should carry out construction activities more carefully. He stressed the importance of enforcement of building codes and by-laws in the state for DRR.



## Uttar Pradesh

**Hon'ble Minister, Revenue, Government of Uttar Pradesh, Shri Anoop Pradhan** informed that the state has included lightning in the list of notified disasters as there has been an increase in the frequency of lightning events in the state. A special Lightning Safety Alert has been initiated in the three most lightning-prone districts, viz. Mirzapur, Prayagraj and Sonbhadra. He highlighted that UP has an integrated early warning system for all weather-related hazards and 2000 automatic weather stations have been installed in the state. UP has also developed the capacity of about 5000 Aapda Mitra Volunteers along with training of 2 lakh students for disaster safety. Uttar Pradesh has also engaged consultants in each District Disaster Management Authority (DDMA) and relief assistance was being disbursed by way of Direct Benefit Transfer (DBT).

## Uttarakhand

Highlighting the multiple challenges faced by the Himalayan states, **Hon'ble Minister, Agriculture, Government of Uttarakhand, Shri Subodh Uniyal** emphasized that these states need more grant and technological support for mitigation and capacity building of the local people. He urged that there should be a specific DRR policy for the Himalayan states of India. He drew attention towards the recent Joshimath land subsidence and emphasized the need to enforce building codes and by-laws in these states for DRR. The Hon'ble Minister also informed that the forest fires have also become a major challenge in Uttarakhand. Forest fire management committees were functional in each Village Panchayat of 432 forest fire prone villages of the state and financial assistance was being provided for their capacity building. He stated that the migration of people to other states due to increased disaster impacts in the Himalayan region was another challenge faced by the state and added that this migration could also become a burden for other states. He also highlighted the importance of CBDRR activities and emphasized that capacity building was needed for all the 7.5 lakh villages in the country for DRR. He appreciated the allotment of response and mitigation fund at the state level.

## Andaman & Nicobar Islands

**Hon'ble Lt. Governor, Andaman & Nicobar Islands, Admiral D.K. Joshi** informed that as the population density of UT is very low, Swasthya-Doot Scheme was being implemented under which camps are organized in villages and schools for training on DRR. He further informed that on 12th January, 2023 the Great Nicobar Island was declared as the first sub-division of India where every individual was trained on the basic life support management skills to deal with emergency or disaster.

## Odisha

Hon'ble Minister, Revenue, Government of Odisha, Smt. Pramilla Malik appreciated cyclone risk mitigation efforts undertaken in the NCRMP. She informed that Odisha has adequate early warning systems for weather related hazards, a well-equipped State Disaster Response Force and an informative mobile app for alerting people on flood, cyclone and drought. Two coastal villages of Odisha have also been declared as Tsunami resilient after mangrove protection. She further informed that the State Gram Panchayat Act has been amended to include DRR activities at the village level and Disaster Management has been introduced in the school education of the state. She requested for increase in the grant under NCRMP and more assistance for the State Disaster Response Fund in line with the National Disaster Response Fund (NDRF). She proposed to include lightning and heat waves in the list of notified disasters.

### National Disaster Response Force (NDRF)

DG, NDRF, Shri Atul Karwal highlighted that in many states, participation of local police in the training programmes was not adequate at times and this needs to be viewed by the states seriously. He informed that NDRF was ready to train state Disaster Response Force (SDRF) as and when the demand was received from the states. The speaker urged the states to follow the document 'Lesson Learnt' shared by NDRF.

Member, NDMA, Lt. Gen. Syed Ata Hasnain (Retd) thanked all the Ministers from the states for supporting mock exercises organized by NDMA. He emphasized that the states may ensure the participation of senior level officers, instead of sending junior level officers to such events. He also emphasized that the senior level officers at district should participate in the trainings being organized at the district level. He urged all the states to take new CAP trainings seriously and stressed that rather than forwarding the technical messages received from IMD, the states need to simplify the messages to facilitate understanding by the common citizens before dissemination.

The Union Home Secretary, Shri Ajay Kumar Bhalla, expressed his gratitude to all the Ministers and other dignitaries present during the ministerial session.





**Ministerial Session chaired by Hon'ble Union Jal Shakti Minister, Shri Gajendra Singh Shekhawat**

### Key Recommendations of the Ministerial Session (Actionable Points):

- Consider inclusion of heat wave, lightning, forest fire, river erosion and coastal erosion in the list of notified disasters. For this, necessary assessment/reviews for an appropriate decision may be expedited.
- Building regional capacity by creating separate SDRF at the state level for the smaller states.
- Specific policy statement for Himalayan states may be developed to guide on specific aspects of DRR.
- Scope of NCRMP may be expanded to cover all the coastal areas. Similar projects may be planned for other hazards.
- Participation of local police in training programmes organized by NDRF needs to be improved.
- Capacity building on Building codes and bye-laws need to be improved at local levels through State's DM plan execution.

## Thematic Session 1: Climate Change Adaptation and Disaster Risk Reduction

The Thematic Session-1 was chaired by **Distinguished Fellow, TERI, Shri R.R. Rashmi (former Addl. Secretary MoEFCC)** and co-chaired by **Addl. Economic Advisor, MoEFCC, Ms. Rajasree Ray** and moderated by **HoD, Environment Disaster Risk Management Division, NIDM, Prof. Anil Kumar Gupta, Council of Energy, Environment and Water (CEEW), New Delhi, Dr. Arunabha Ghosh, Addl. Chief Secretary, Government of West Bengal, Shri Vivek Kumar and Environmentalist from Say Earth, Shri Ramveer Tanwar**, were amongst the panelists.

**The Chairperson, Shri Rashmi** highlighted that policies and interventions on nature-based solutions (NBS), are needed to bring together climate change adaptation and DRR efforts. It is important to address the visible effects of climate change on biodiversity loss, land degradation and loss of natural resources. He called for re-evaluating development trajectories and bringing about sustainable systemic changes with the use of technology and indigenous knowledge systems and suggested the following four ways to integrate Climate Change Adaptation (CCA) and DRR:

- Reducing the risk in the Least Cost Manner (LCM) by identifying the most vulnerable communities and also identifying the natural system of climatic change like coastal systems, snow-capped mountains, river systems etc.
- Ecosystem-Based Adaptation can be promoted for positive outcomes by engaging local communities, especially in sanitation, flood control, landslide prevention, etc.
- Key to avoid mal-adaptation is by looking at risks with a systemic approach rather than sector-wise. It is important to mainstream CCA and DRR in the planning process with a well-marked financing facility as well as a robust institutional framework.
- Improvement in institutional capacity by incentivizing actions of the states and local communities can play a major role.

**Dr. Arunabha Ghosh**, highlighted the ‘Feasibility of Climate Change Adaptation for Disaster Risk Reduction’ and also emphasized on the linkages between CCA and DRR, Paris Agreement and SFDRR. He underlined that Enablers like sustainable finance, technology, circular economy, climate resilience and international cooperation can play an important role in addressing the impacts of climate change. He also pointed out the swapping trend in the districts that experienced floods and have now become drought-prone and suggested that the response system should be equally adaptive.





**Dr. Ghosh** underlined that as of now NBS financing is mostly public sector driven and required more stakeholders. In this regard, he further elaborated 3 types of gaps viz. market-related, related to technology and confusion in selecting indicators for assessing socio-economic benefits in getting finance and raised his concerns for the implementation of NBS.

**Shri Vivek Kumar** while focusing on 'Mangrove Mission in West Bengal' shared the case study of mangrove conservation in Sundarbans, West Bengal. Highlighting the importance of delta mangrove ecosystems which have high area rates of carbon sequestration compared with any other ecosystem, terrestrial or marine, he informed that the Sundarbans delta provides a host of ecosystem services and is one of the UNESCO's World Heritage Sites. However, the delta region is facing various pressures, including cyclones, subsidence and a rise in the sea level. Shri Kumar presented insights about a project aimed at 20 crores plantations with 19.50 crores being mangrove and associated species as a way to combat recurrent cyclones.

**Shri Ramveer Tanwar**, focused his deliberation on 'Wetland Reclamation and its Impact on Drought and Flood Mitigation' and discussed that water bodies across rural and urban landscapes are becoming degraded due to anthropogenic pressures like encroachment of water bodies and sewerage disposal. While pointing out on a direct linkage between urban development and the degradation of ponds, he emphasized the need for water bodies which, if effectively used, can be a source to mitigate flood risk, recharge groundwater and improve biodiversity, etc.

He further underlined that restoring ponds can lead to community-based livelihoods as well as an increase in local biodiversity. He shared a 10-point strategy used by his organization to restore ponds viz. pond identification, joint visit with the owner or sponsor, NOC from the government agency, a proposal to sponsor, work order confirmation from the sponsor, Jal Chaupal (consultation with local communities), water quality analysis and de-watering, clean up and restoration, landscaping plantation, and maintenance & sustainability.

**Ms. Rajasree Ray** delivered her concluding remarks on the major takeaways from the thematic session. She emphasized the need for ecosystem-based adaptation for DRR. She highlighted that NBS can provide an opportunity to develop a business model for financial investment, community-based actions and promoting gender equality and therefore mapping capacity, financial resources and technology would be crucial for implementing NBS, as well as understanding the risks associated with it. She underlined that NBS can be carried out alongside ongoing programs to improve financial stability and learnings can be drawn from the Integrated Coastal Zone Management (ICZM) project being implemented by MoEFCC.



Thematic Session 1 chaired by Distinguished Fellow, TERI, IAS (Retd), Shri RR Rashmi

### Key Recommendations of the Thematic Session 1 (Actionable Points):

- Locally led strategies are essential for effective ecosystem-based approaches to Disaster Risk Reduction (DRR) and climate adaptation. Conduct feasibility assessments using methods like the Least Cost Method or cost-benefit analysis to determine viable options.
- Promote systemic and strategic actions, including integrating adaptation measures in State Action Plans on Climate Change (SAPCCs) and Adaptation Action Plans at the district level. This includes involving local communities in programs to ensure ownership and enhance the creation of natural, social and economic assets.
- Develop a comprehensive framework to capture and evaluate diverse approaches being implemented in India for DRR and climate adaptation. Implement large-scale solutions through systemic innovations by integrating effective approaches into State Disaster Management Plans (SDMP), District Disaster Management Plans (DDMP) and National and State Action Plans on Climate Change (NAPCCs/SAPCCs).
- Enhance financial innovations to mainstream effective solutions by improving risk management assessments, incorporating holistic environmental considerations, reducing costs and utilizing innovative risk financing tools. Develop policies to promote private sector engagement in implementing these solutions.
- Establish a unified framework for evaluating and monitoring various approaches and create a compendium of best practices and challenges from already implemented programs to inform future initiatives. Set up a task force and a research and knowledge network with policy linkages, hosted at a suitable academic or research institute, supported by scientific ministries and organizations such as MOEF&CC, NDMA, NIDM and DST.

## Thematic Session 2: Building Local Resilience for Disaster Risk Reduction

The Thematic Session-2 was chaired by **Member, Bihar State Disaster Management Authority (BSDMA), Shri P N Rai** and co-chaired by **Executive Director, NIDM, Shri Rajendra Ratnoo, District Magistrate, Khagaria, Bihar, Dr. Alok Ranjan Ghosh, Member, Watershed Organization Trust, Ahmednagar, Shri Crispino Lobo and Member Secretary, Kerala SDMA, Dr. Sekhar Lukose Kuriakose**, were among the panelists.

The chairperson, **Shri P N Rai** while emphasizing on sharing of good practices, investing in empowerment, infrastructure and skills of the local community, suggested a few key strategies for local resilience namely, training and capacity building of all the stakeholders, public awareness and education, programmes for reaching out to community and children, partnerships, plans & technological tools, etc. Shri Rai cited some key initiatives taken by Bihar like the Chief Ministers School Safety Programme & School Safety Fortnight, Safe Swim Programme, Hazard focused Safety Weeks, Panchayat level trainings, City Disaster Management Plans (CDMPs) etc.

**Shri Rajendra Ratnoo** referred to the Point No.8 of the PM's 10-point agenda on DRR i.e. to build on local capacity and initiative to enhance disaster risk reduction and emphasized on the need for convergence amongst departments at district, block and panchayat levels rather than working in silos so as to enhance the capacities of the communities to encourage local participation for building local resilience.

**Dr. Alok Ranjan Ghosh** highlighted building community resilience against floods and brought the perspectives from Bihar wherein floods are known to help in providing new alluvium and raising the water table etc. He informed about various measures being undertaken in Bihar to enhance community resilience, combating climate change through schemes and adapting to alternate methods of controlling floods. He described resilience as the sustained ability of communities to withstand, adapt to and recover from adversity.

**Shri Crispino Lobo** emphasized on strengthening of food system by mitigating drought & adapting to climate change. He also emphasized on holistic interventions including women empowerment, nutrition, health and sanitation, climate-smart agriculture, livelihoods, integrated watershed development, ecosystem and biodiversity conservation etc. Shri Lobo also pointed out that the integrated Eco-system-based adaptation approach will not only build resilience and reduce the vulnerability of local communities to climate change, but also conserve the natural and biological resources (ecosystem services).



**Dr. Sekhar Lukose Kuriakose** discussed the interventions of Housing Recovery and Reconstruction with the concept of “Build Forward Better” indicating the need to build a better, safer and resilient future. He cited Kerala’s good practice approach through their climate smart disaster resilient homes plan, through which the state has adopted Risk Informed Planning. This includes mainstreaming, legally adopted Risk Informed Disaster Management plans in development and amendments of town & country planning rules. He informed that the state has covered four types of DRR interventions in the housing sector viz. hazard susceptibility linked relocation, local level customization of building regulations, financial & policy and operational measures. He highlighted the need for providing funding support for hazard susceptibility linked relocation through NDMF/SDMF, socio-technical-legal facilitation through shelter hubs and development of knowledge bank for appropriate house designs in susceptible areas.



**Thematic Session 2 chaired by Member,  
Bihar State Disaster Management Authority, Shri P N Rai**

### Key Recommendations of the Thematic Session 2 (Actionable Points):

- Capacity building of different stakeholders including community volunteers in Gram Panchayats, existing and newly elected members of Panchayati Raj Institutions (PRIs) and Urban Local Bodies (ULBs) and especially the more vulnerable groups including persons with disabilities.
- Community participation should be enhanced at the district, panchayat and block level through consultative and participatory planning, awareness, etc.
- Effective flood resilience strategies should be tailored to the specific needs and characteristics of the community in question, considering local specific issues.

- Integrated Ecosystem based adaptation approach may be adopted for better community resilience
- Long-term investment approach over a short-term solution is needed for building community resilience against floods.
- Building partnerships with community organizations and other stakeholders can help to build community resilience.
- Community-based natural resource management initiatives can help build social resilience against climate driven disasters, by promoting sustainable use of resources and fostering local leadership and decision-making.
- Examples of good initiative of hazard susceptibility linked relocation, for example in Kerala, may be studied for feasible replication to help people to relocate to safer areas.
- Need to create a knowledge bank of resilient house designs for different vulnerable areas.
- Disaster and climate resilient reconstruction should be promoted through training, awareness and implementation of design codes and standards.
- Based on systemic and participatory research local level models for specific needs and local policy-planning may be taken up, with help of suitable Centre's of Excellence (COEs)/institutions.



## Plenary Session 2: Mainstreaming DRR in Social and Economic Sectors

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The Plenary Session 2 was chaired by Hon'ble Union Minister of Jal Shakti, Shri Gajendra Singh Sekhawat and co-chaired by Secretary, Ministry of Power, Shri Alok Kumar. Additional Secretary, NDMA, Shri Alok, Member, World Health Organization (WHO), Dr. Roderico Ofrin, DDG, Ministry of Rural Development (MoRD), Shri Gaya Prasad, Joint Secretary, Ministry of New and Renewable Energy (MNRE), Shri Lalit Bohra, were amongst the panelist.

The Chairperson and Hon'ble Union Minister of Jal Shakti, Shri Gajendra Singh Sekhawat emphasized the importance of a proactive approach to DRR and stressed the need to implement DRR in all development sectors. Hon'ble Minister discussed the Gati Shakti Yojna, a major infrastructure initiative in India, and emphasized the importance of integrating DRR at all stages, from project planning to execution. Hon'ble Minister also highlighted that India is running the world's largest Dam Safety program and has advanced flood forecasting systems. Hon'ble Minister cited the "*Lifestyle for Environment*" program to prioritize individual behaviours in climate action and also stressed on the importance of these principles to address climate change and to achieve sustainable development. He added that climate change related disaster risks should always be considered to prepare ourselves better.

Shri Alok Kumar emphasized the importance of integrating DRR into the power sector for DRR. He urged the need to make efforts to reduce the disaster risk by underground cabling, lowering the height of high-tension towers and designing higher strength poles in coastal cities and emphasized on the need for minimizing the period of outage and reducing the overall damage to infrastructure. He informed that the Government of India is assisting states to build disaster-resilient infrastructure and schemes like the Revamped Distribution Sector Scheme (RDSS) have been launched for this purpose. He further stated that every DISCOM has prepared a disaster management plan and recent improvements have led to quick restoration of power supply, as demonstrated in the recent cyclone in Gujarat. He also threw light on the importance of power backup, due to which the system level operations do not get affected during disasters.

Shri Alok highlighted the emerging need to ensure the safety of highways from floods and landslides. He emphasized the importance of implementing design standards and codes at every stage of the development project to prevent disasters like the devastating landslide that occurred in Mandi, Himachal



Pradesh in August 2022. He suggested that highway engineers should adopt and utilize the advanced technology and undertake risk assessment in the design, operation and construction process to prevent the risk.



**Hon'ble Union Jal Shakti Minister, Shri Gajendra Singh Sekhawat launched 'Flood Affected Area Atlas' prepared by National Remote Sensing Centre, ISRO using satellite data**

**Dr. Roderico Ofrin** provided an overview of the existing healthcare system and emphasized the importance of investing in health as a means to strengthen the overall health systems. He advocated the shift from a hazard-focused approach to vulnerability and capacity-focused approach, involving the entire society and prioritizing risk management over response to build resilient health systems. He stated that the goal is to build capabilities and not just capacities at sub national level but also invest in institutionalizing the approach at the governmental and local levels. He further suggested that the traditional approach of planning for communities should be shifted to planning with communities.

**Shri Gaya Prasad** stressed the importance of mainstreaming DRR in the Pradhan Mantri Awaas Yojana-Gramin (PMAY-G). Highlighting the salient aspect of the Scheme, he informed that the promotion of region-specific, climate-responsive housing designs/technologies is encouraged, quality of construction is maintained and trainings are imparted to masons on safe and resilient construction practices under the scheme. He emphasized that the inclusion of rural masons in the DRR process for quality construction as well as evidence-based monitoring of house construction and release of dedicated funds are essential. He further mentioned that a compendium of model housing typologies "PAHAL" has been adopted with low cost, disaster resilience, local geo-climatic considerations and cultural considerations.

**Shri Lalit Bohra** highlighted the urgent need to address disasters with a natural origin and climate risks, which have the highest impact on human life. He informed about the six pillars of DRR in Renewable Energy (RE) viz.

site selection, resilient design, backup and emergency response plan, climate resilience, insurance and risk management and community engagement. He stated that Distributed Renewable Energy (DRE) is one of the most resilient energy sources, playing a very crucial role in disaster management where industries faced certain level of risk from natural or induced hazards.



Plenary Session 2 chaired by, Hon'ble Union Jal Shakti Minister,  
Shri Gajendra Singh Shekhawat

#### Key Recommendations of the Plenary Session 2 (Actionable Points):

- DRR needs to be integrated at all stages of development, from project planning to execution to ensure that infrastructure is resilient and sustainable.
- Power sector is critical for efficient disaster management response as other sectors depend on it. There is a need to give impetus to build disaster-resilient infrastructure and prompt response to ensure quick restoration of power supply.
- Highways need to be safe from floods and landslides with design standards implemented at every stage of the highways and road project for disaster resilience.
- Strengthening health systems' resilience is crucial and has become a prime concern in recent times. This includes health adaptation, health emergencies and health infrastructure resources.
- Partnerships with professional associations, technical and academic organizations and specialized NGOs/CSOs (civil society organizations) is essential in DRR.



- Six pillars of DRR in Renewable Energy (RE) include site selection, resilient design, backup and emergency response planning, climate resilience, insurance and risk management and community engagement. There is need to consider DRR in all aspects of new and renewable energy systems.

### Thematic Session 3: Urban Risk Governance in DRR

The Thematic Session-3 was chaired by **Secretary, Ministry of Housing and Urban Affairs (MoHUA)**, **Shri Manoj Joshi** and co-chaired by **Additional Secretary, Disaster Management, MHA**, **Shri Hitesh Kumar S Makwana**, **Mission Director, Smart Cities Mission**, **Shri Kunal Kumar**, **Member-Secretary, Chennai Metropolitan Development Authority**, **Shri Anshul Mishra**, **India Head, Cities-40**, **Smt. Shruti Narayan**, were amongst the panelists.

The **Chairperson, Shri Manoj Joshi** expressed his concerns about the changing climate and disaster scenarios in urban areas and suggested that planning and execution should go hand-in-hand. He further stated that location specific flood-related planning and building resilient structures was the need of the hour. He stressed the need for structural strengthening and renovations of the buildings instead of relocation of informal settlements to avert future disasters.

**Shri Hitesh Kumar S Makwana** advocated for development of a well-organized, traditional and sustainable approach in building houses & town planning. He viewed that a mix of traditional practices and advanced technologies should be preferred in making the buildings resilient. To improve the resilience of the cities, he suggested the need to develop effective building codes and regulations duly incorporating the features of DRR. He ended by highlighting the importance of sensitive land use planning for sustainable development.

**Shri Kunal Kumar** expressed his views on achieving the resilience in smart cities. He stated that the sustainable usage of materials with active community participation should be the prospect of smart cities. He emphasized the need for technology-driven ideas such as good early warning systems for disasters.

**Shri Anshul Mishra** emphasized that the planning and development in urban setting must include DRR to amplify resilience through sustainable development. He opined that people and the environment can be protected by implementing Transferrable Development Rights Programs to create more resilient communities. He suggested that financial bodies should be set up to address the need to build or renovate infrastructures to withstand disasters.

**Smt. Shruti Narayan** highlighted the importance of strengthening urban governance by influencing local bodies to integrate disaster risk management



into their urban planning and development initiatives. She stated that all stakeholders including local communities should work together to address disaster drivers like climate change, environmental degradation and urbanization. She added that a Climate Action Plan with adaptation network for cities will help in developing climate risk assessments for the community.



**Thematic Session 3 chaired by Secretary,  
Ministry of Housing & Urban Affairs, Shri Manoj Joshi**

### Key Recommendations of the Thematic Session 3 (Actionable Points):

- Need to mainstream DRR and CCA measures into development planning for climate-derived smart city planning and resilient infrastructures. This needs the studying of the pilot projects and best practices in the country for scaling up or replication.
- Early Warning Systems should be strengthened to meet city-specific needs and predict future disaster risks.
- Decentralized but coordinated decision making needs to be linked to effective communication strategy for better reach to the masses thereby, strengthening of response system.
- Urban flooding issues in Indian cities need to be studied from a local perspective and location-specific mitigation measures should be identified and integrated into city plans.
- Nationwide digital-twin system for mapping of the high-risk prone areas can help the planners, experts and funding agencies to rationally decide preparedness and mitigation measures.

- Earthquake-resistant buildings and retrofitting techniques should be cost-effective. Further research in this area is needed, in collaboration with the Centres for Excellence on DRR and NIDM.
- Utilization of scientific research & technological innovations should be promoted to achieve urban resilience and industrial risk mitigation.
- Risk insurance should be an integral part of urban risk reduction strategy, and further research towards feasible models is desired.
- Enhanced database of vulnerable communities, infrastructure and assets can be used to assess vulnerability and risks.

## Thematic Session 4: Building National Integrated Response System

The Thematic Session-4 was chaired by Member, NDMA, Lt. Gen. Syed Ata Hasnain and co-chaired by Joint Secretary, Disaster Management (MHA), Shri Sanjeev Kumar Jindal. Commanding Officer, 2nd Battalion, NDRF, Kolkata, Shri Gurminder Singh. Founder, Tiranga Mountain Rescue, Shri Hemant Sachdev, Commandant, UPSDRF, Uttar Pradesh, Dr. Satish Kumar, Founder, Sustainable Environment Ecological Development Society (SEEDS), Shri Manu Gupta, were amongst the panelists.

The Chairperson, Lt. Gen. Syed Ata Hasnain highlighted the need for “enhanced teamwork” for integrated response and briefly apprised about the rapid response from Gol in relief and rescue in extreme conditions after the Turkey earthquake in February, 2023. He also underlined the need for integrated response systems, especially for mountain hazard scenarios.

Shri Sanjeev Kumar Jindal emphasized on strengthening the mitigation aspect and to put efforts in the rural areas particularly to develop a robust resilient community. Shri Jindal suggested that the coordination between the governments at national and state levels will be essentially required for smooth implementation of the DRR efforts.

Shri Gurminder Singh discussed about the lessons learnt from the rescue mission “*Operation Dost*”. He emphasized on the pre-disaster preparedness of the communities, agencies and individuals, to decode do’s and don’ts in a mission, creating synergy between national and international governing bodies. He suggested that specially trained experts & state-of-the-art equipment are needed to lessen the response time for international missions.

Shri Hemant Sachdev discussed about the need for high-altitude mountain rescue skills, identification of mountaineers for the rescue operations, better

equipment, formation of a special workforce for effective coordination & communication and ensuring a long term strategy in development. He emphasized on structuring the resource organizations with monetary assurance for its sustainability for various activities viz. availing helicopters on lease, creating independent working body and providing commercialized services to private persons.

**Dr. Satish Kumar** gave an insight into the flood preparedness of the UP SDRF team. He highlighted the role of UP SDRF team in disaster preparedness such as creating awareness, regular mock drills, allocation of required instruments and coordination with stakeholders (like Aapda Mitra) before the onset of flood season in Uttar Pradesh. He highlighted the challenges being faced during flood events which include limited resources, sluggish decision making, lag in communication and the need for community level cooperation and involvement.

**Shri Manu Gupta** shared his views on the role of Civil Society in Disaster Response. He suggested that civil societies such as community-based and non-governmental organizations can be trained to work together in various phases of disasters including preparedness, mitigation, response, recovery and rehabilitation. He suggested formation of networking structures at the Union and State levels for greater outreach and awareness for equal access to resources and services to all.



Thematic Session 4 chaired by Member, NDMA, Lt. Gen. Syed Ata Hasnain (Retd)

### Key Recommendations of the Thematic Session 3 (Actionable Points):

- Enhanced infrastructure design and material innovations are needed to minimize the detrimental effects of earthquake-related disasters. Traditional and new technologies can be studied for integrated approaches.

- Civil Societies and NGOs have significant strengths and capacities. Local administration should effectively coordinate with them in managing disaster response related issues.
- Superior communication skills, well-trained personnel and state-of-the-art equipment are required during international missions. Proactive interventions may be planned and executed.
- Young individuals may be encouraged to join mountaineering courses for developing trained workforce in avalanche rescue operations.
- Need for more structured capacity building on search & rescue strategy, focusing on specialized personnel, equipment and site-related management skills.
- Limitations like tools for decision making and resource availability in critical locations need to be assessed in advance using early warning and preparedness strategies.

## Thematic Session 5: International Cooperation for Strengthening Regional and Global Partnerships

The Thematic Session-5 was chaired by Director General, Manohar Parrikar Institute for Defence Studies and Analyses (MPIDSA), Shri Sujan R. Chinoy and co-chaired by UN Resident Coordinator, Shri Shombi Sharp. India's Ambassador (Former) to Hungary, Vietnam, and Nepal, Shri Ranjit Rae, Director General, CDRI, New Delhi, Shri Amit Prothi and Member, NDMA, Shri Krishna S Vatsa, were amongst the panelists.

The chair highlighted the "*Principle of Global Good*" in Indian Foreign policy citing the best example being that of COVID Vaccine and other humanitarian aid like Mission Maitree. He underlined that India acquired credibility as the "first provider" in humanitarian support during disasters as it prioritizes global needs over its own requirements. He emphasized the need for regional and global cooperation in addressing global problems by integrating India's approach - "*all people all regions*"- for contribution in delivering aid. He also cited the importance of technological advancements such as Translator tools (to overcome language barriers) in facilitating rescue operations.

Shri Shombi Sharp highlighted that SFDRR is a key tool for bringing countries together to address the current challenges in disaster management. He stated

that India has shown leadership in promoting DRR through its presidency in G20 and the mid-term review of the SFDRR. He suggested that India can also take leadership role in green transition to ensure climate justice. Further, Shri Sharp stated that international cooperation is crucial for effective DRR including installation & dissemination of early warning systems and suggested that digital leadership should be envisaged in international cooperation activities in least developed countries.

**Shri Ranjit Rae** highlighted the case study of the Nepal Earthquake of 2015 and ‘Operation Maitree’ initiated by Gol. He underlined the military-to-military diplomacy approach adopted by India during the earthquake and emphasized the need for media management as a part of humanitarian aid. He stressed the need to observe cultural and political sensitivity during trans-boundary disaster relief support. He also highlighted the crucial role of NGOs in reaching people efficiently and effectively during disasters.

**Shri Amit Prothi** highlighted the technical assistance and capacity building undertaken in Small Island Developing States (SIDS) and suggested that the technical assistance in the form of building codes drawn from global best practices is necessary to address DRR in SIDs. He also stated that multilateral organizations like CDRI can assist in developing resilient infrastructure in SIDS.

**Shri Krishna S Vatsa** emphasized the Indian assistance at international platform through the bilateral aid, Indian Technical and Economic Cooperation (ITEC) training, Indian Council for Cultural Relation (ICCR) cultural exchange. He advocated for active participation in aid consortiums and technical partnerships with the United Nations and Development Banks and emphasized the need for speed, prompt action and accountability in delivering assistance. He also highlighted the importance of considering three broad strands of policy - bilateral assistance, technical/logistical support to regional groups and multilateral assistance.



**Thematic Session 5 chaired by Director General, Manohar Parrikar Institute for Defence Studies and Analyses (MP-IDSA), Shri Sujan R. Chinoy**

### Key Recommendations of the Thematic Session 5 (Actionable Points):

- Access to Early Warning Systems for all, particularly for the countries located in the global south, is an emerging area of international cooperation. India should work towards instituting and propagating premature cautionary mechanisms in Least Developed Countries (LDCs) to reduce fatalities caused by disasters.
- India should work on enhancing coordination amongst government bodies, international/ multi-lateral agencies and stakeholders across the countries during various phases of the disasters. Apart from providing humanitarian assistance during response phase of the disasters, India should also focus on building capacities of the countries in DRR.
- Humanitarian aid, including food, clothing or any other items that are characterized as taboo in certain cultures, must be provided cautiously and sensitively during disaster response. The cutting-edge technology should be used for better search & rescue operations and to bridge the gaps caused by linguistic differences through translation services.
- Government of India should work upon developing minimum quality standards for humanitarian assistance that shall provide detailed requirements, specifications and guidelines based on the geographical conditions. These standards can be used for ensuring the quality of the equipment; protective clothing and relief materials procured by the different agencies are fit for the disaster response at the international level.

## Thematic Session 6: Disaster Mitigation and Resilience

The Thematic Session-6 was chaired by **Member, NDMA, Shri Krishna S Vatsa** and co-chaired by **Secretary (DM), Uttarakhand, Shri Ranjit Sinha**. **Project Director, National Cyclone Risk Mitigation Project, NDMA, Shri Harsh Gupta**, **Prof. CVR Murthy, IIT Madras**, **Joint Secretary, NDMA, Shri Kunal Satyarthi**, **Dr. Pardeep Kumar, Central Building Research Institute (CBRI)** and **Director General, Indian Meteorological Department (IMD), Shri Mrityunjay Mohapatra** were amongst the panelists.

The Chairperson, **Shri Krishna S Vatsa** stated that mitigation means reducing



risk which mainly includes structural and non-structural measures. He advocated the need to develop a tailor-made approach, as mitigation measures are specific and based on the type of hazards and its geographical condition of the region. He shared that the implementation of mitigation programmes needs coherent efforts of different stakeholders including government agencies, international agencies, civil society organizations and private sector. He stressed the need to develop capacities in this area by conducting training programmes and knowledge exchange.

**Shri Ranjit Sinha** highlighted the capacity gaps of communities in disaster mitigation. He cited an example of the Joshimath land subsidence case and the need to develop norms and guidelines for the communities, local administration and other stakeholders, who should be responsible to take geological, physiographical, temporal and spatial characteristics into consideration for new development in such regions. The speaker reiterated that such development plans should be based on studies for long-term sustainable development.

**Shri Harsh Gupta** made a presentation on the NCRMP phase I & phase II. He illustrated the activities undertaken in both phases and also highlighted the proposed activities for phase III of NCRMP.

**Prof. CVR Murthy** highlighted the challenges of earthquake risk mitigation in the country. He recommended, building environmental, technical & human resources systems and processes and ensuring their implementation for earthquake mitigation.

**Shri Kunal Satyarthi** made a presentation on Forest Fire Management. He recommended, stated that zero fire was not an option in forest fire management. He underlined that the major reason of forest fires was human negligence along with complex socio-economic situation.

**Dr. Pardeep Kumar** made a presentation on landslide risk mitigation. He shared that hill slope management system is an integral part of infrastructural development in difficult terrain. In order to mitigate the risk of landslide, he suggested the use of indigenous science and technology tools/systems available for landslides along with ground-instrumentation and monitoring the development of sustainable and reliable early warning system.

**Shri Mrityunjay Mohapatra** focused on lightning risk mitigation. He informed that the frequency of lightning was maximum over northeast and east India and high over J&K and southwest coast of India and stated that the number of deaths due to lightning was higher in central India.







Thematic Session 6 chaired by Member, NDMA, Shri Krishna Swaroop Vatsa

### Key Recommendations of the Thematic Session 6 (Actionable Points):

- Need to systematically assess and address capacity gaps existing at the local levels in disaster mitigation and management. Hazard-specific programmes such as Earthquake Risk Mitigation and Forest Fire Management may be planned particularly in most vulnerable states and UTs.
- Need to intensify capacity building and awareness programme to help improve compliance with the National Building Code and other standards & building codes for climate adaptive and resilience housing/buildings.
- Focus should be to initiate systemic interventions with insurance companies for developing insurance policies and promotional strategies for climate risk insurance.
- Promote a culture of lightning safety & prevention and preparedness through lightning safety awareness at community levels.
- Develop norms and guidelines for the communities, local administration and other stakeholders towards responsible behaviour and take necessary measures as per local hazard profile while planning any new development/ construction. Consultation with relevant experts of the states/local area would be important in preparing such disaster risk mitigation related guidelines.

## Thematic Session 7: Application of new Technologies and Innovations in DRR

The Thematic Session-7 was chaired by **Scientific Secretary in the Office of the Principal Scientific Advisor to Government of India, Dr. (Mrs.) Parvinder Maini** and co-chaired by **Cluster Head, Social Services Cluster, Tata Sustainability Group, Tata Sons Pvt. Ltd, Shri Shrirang Dhavale, Scientific Secretary, ISRO, Shri Shantanu Bhatawdekar, Dr. Harish Guruprasad Ramaswamy, Assistant Professor, IIT Madras, Commissioner of the Karnataka, State Disaster Management Authority, Government of Karnataka, Dr. Manoj Rajan, Advisor (Operations), NDMA, Dr. Manoj Rajan**, were amongst the panelists.

The **Chairperson, Dr. (Mrs.) Parvinder Maini** underlined the need for holistic approach and amalgamation of science and technology to address DRR issues. She highlighted the application of block chain technology for disaster assessment, supervision, relief management and real time tracking. The speaker explained the importance of Science and Technology and its integration in several DRR programs and suggested a way forward by scaling up relevant construction in line with DRR zoning and impact-based forecasting so as to identify risks and to support decision-making.

**Shri Shrirang Dhavale** stated that the purpose of any technological advancement should be social development. He explained the role of technologies in achieving local resilience and its importance in DRR. He also stressed on the importance of AI and need for adaptation towards new technologies.

**Shri Shantanu Bhatawdekar** discussed the advancement in space technology for early warning by showcasing the use of space technology as vantage point to get data at various scales which can be used in all phases of disasters. The speaker shared examples of the use of technology such as AI and Machine Learning (ML) by ISRO for flood forecasting study and resource management; early warning system for cyclones, prediction of rainfall triggered landslides; forest fire alert system, etc.

**Dr. Harish Guruprasad Ramaswamy** highlighted the importance of integrating AI and Machine Learning (ML) for DRR. He explained that providing more data to AI can help in better assessment and decision making, besides, providing an unbiased inference. He gave a few examples of the application of AI and ML such as use of robots for remote locations, damage predictions, use of remote-controlled AI to convert human inputs to actions and decisions on the data collected by drones.

**Dr. Manoj Rajan** highlighted the application of Remote Sensing and Geographical Information System (GIS) for hazard monitoring. He brought out the user level perspective in the implementation of technology by citing examples of KSDMIS



portal, Varuna Mitra, for various purposes like GIS enabled real-time weather dashboard, data collection at the local village panchayat level, updating data for hazard risk assessment, swift payment system for providing scheme related money and subsidy by Government of Karnataka. He suggested forming a better DRR program using GEDDMP-DSS mechanism. He also emphasized the need of National Geospatial Portal, Portal for relief disbursement to beneficiaries and National Portal of Best Practices etc.

Col. K P Singh highlighted the recent developments of CAP and Emergency Response Support System (ERSS) Projects. He stated that intelligent decision-making support during emergencies to assist disaster managers is the need of the hour. He explained about the phases of CAP, SACHET a new platform for CAP, and its prospects such as its integration with third party and legacy systems using AI to reduce manual intervention in issuing alerts.



Thematic Session 7 chaired by Scientific Secretary in the Office of the Principal Scientific Advisor to Govt of India, Dr. (Mrs.) Parvinder Maini

### Key Recommendations of the Thematic Session 7 (Actionable Points):

- Relief agencies can maximize efficiency benefits by improving technology applications via systemization, standardization and sharing instructions in public.
- Integrate modern technologies for disaster prevention by enabling local government for disaster prevention particularly in more remote or geographically dispersed locations.
- Need to harness emerging technologies like AI and ML with space applications for event-driven sensing, on board information retrieval and dissemination system.

- Creation of Disaster Management Plan (DMP) using geospatial technology to support decision mechanism for DM would be a value addition. Geospatial DMP should be able to auto-generate, update, help analyze and set SOPs as per the local ground situations.
- Use of modern technologies should be promoted in user centric, synchronized and holistic ways in the field of disaster management.
- Importance to be given on the requirement of large datasets applicable to Indian sub-continent for developing effective AI algorithms.
- CAP integration with indigenous digital maps and open-source alert generating agencies like Google Shake Alert can be explored.
- Intelligent decision support system to assist disaster managers is also the need of the time.
- Need to identify and document more success stories like the effectiveness of cyclone early warning system across different communities and nations.

## Thematic Session 8: Capacity Building in DRR

The Thematic Session-8 was chaired by Member, National Disaster Management Authority (NDMA), Shri Rajendra Singh. Vice Chairman, UPSDMA, Lt. Gen R.P. Sahi (Retd.), Joint Secretary, Ministry of Youth Affairs and Sports, Shri Nitesh Mishra, Prof. Santosh Kumar, National Institute of Disaster Management (NIDM) and Director, Tata Institute of Social Sciences (TISS), Prof Shalini Bharat were amongst the panelists.

The Chairperson, Shri Rajendra Singh stated that the goal of capacity building is to enhance the ability of individuals, institutions and systems to manage unexpected challenges and changes in a sustainable manner. He further stated that developing an integrated institutional mechanism for societal preparedness reduces the impact of any disaster. Shri Singh explained that capacity building is a broad concept encompassing three main areas viz. human resources, organization/institutional framework and legal framework. He added that a more comprehensive and proactive approach to DRR in India can be ensured by prioritizing capacity building.

Lt. Gen. R. P Sahi (Retd.) highlighted the importance of capacity building and resilience covered in the PM's 10-point agenda on DRR. He stressed upon the need to take up the capacity building initiatives at the local community level. He cited the impact of flooding in Uttar Pradesh and the measures being

taken to mitigate its impacts (including SOPs for Ghats, boat safety policy, regular training of flood preparedness, etc.). He informed that the locals and volunteers were being trained as Aapda Mitras for quick response and recovery during and post disasters and suggested to invest in local capacity for response as well as for DRR.

**Shri Nitesh Mishra** highlighted that Nehru Yuva Kendra Sangathan (NYKS) is one of the largest grass root level youth organization in the world, which worked on the principles of volunteerism, self-help and community participation. He underlined the role of (NYKS) and National Service Scheme (NSS) and the pivotal role of volunteers in disaster management focusing on training, capacity building, preparedness and response activities. He added that NSS volunteers are also contributing to the response and relief efforts in disasters through their community services and disaster management trainings.

**Prof. Santosh Kumar** mentioned about the need to focus on preventive measures for disasters as well as reducing the impact on infrastructure. He stressed on changing the perspective from death and destruction of infrastructure to developing capacities for risk reduction and resilience. While citing examples of Odisha Cyclone and Kerala Floods, he highlighted the challenges in building capacity to reduce deaths and losses such as initiating capacity building for disaster prevention and the need to involve the community. He underlined the role of educational institutions, NGOs, CSOs, research academies and technical institutions in promoting capacity building and also stated that NIDM leads in research and innovation.

**Prof Shalini Bharat** stressed on the need to invest in local capacities to reduce the disaster risk and disaster mitigation. She informed that Tata Institute of Social Sciences had invested in risk assessment, relief and rehabilitation including psycho-social rehabilitation. She stressed that capacity building needs to be broad-based, multi-disciplinary and interdisciplinary and should involve all sectors from high schools to colleges, universities, communities' level and government departments.



**Thematic Session 8 chaired by Member, NDMA, Shri Rajendra Singh**

## Key Recommendations of the Thematic Session 8 (Actionable Points):

- Need to study the existing system and strengthen institutional mechanism for every aspect of disaster management in view of lessons of recent major disasters.
- Capacity development needs of the country across sectors, states, cities, infrastructure and industry are multifaceted and huge. There is need to strengthen and utilize DRR and Climate Change Adaption related COEs in various institutes along with NIDM, NDRF and other training academies.
- Investing in local capacity should not be only for response but also for holistic approach of DRR.
- DRR must build further on local capabilities and initiatives. Such efforts reduce risks and create opportunities for local development and sustainable livelihoods too.
- Youth can play a pivotal role in improving the disaster management strategy through supporting in awareness generation, mapping the risks and vulnerabilities and developing preparedness mechanisms, etc.
- Youth can act as change makers by sharing information they learned in disaster preparedness programs and helping parents and communities to prepare for disaster situations in future.
- Need to further strengthen the community centric approach in DRR by developing partnership with local and social, environmental and community level, academic, training & research institutes including NIDM, NDMA, SDMA, NDRF, SDRF, universities, ATIs and other educational organizations.
- India Universities and Institutions Network for DRR (IUINDRR) aligned with the Hon'ble Prime Minister's 10 Point Agenda, is an important opportunity. It should be empowered with resources and effective participatory decision-making and planning process. IUINDRR should facilitate creation and support COEs hosted by academia and research institutions on thematic and geographical issues.
- Need to enable broader perspectives of PDNA to cover damage and losses to infrastructure, ecosystems and people's other resources and to draw strategies for developing risk reduction capacities.

## Plenary Session 3:

# Risk Governance: Deepening Disaster Risk Management

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The Plenary Session-3 was chaired by Hon'ble Minister of State for Home Affairs, Shri Nityanand Rai and co-chaired by Secretary, Ministry of Panchayati Raj, Shri Sunil Kumar. Member and HoD, NDMA, Shri Kamal Kishore, Director General, NDRF, Shri Atul Karwal and Chief Secretary of Odisha, Shri Pradeep Kumar Jena, Mrs. K. Pooshanavathi and Mrs. P. Saraswathi from Samiyar Pettai of Cuddalore District, Tamil Nadu were amongst the panelists.

The Chairperson, Shri Nityanand Rai acknowledged the challenges faced by the stakeholders (including Government, NGOs/CSOs) during disasters and highlighted the need for local-level involvement in risk governance and disaster risk management. He stated that the combination of local resilience with future technology would make India 'Disaster Resilient'. He emphasized the significance of PM's Ten Point Agenda for DRR, including the importance of leadership, especially for women and investing in technology and risk mapping to enhance disaster resilience. He also added that promoting disaster risk management in Schools and Universities can aid in establishing last mile connectivity to spread awareness and interest in disaster risk management among the local community.

Shri Sunil Kumar expressed the need for involvement of local representatives in the disaster risk reduction activities. He stressed on the need for involving the local representatives as stakeholders and enhancing their capacities in all phases of disaster risk management. In this connection, he cited the example of public participation in drought proofing undertaken by Hiware Bazar Gram Panchayat of Ahmednagar district of Maharashtra.

### Launch of National Database for Emergency Management version 4.1

National Database for Emergency Management version 4.1 was launched by Shri Nityanand Rai, Hon'ble Minister of State for Home Affairs. The new version was designed and developed by ISRO and has introduced features like automated forest fire alert system, lightning occurrence information, fully automated spatial flood early warning systems for Tapi and Godavari rivers, district wise newscast warnings from IMD, multilingual regional support, 3D visualization and exclusive portal for NDRF and other concerned stakeholders.





**National Database for Emergency Management version 4.1 launched by Hon'ble Minister of State for Home Affairs, Shri Nityanand Rai**

**Shri Kamal Kishore**, summarized the entire discussion by highlighting the following key points:

1. Need to bring together traditional wisdom and modern technologies.
2. Need to strengthen DDMA's and local authorities along with the National and State Authorities.
3. Shift the focus from cyclone shelters to make all the shelters fully safe and disaster resilient.
4. Critical infrastructure particularly the urban infrastructure should be made more resilient to withstand disasters.
5. Insurance should be made an integral part of the disaster risk governance.
6. Technology integrated system at all levels is the need of the hour. Emergency Operation Centres (EOC) at all levels should be strengthened and disaster information systems like the National Database for Emergency Management (NDEM) should be up to date and function seamlessly.
7. Need to leverage women's participation in DRR and emergency response at all levels.



**Shri Atul Karwal** shared his thoughts on national and state level response system and on Vision 2047. He emphasized the challenges related to disaster response, highlighting that factors like climate change, population growth and emerging technologies can have a dual impact - both positive and negative - on disaster risk management in the near future. He underlined that the thrust areas for the future of community resilience were awareness and access to information, location specific forecast, training, crowd sourcing, crowd sensing and resource management and coordination. He also emphasized that an integrated response system for all phases of disasters-prevention, preparedness, response and recovery was much needed in the changing disaster scenario. He suggested that the gap areas in local response, e.g. low community resilience, inadequate resources and capacities at the local level need to be addressed. Shri Karwal added that NDRF was training forty lakhs NSS volunteers as first responders through E-learning.

**Shri Pradeep Kumar Jena** shared the experiences of Indian coastal state of Odisha in disaster risk management. He highlighted that collaborative efforts of the government and communities enabled Odisha to achieve zero casualty during cyclones. He emphasized the paradigm shift in Odisha's disaster management approach, noting the dramatic reduction in cyclone-related casualties from 10,000 in the 1990 cyclone to zero in recent years. The robust institutional framework supported by coordination and collaboration across four key pillars-institutional strengthening, planning, capacity development and partnerships - had enabled Odisha to achieve resilience. He also highlighted the interventions taken at the local gram panchayat level for disaster risk reduction by training the village people. Shri Jena also noted the initiative of developing a "Disaster warrior" in every household to enhance individual capacities.

**Mrs. K. Pooshanavathi and Mrs. P. Saraswathi** from Samiyar Pettai of Cuddalore District, Tamil Nadu shared their grassroot level experiences and perspectives of disaster management. Mrs. Pooshanavathi and Mrs. Saraswathi recalled their experiences from the 2004 tsunami. They shared that although only 22 women were trained in the village in October 2004 on rescue, first aid and basic lifesaving skills prior to the tsunami, yet this helped to save lives of villagers during the early morning of 26th December 2004. They underlined that the trainings provided at the grass root level reduce the impacts of disaster to the maximum extent. They also noted that providing similar trainings to other villages, could have saved many lives.

### Key Recommendations of the Plenary Session 3 (Actionable Points):

- Promoting investment in risk mapping and leveraging advanced technologies to strengthen DRR and resilience should be prioritized through research and training initiatives.
- Learnings from the past experiences should be documented and utilized in futuristic planning in DRR.
- Strengthening local institutions and disaster management authorities is essential for building a disaster-resilient nation, by integrating localized DRR and climate action efforts.
- Capacity building tools and efforts should promote a holistic understanding by integrating traditional wisdom with modern technology.
- Promote demonstrable models of planning and execution that adopt a sectoral approach to mainstreaming DRR through training and policy research.
- Local participation, with a focus on promoting women leadership in DRR should be encouraged, across diverse geographical and sectoral contexts.
- Advanced technologies like AI and Machine Learning (ML) should be leveraged through action-based research for location specific forecast, hazard identification and risk assessment.
- Capacity enhancement should involve training and action-based research adopting diverse mass awareness methods like e-contents, simulation modeling games, Augmented Reality (AR), Virtual Reality (VR), Machine Learning (ML) and the integration of DRR into education curricula.
- Crowd sourcing and crowd sensing can be used as critical tools for situational awareness as a part of strengthening community resilience.
- Need to strengthen cooperation in capacity building and sharing case studies to improving trans-boundary disaster response, involving multilateral, bilateral and inter-governmental agencies, alongwith other avenues of mutual cooperation.
- Need to assess the training needs and strategies for SDRF and strengthen them through relevant and multidisciplinary training programmes.

## Plenary Session 4: Valedictory

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The **Principal Secretary to Hon'ble Prime Minister, Dr. P. K. Mishra** addressed the valedictory session and outlined the future approach to DRR in the country. On this occasion, **Hon'ble Minister of State for Home Affairs, Shri Nityanand Rai, Union Home Secretary, Shri Ajay Kumar Bhalla**, senior officers from MHA, NDMA, NDRF, NIDM and other stakeholders were also present.

**Additional Secretary (Disaster Management), MHA, Shri Hitesh Kumar S. Makwana** welcomed all dignitaries in the valedictory session and emphasized on Prime Minister's vision to develop the best DRR models to provide global assistance. Shri Makwana, assured that the pre-events undertaken and recommendations received during the NPDRR 2023 would prove to be fruitful in achieving SFDRR targets.

**Member & Head of Department NDMA, Shri Kamal Kishore** emphasized the PM's vision of recognizing the risk and reforming the system, while acknowledging the importance of traditional values and integrating advanced technologies for disaster mitigation and management. He presented a comprehensive report of all the sessions held during NPDRR 2023 and shared the key highlights in three parts viz. *Ministerial Session* which highlighted the issues of States/UTs; *Plenary Session* which highlighted the issues of development sectors; and *Thematic Sessions* that highlighted specific domains of disaster management.

Summarizing the Ministerial Session, Shri Kamal Kishore highlighted the following points:

- i. Coastal regions should prioritize making disaster-resilient buildings.
- ii. River erosion, thunderstorm, lightning and heat waves are becoming serious threats and should be notified at the national level.
- iii. North-Eastern states with lower capacities should develop regional development centres to serve multiple states.
- iv. Special provision should be made for hilly states to address their issues.
- v. Innovative ideas are needed to enhance disaster resilience in economically disadvantaged small islands.

Further, summarizing the plenary sessions on mainstreaming DRR in development sectors, Shri Kamal Kishore highlighted various related issues:

- Standards need to be developed for disaster resilient development including construction of new infrastructures and retrofitting of existing infrastructures within 60 kms of coastal region.
- A robust end-to-end early warning system is required for the hydro power plants.
- Highways facing challenges of landslides and floods, including issues of drainage channel, need to be addressed on priority.
- New technologies are needed for slope cutting to reduce landslide triggers.
- DRR principles should be incorporated under the Pradhan Mantri Awas Yojana (PMAY) Scheme.
- Insurance should be made an integral governance issue.
- There is a need to invest in and institutionalize women leadership at local level.
- Specialized Programs for addressing lightning safety need to be developed.

Summarizing the thematic sessions, Shri Kamal Kishore pointed out:

- Evolution of humanitarian assistance provided by India should distinguish itself from other forms of assistance by focusing on initiatives like developing early warning system for least developed countries.
- There is a need to develop partnerships across institutions like CDRI and ISA.
- Urban risk issues should be linked with smart cities concept, utilizing technology to support DRR needs and integrating climate change adaptation to build local resilience.
- There is a need for capacity building initiatives for empowering local communities and learning from local level schemes such as Aapda Mitra Schemes.

**Launch of CAP Portal and APP (SACHET):** Short film on CAP was shown to popularize the new phase of CAP Portal known as SACHET (<https://platform.sachetdashboard.ndma.gov.in/>). Dr. P. K. Mishra, Principal Secretary to the Hon'ble Prime Minister launched the 'Sachet' portal. The portal is available in different languages with ready to use Radio, TV, Indian Railways, Coastal



EW System and Cell Broadcast system to send alerts, which will further help strengthening last mile connectivity.



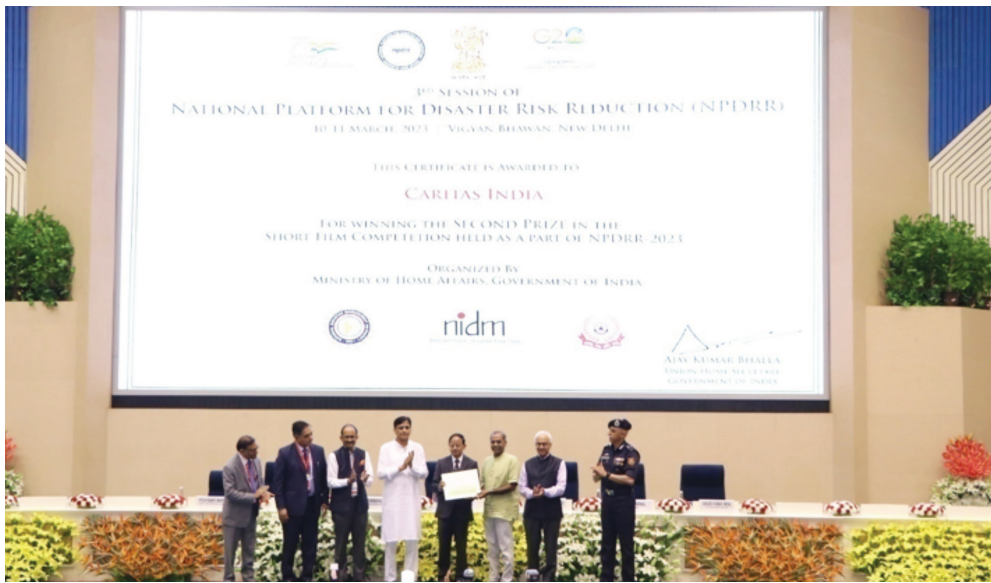
### PS to Hon'ble PM, Dr. P. K. Mishra launched SACHET

Dr. P. K. Mishra, along with the other panelists of the valedictory session, presented awards to the winners of the short film competition, which focused on various themes related to different aspects of disaster management. The first prize was awarded to “Saksham” developed by Sh. Ajinkya P Patil; the second prize was awarded to “Early Warning System” by Caritas India and the third prize was given to “Earthquake Preparedness” developed by Sh. Narendra Joshi, TOC Combined Pvt. Ltd.



### First prize awarded by PS to Hon'ble PM, Dr. P. K. Mishra to Shri Ajinkya P Patil for short film “Saksham”





Second prize awarded by PS to Hon'ble PM, Dr. P. K. Mishra to Caritas India for short film "Early Warning System"



Third prize awarded by PS to Hon'ble PM, Dr. P. K. Mishra to Shri Narendra Joshi for short film "Earthquake Preparedness"



Address by PS to Hon'ble PM,  
Dr. P. K. Mishra during  
Valedictory session

Principal Secretary to the Hon'ble Prime Minister, Dr. P. K. Mishra expressed pleasure on the discussions held all over the country during the 19 Pre-Events of NPDRR and in NPDRR itself, on various issues of DRR. He highlighted that disaster risk reduction and management is transforming into a “Jan Andolan” as envisaged by the Hon'ble Prime Minister. He underlined the importance of the session's theme, “Building Local Resilience in a Changing Climate”, as it addressed the need for localizing disaster risk management at a time when disaster risks are increasing along with the emergence of new patterns of risks. He suggested that the purpose of DRR efforts should be to support the most vulnerable communities and protect their lives and livelihoods. Reflecting on the past disasters like Odisha

Cyclone, 1999 and the Gujarat Earthquake, 2001, Dr Mishra pointed out that the approach to disaster response has evolved from relying on international organizations for assistance to a more globally connected approach during times of crisis. He also referred to the new working group constituted in G20 to address DRR at the international level.

Dr. Mishra highlighted the Hon'ble PM's 10-point agenda on DRR and emphasized the importance of building local capacity, especially by encouraging women's leadership. He noted that this approach will significantly contribute to the successful implementation of the PM's 10-point agenda, as well as the commitments under Sendai Framework (SFDRR). He also suggested two overarching themes for stakeholders to pursue:

- Professionalizing the disaster risk management setup at the state, district and sub district level by establishing state of the art facilities and equipping them with skilled manpower.
- Developing programmes and interventions that are responsive to the needs of the people, ensuring that comprehensive programs and policies work in tandem.

Dr. Mishra emphasized that SDMAs and DDMA's should develop hazard specific programs, take timely capacity building initiatives and set up resource centres to train district level and sub district level functionaries. Underlining that the world is far off from achieving the Sendai Framework targets, he emphasized the need to rededicate ourselves to create a more effective and responsive system of disaster risk management, aiming for a safer country, and ultimately, a safer world. He highlighted the necessity of implementing the NDMA guidelines at the state and district level. Dr. Mishra also stressed that disaster risk management and climate change adaptation must be integrated into specific programs. He added that there is a need to review all government schemes in the context of DRR and integrate those with the Mitigation Fund.

Shri Sanjeev Kumar Jindal, Joint Secretary (Disaster Management), MHA expressed his gratitude to all the dignitaries who attended the 3rd session of NPDRR, 2023. He highlighted that NPDRR 2023's objectives and aims were kept in line with the PM's 10 Point Agenda for DRR and thus the recommendations collated from different sessions will help fast-track the efforts in this direction. He also thanked the organizers for showcasing a memorable exhibition at NPDRR, 2023.



Hon'ble MoS, Shri Nityanand Rai and PS to Hon'ble PM, Dr. P. K. Mishra with senior officials of MHA, NDMA, NIDM & NDRF during the valedictory session



## Key Recommendations of the Plenary Session 4 (Actionable Points):

- Need for professionalizing the disaster risk management setup and develop state of the art facilities with skilled manpower at the state/ district and sub district level, including an effective academia-government-industry interface.
- Need to develop more specific programs and interventions to focus on the needs of the local communities at ground level.
- DRR and CCA must converge in all future programs. There is a need to study the government schemes more closely from the perspective of DRR for midterm improvements as well.
- NDMA, NIDM and NDRF need to work in a coordinated manner to support, enable and empower the states and districts level functionaries.
- Policy research initiatives need to be instituted to study the implementation of NDMA and SDMA guidelines. Analyzing strengths, challenges, opportunities and scope for revision in the changing contexts would be a desirable exercise.
- Greater exchange of knowledge between various countries is required to promote the resilience of critical infrastructure. The challenge lies in finding effective ways to implement resilience on the ground and this must not be overlooked in the future developmental processes.
- Key recommendations from the NPDRR pre-events and all sessions of the main event should be considered appropriately by all the stakeholders in their future course of action.

## Recommendations of NPDRR 3rd Session aligned with the Hon'ble Prime Minister's 10-Point Agenda on DRR are collated and summarized below:

PM's 10-Point Agenda item	Action Points	Key Responsibilities (National/State)
<b>Agenda-1:</b> All development sectors must imbibe the principles of disaster risk management.	<ul style="list-style-type: none"> <li>• Identify, develop and promote models of safe housing/buildings across key sectors of development. Design strategies to integrate these models into development planning up to city and village levels.</li> <li>• Conduct Capacity Gap Assessment and Training Needs Assessment (TNA) for the key development sectors at</li> </ul>	<ul style="list-style-type: none"> <li>• MoHUA, NDMA, NITI Aayog, States</li> <li>• NIDM, MoEFCC, DST SDMAs &amp; other sectoral</li> </ul>



	<p>National and State/UT levels to plan future trainings in DRR &amp; CCA realms.</p> <ul style="list-style-type: none"> <li>• Developing specialized human resources and expertise in DRR for on-site and off-site risk management, emergency response &amp; preparedness in industrial and chemical sectors with focus in high risk regions.</li> <li>• Key development sectors should review their expansion strategy in view of their respective disaster management plans to foster resilient and sustainable functioning.</li> <li>• Sectoral professional or educational training and research institutions should integrate DRR related contents into their different curricula and other domain courses.</li> </ul>	<p>Central Ministries.</p> <ul style="list-style-type: none"> <li>• MoLE, MoC&amp;F, MoEFCC, States with MAH Units</li> <li>• MHA, NDMA, All key Sectoral Central Ministries, NITI Aayog</li> <li>• NIDM, SDMAs, Sectoral Ministries - Central, State</li> </ul>
<p><b>Agenda-2:</b> Risk coverage must include all, starting from poor households to SMEs to multi-national corporations to nation states.</p>	<ul style="list-style-type: none"> <li>• Promote risk insurance to be integral component of Urban, Rural and Industrial DRR strategies, covering household/unit levels.</li> <li>• Central sectoral and State/UT's DM Plans should include promotion of insurance, supported by suitable research studies and pilots, as a strategy for risk coverage and management.</li> <li>• Promote public awareness on role of insurance and assess, cover and transfer risks related to disasters.</li> </ul>	<ul style="list-style-type: none"> <li>• MHA, IRDAI, NDMA, MoHUA, MoRD, MoLE, MoC&amp;F</li> <li>• MHA, IRDAI, NDMA, MoHUA, MoRD, MoLE, MoC&amp;F</li> <li>• IRDAI, SDMA / State DM Deptts, Sectoral Deptts, NGOs/ CBOs/Private Sector</li> </ul>

	<ul style="list-style-type: none"> <li>Promote risk coverage for people and industrial assets including for MSMEs, through research studies and pilots.</li> <li>Promote capacity building of professionals/stakeholders in relevant departments in risk assessments, generation and storage of risk data &amp; framework for its access.</li> </ul>	<ul style="list-style-type: none"> <li>IRDAI, DoFS MSME, MoLE, NIDM, IRDAI, NGOs/CBOs/ Private Sector</li> <li>NIDM, IRDAI, Sectoral Deptts</li> </ul>
<p><b>Agenda-3:</b> Women's leadership and greater involvement should be central to disaster risk management.</p>	<ul style="list-style-type: none"> <li>Women empowerment programmes especially focusing on economic or livelihood security to be integrated in DRR strategies and vice-versa.</li> <li>Encourage women members for leadership roles in community programmes especially in DRR related planning, capacity building and actions.</li> <li>Encourage networking of women led and women focused CSOs with Government organizations and related schemes for their role in DRR and for mutual associations</li> </ul>	<ul style="list-style-type: none"> <li>MoWCD, MoRD, NDMA, NITI Aayog</li> <li>NDMA, SDMAs, State DM Departments</li> <li>NDMA, SDMAs, MoWCD, MoSJE, Women welfare agencies</li> </ul>
<p><b>Agenda-4:</b> Invest in risk mapping globally to improve lobal understanding of nature and disaster risks.</p>	<ul style="list-style-type: none"> <li>Encourage investments in knowledge integration and synthesis with science-research-policy-practice interface.</li> <li>Promotion of new and innovative models for risk mapping, covering dynamic and changing nature of risks, in development agenda, land-use/landscape and anthropogenic activities.</li> </ul>	<ul style="list-style-type: none"> <li>DST, NRF, NDMA, MoES, CoEs, MHA</li> <li>MoEFCC, NITI Aayog, MoE, NIDM, Department of Land Resources</li> </ul>



	<ul style="list-style-type: none"> <li>• Integration of risk assessment and risk mapping approaches/methods into professional/higher education curriculum as learning/project units.</li> <li>• Apply integrated models to study and plan for climatic extreme risks, vulnerabilities and disasters vis a vis adaptation and resilience at different levels and document learning from pilots.</li> </ul>	<ul style="list-style-type: none"> <li>• NIDM, SDMAs, CoEs</li> <li>• NDMA, NIDM, DST, NRF, MoES, MoEFCC,</li> </ul>
<p><b>Agenda-5:</b> Leverage technology to enhance the efficiency of disaster risk management efforts.</p>	<ul style="list-style-type: none"> <li>• Adoption and promotion of emerging technologies including digital-twin system and mapping of risk-prone areas must be imbibed.</li> <li>• Promotion of AI and ML and other means of risk modeling/projections to enhance accuracy in disaster preparedness and designing risk reduction measures.</li> <li>• Integration and promotion of NBS and eco-technologies, traditional/indigenous and local innovations.</li> <li>• Strengthening of communication system for real time information and monitoring.</li> <li>• Use of drones and personal gadgets in disaster related surveys, mapping, and management of disasters.</li> <li>• To carry out capacity and training needs assessment and develop integrated strategies of training tools for S&amp;T and innovations in DRR.</li> </ul>	<ul style="list-style-type: none"> <li>• MoHUA, NDMA, NIDM &amp; States</li> <li>• MeilY, DST, NDMA, DST, CSIR</li> <li>• DST, NDMA, NIDM, MoEFCC, CoEs, SDMAs</li> <li>• MHA, Ministry of Communications, NDMA, IMD, SDMAs</li> <li>• MHA, NDMA, NIDM, CoEs, SDMAs, DSTNIDM, NDMA, DST, CoEs, SDMAs.</li> </ul>
<p><b>Agenda-6:</b> Develop a network of universities to work on disaster-related issues.</p>	<ul style="list-style-type: none"> <li>• Develop and promote professional competencies at the level of Universities and trained human resources with detailed comprehension of knowledge and tools in DRR, CCA and related environmental-social sustainability issues.</li> </ul>	<ul style="list-style-type: none"> <li>• NDMA, NIDM, MoEFCC, DST, CoEs, SDMAs</li> </ul>

	<ul style="list-style-type: none"> <li>• Support establishment of CoEs on DRR related themes in Universities and IITs/IIMs etc. to undertake research and professional/ educational programmes.</li> <li>• Promote linkages of research in S&amp;T, social and other domains including inter/trans disciplinary research with policy planning, capacity building and knowledge integration interventions through suitable academic institutions/CoEs and other research programmes.</li> <li>• Encourage educational and research institutions to demonstrate disaster preparedness via their DM plans and resilience interventions.</li> </ul>	<ul style="list-style-type: none"> <li>• MoE, NDMA, DST, MoES, MoEFCC, NITI Aayog, AIU, NIDM</li> <li>• NDMA, NIDM, DST, CoEs, SDMAs, DoPT</li> <li>• NDMA, MoE SDMAs, NIDM, CoEs NDRF</li> </ul>
<p><b>Agenda-7:</b> Utilize the opportunities provided by social media and mobile technologies for disaster risk reduction.</p>	<ul style="list-style-type: none"> <li>• Enabling local governments and agencies/stakeholders in cities, villages/panchayats and industrial areas, special zones towards disaster related awareness for effective identification and communication of risk and resource mapping to deal with emergencies.</li> </ul>	<ul style="list-style-type: none"> <li>• MHA, MoI&amp;B, NRF, NDMA, NITI Aayog, MoEFCC, MoLE, MoC&amp;F, SDMAs</li> </ul>
<p><b>Agenda-8:</b> Build on local capacity and initiative to enhance disaster risk reduction.</p>	<ul style="list-style-type: none"> <li>• SDMPs, SAPCCs, DDMPs and DMPs at city and village/panchayat levels to include approaches of NBS, ecosystem centric methods, local and innovative solutions, participatory approaches and local/native resource mapping and utilization.</li> <li>• Build capacities of local stakeholder groups such as youth, students, teachers, CSOs, SHGs, water user associations, farmer groups, merchant/industry associations, etc. regarding indigenous and approaches of disaster risk mapping,</li> </ul>	<ul style="list-style-type: none"> <li>• NDMA, MoRD, MoHUA, NITI Aayog, MoEFCC, DST, CoEs, SDMAs</li> <li>• NDMA, NIDM, MoYAS, MoLE, MoRD, MoHUA, SDMAs</li> </ul>

	<p>mitigation and resilience building strategies.</p> <ul style="list-style-type: none"> <li>• Work towards augmenting the availability of professional expertise in DRM and DRR related domains up to District/Taluka levels.</li> <li>• Promote a network of ex-servicemen and volunteers like Aapda Mitra, Civil Defence and other independent social groups to support DRR and disaster response at local levels</li> </ul>	<ul style="list-style-type: none"> <li>• MHA, NDMA, SDMAs, NIDM, CoEs, MoE</li> <li>• MHA, NDMA, NIDM, NDRF, SDMAs</li> </ul>
<p><b>Agenda-9:</b> Make use of every opportunity to learn from disasters and, to achieve that, there must be studies on the lessons after every disaster.</p>	<ul style="list-style-type: none"> <li>• Encourage formulation of multi-stakeholder teams to document all major and significant disaster events for learnings towards better coordination, multi-stakeholder involvement and inputs.</li> <li>• Encourage timely documentation of learnings from the disaster events with clearly set objectives.</li> <li>• Document specific case studies for capacity building and value addition in policy processes.</li> </ul>	<ul style="list-style-type: none"> <li>• MHA, NIDM, NDMA, DST, MoE, NITI Aayog, CoEs and Sectoral Ministries, SDMAs</li> <li>• MHA, NIDM, NDMA, DST, CoEs, SDMAs</li> <li>• NDMA, DoPT, NIDM, Concerned Ministries, CoEs</li> </ul>
<p><b>Agenda-10:</b> Bring about greater cohesion in inter-national response to disasters.</p>	<ul style="list-style-type: none"> <li>• Promote platforms and mechanisms for knowledge exchange, sharing case studies, practices and lessons learnt, expertise, resources and cooperation amongst CoEs of DRR &amp; CCA issues</li> <li>• Promote cooperation among the countries to join hands in capacity building, faculty exchange, training cooperation, etc. by joint programmes of institutions</li> <li>• Developing partnership across the member countries of institutions like CDRI and ISA.</li> </ul>	<ul style="list-style-type: none"> <li>• MEA, MHA, NDMA, MoE, DoPT, DST, NRF, MoES, MoJS, MoEFCC, NITI Aayog, NIDM, CoEs</li> <li>• MEA, MHA, NDMA, MoE, DoPT, DST, NRF, MoES, MoJS, MoEFCC, NITI Aayog, NIDM, CoEs</li> <li>• MEA, MHA, NDMA, CDRI, ISA, CoEs</li> </ul>

## NPDRR Exhibition

On the occasion of the 3rd session of NPDRR, an exhibition was organized at Vigyan Bhawan. The exhibition was inaugurated by **Hon'ble Prime Minister, Shri Narendra Modi**, and showcased innovative ideas, initiatives and unique tools in the field of DRR. More than 100 booths were set up by various government and private organizations to present cutting-edge solutions relating to disaster risk management.

The exhibition was organized in a collaborative manner, involving the participation of government entities, PSUs, corporations, NGOs, academic institutions and representatives from various States and UTs. The NDRF served as the lead agency coordinating the exhibition, while FICCI acted as the industry partner for the event.

The exhibition was opened for four days to school and college students/cadets. For two additional days, the general public had the opportunity to gain insights on disaster risk management and relief equipment used during rescue operations. Visitors also got the opportunity to interact with various exhibitors about their products and services. The exhibition proved to be an excellent platform for raising awareness among stakeholders, including the public, about various initiatives in the field of DRR.

Few glimpses of the 3rd NPDRR exhibition held in the premises of Vigyan Bhawan, New Delhi:



**Hon'ble Prime Minister, Shri Narendra Modi, in presence of Hon'ble Union Home Minister & Minister of Cooperation, Shri Amit Shah inaugurating the exhibition of the 3rd Session of NPDRR**



NDRF showcasing advanced technologies used at the time of emergency in natural calamity prone areas



Different stalls exhibiting multiple tools & technologies for addressing and managing situations during disasters.







## Pre-events of 3rd Session of NPDRR

A total of 19 curtain raiser events/pre-events were organized on different themes leading to main NPDRR event. These pre-events were mainly organized by NIDM (Lead Agency in 9 pre-events) and NDMA (Lead Agency in 4 pre-events) in collaboration with NDRF, LBSNAA, World Bank, UNRC, ISRO, SDMAs, UNDP, UNICEF, concerned Ministries and Departments, Academic Institutions, lead NGOs/ INGOs and other allied entities.

All these events were aligned with the Sendai Framework for SFDRR priorities and the main theme of the NPDRR, i.e., “Building Local Resilience in a Changing Climate”. These 19 pre-events were organized in 12 States in a span of 50 days, before the main NPDRR event.

The outcomes of all 19 pre-events contributed to the overall success of the main NPDRR event. These events saw an active participation of relevant stakeholders including government representatives NGOs and local communities, each addressing their respective topics. The discussions captured key issues, challenges and disaster risk reduction measures relevant to each group’s concerns.

Few glimpses of pre-events attended by senior officials of MHA, NDMA, NIDM & NDRF across different parts of India:



## List of Pre-events of 3rd Session of NPDRR

S. No.	Title of Pre-event	Lead Agency	Supporting Agency	Date and Place
1.	Resilience and Sustainability Summit: Vision 2047	NIDM	DST, MoHFW, MoRD, NITI Aayog, UNDP, GIZ, M/o Agriculture & Farmer's Welfare	17-19 January 2023 Delhi
2.	District Disaster Management Plan & Incident Response System	LBSNAA	NDMA	06-08 February 2023 Mussoorie, Uttarakhand
3.	Heat Waves-2023 "Early Planning and Effective Action: Saving lives"	NDMA	IIT Mumbai, PHFI, VNIT Nagpur, IMD, Maharashtra SDMA	13-14 February 2023 Mumbai, Maharashtra
4.	Workshop on Policy for Mitigation Measures and Rehab. for People Displaced by Erosion	NDMA	Kerala SDMA	17 February 2023 Thiruvananthapuram, Kerala
5.	Technological Applications in Disaster Response	NDRF	DRDO, DGRE, DST, D/o Space	17 February 2023 Delhi
6.	Flood Preparedness and Response	Assam SDMA	Sphere India, RVC, R K Mission, CWC, M/o Jal Shakti, NIDM, IWP	18-19 February 2023 Guwahati, Assam
7.	Community Based Disaster Risk Reduction	NIDM	Aga Khan Foundation, SEEDS, MoPR, MoRD, UPSDMA	20 February 2023 Lucknow, U.P.
8.	Risk Financing & Insurance for Disaster Risk Mitigation & Building Climate Risk Resilience	NIDM	NIA, III, IRDA, DoFS, Maharashtra SDMA	20-21 February 2023 Mumbai, Maharashtra
9.	National Consultation on Drought Mitigation Planning	NDMA	National Rainfed Area Authority, M/o Agriculture & Farmer's Welfare	22 February 2023 New Delhi

S. No.	Title of Pre-event	Lead Agency	Supporting Agency	Date and Place
10.	Disaster Risk Reduction and Resilience in Coastal Regions	NCRMP (NDMA)	World Bank, OSDMA, APSDMA, SMRC Odisha	23-24 February 2023 Bhubaneswar, Odisha
11.	Women's Participation and Leadership in Disaster Risk Reduction	UNRC	TISS, UN Women, NIDM, UNDP, UNICEF, SEWA, MoWCD	24 February 2023 New Delhi
12.	Disaster Resilience in Mountains: Need for Capacity Building	NIDM	Uttarakhand SDMA Dr. R. S. Tolia Uttarakhand Academy of Admin.	24 February 2023 Nainital, Uttarakhand
13.	Disaster Research and Knowledge Management	NIDM	Central University, Tamil Nadu, TNSDMA, MoHRD, DST, MoES	25 February 2023 Chennai, Tamil Nadu
14.	National Meet on Disaster Risk Management Trends & Technologies	ISRO	NRSC Hyderabad, NDMA	27-28 February, 2023 Hyderabad, Telangana
15.	Livelihoods in Post Disaster Recovery	NIDM	MGSIPA	28 February 2023 Chandigarh
16.	Strengthening Social Protection System for Climate and Disaster Risk Management	NIDM	UNICEF	03 March 2023 Delhi
17.	Urban Risk Governance and Capacity Building in DRR	NIDM	Sphere India	04 March 2023 Delhi
18.	Risk-Informed Disaster Recovery and Reconstruction	World Bank	NDMA, VHAI, Kerala SDMA, MoRTH, M/o Power	06 March 2023 Delhi
19.	Building Community Resilience in Urban Flooding	NIDM	Karnataka SDMA	06 March 2023 Bengaluru



## Way Forward: Action Points and Responsibilities

S.No.	Action Point	Responsibilities/ Roles	
	<b>Items-based Actions on the recommendations of 3<sup>rd</sup> meeting of NPDRR</b>	<b>Central Government</b>	<b>State Government</b>
Policy Guidelines and Strategies			
1.	To coordinate and support policy research and action research to make independent reviews and assessments of gaps and opportunities with changing risks including climatic, technological and developmental changes.	NIDM, NDMA DST, NRF, Sectoral & Nodal Ministries, CoEs	SDMAs, State Planning Board/ Deptts., Sectoral Departments
2.	To promote policy studies to recognize key challenges in DRR and resilience. This includes assessment of potential hazards and risks, as well as identifying necessary improvements in the system needed at different levels.	NIDM, NDMA, MHA, Nodal Ministries for different hazards, CoEs	SDMAs, Planning Board/ Deptts., Sectoral Deptts.
3.	To undertake review of existing policies and regulations related to flood zoning, dam safety, building codes, fire systems, etc. and inclusion of emerging DRR related issues.	MHA, NDMA, Sectoral and Nodal Ministries, CWC, MoHUA, CoEs	SDMAs, Planning Deptts., Sectoral Deptts., Climate changeCells



4.	To develop strategies for DRR in hilly states, especially for North-Eastern States and island territories. These strategies should incorporate past lessons and futuristic projections.	MHA, NDMA, Ministry of DoNER, NE Council, NIDM, MoEFCC, MoES,	SDMAs, Planning Deptts., Sectoral Deptts. Climate change cells
5	To develop transboundary cooperation in capacity development and knowledge exchange on disaster response and resilience building activities by involving various regional and intergovernmental organizations.	MEA, MHA, NDMA, NIDM, CoEs, MoJS, MoRTH, MoE, CDRI, Nodal Ministries	SDMAs (of border states/UTs)
6	To undertake a structured and comprehensive policy analysis and make improvements in the search & rescue strategies including specialized human resources, equipment and coordinated system for governance.	MHA, NDMA, NDRF	SDMAs, ATIs / SDMIs
7	To develop policy statements on emerging ideas and innovations in DRR for addressing Loss & Damages.	MHA, NDMA, NIDM, MoEFCC, NITI Aayog	SDMAs, ATIs / SDMIs

8	To understand various aspects of DRR and climate risk insurance through a consultative process—including scoping and policies.	IRDAI, MHA, NDMA, NIDM, MoF, CoEs	SDMAs, State Climate Cells
9	To review major schemes of government from DRR perspective and to address the gaps accordingly.	MHA, NDMA, NITI Aayog, Sectoral Central Ministries	SDMAs, Sectoral Deptts.
10	To develop DRR cooperation with other countries that extends beyond the disaster response phase. This includes more engagements in training, research, faculty exchange programmes, etc.	MEA, MHA, NDMA, NDRF, NIDM, MoE, CoEs, DoPT	SDMAs, ATIs, SIDMS
11	To promote platforms and mechanisms for knowledge exchange including sharing case studies, practices, lessons learnt, expertise, resources and cooperation amongst CoEs in DRR, adaptation and resilience domains.	NDMA, DST, MOE, NIDM, CoEs, MOEFCC, Nodal Ministries	SDMA, ATIs, SIDMs



## Research & Knowledge Integration

12	To make highways and road infrastructure resilient and sustainable through improved design and material standards and practices.	MoRTH, NHAI, NDMA, BIS, NIDM, CoEs	SDMA, SIDMs
13	To blend DRR with traditional wisdom and advance S&T, such as AI, ML, IoT, 5G etc., to further enhance location specific forecast, hazard identification and risk assessment for remote/geographically dispersed locations.	NDMA, Meity, NITI Aayog, DST, CoEs, NIDM	SDMAs, SIDMs
14	To organize joint training programmes with regional countries and promote regional and south-south cooperation in DRR through joint capacity building programmes.	MEA & NIDM	--
15	To develop a compendium of best practices in different aspects of DRR, for supporting policy insights through capacity building, education and research programmes.	DST, NRF, NDMA, NIDM, Sectoral Ministries, NITI Aayog, CoEs	SDMAs, SIDMs



16	To promote and undertake strategic research, including capacity gaps and needs assessment, training needs and impact assessment, etc. to improve capacity building programmes at all levels, across sectors and geographies.	NDMA & NIDM	SDMA, SIDMs, ATIs
17	To ensure integration of DRR related contents into different curricula and other domain courses in sectoral professional/educational, training and research institutions.	NIDM, MoE, Sectoral Ministries	SDMA, SIDMs
18	To support organizational capacity for guiding R&D needs and provide research framework under a suitable academic institute affiliated to both Central Government and relevant Ministry.	NIDM, NDMA, MoE, DST	SDMAs, SIDMs
19	To integrate topics and themes related to DRR and DRM, into key professional and higher education disciplines and areas of inter/trans/multi-disciplinary studies.	NIDM, NDMA, MoE, CoEs	SDMA, SIDMs



20	To identify and promote / undertake case studies for different hazard - vulnerability contexts, to draw lessons and, thereby, assist in improving capacity development and value addition in policy processes.	NIDM, NDMA, Nodal Ministries, MoE, CoEs	SDMA, SIDMs
<b>Training and Awareness Promotion</b>			
21	To design training programmes targeting community leaders, volunteers, functionaries in local authorities – ULBs, Panchayats, Industrial areas, etc.	NIDM, NIRD, Training Institutions.	SDMAs, SIDMs, ATIs
22	To promote capacity building and training of professionals / stakeholders in relevant departments on various aspect of DRR including risk insurance.	NIDM, NDMA, IRDAI, DoFS, MHA.	SDMA, ATIs, SIDMs
23	SDRFs to work on strengthening cooperation with local level responders such as Aapda Mitras, NYKS, NCC & NSS volunteers by mentoring and capacity building.	MHA, NDMA, MoYAS, NDRF, NIDM	SDMA, SIDMs, SDRFs

24	To assess and address capacity gaps at local level in disaster management planning and assessments, and provide specific trainings through professional institutes.	NIDM, NDMA, Nodal Ministries, LBSNAA.	SDMAs, SIDMs, ATIs
<b>Planning and Execution</b>			
25	To further strengthen local level disaster preparedness and response mechanism by providing resources and equipment.	MHA & NDMA	SDMAs, State Deptts of DM
26	To harmonize the organizational set up of SDMAs, DDMAs, SIDMs with adequate customization, scoping and equipping with human resources, specialists and functional facilities, training, etc.	MHA & NDMA	SDMAs, SIDMs, Deptt of DM
27	To strengthen the coastal resilience programmes by incorporating components on coastal erosion, industrial accidents, oil spills to address DRR concerns.	MHA, NDMA, NIDM, MoEFCC, MoES, MoC&F	SDMAs, State Deptt. of DM, Environment, Forests, Climate change cells
28	To integrate all possible channels including multi-media approaches with CAP platform in order to maximize last mile connectivity.	NDMA, & MoI&B	SDMA, Deptt of DM



29	To review and strengthen EOCs at all levels with resources and functional know-how to address changing risk scenarios.	MHA, NDMA, ISRO/NRSC	SDMAs, SIDMs, SEOCs
30	To set up an expert group to guide implementation of NBS in all States/UTs and integrate those with DRR plans and action frameworks.	NDMA, NIDM, MoEFCC, DST	SDMAs, Deptt. of DM, Environment, Forests, S&T
31	To promote implementation of sectoral DRR strategies and plans, especially in sectors viz. power, highways, health, urban, industry, chemicals & petrochemicals, renewable energy, education, agriculture, environment, MSME, aviation, etc.	MHA, NDMA, Sectoral Ministries, NIDM	SDMAs, Deptt of DM, Sectoral Deptts. SDMIs
32	To enhance city resilience to disasters and climate extremes by integrating these efforts with smart city programs and master-planning. To address peri-urban issues and use a scorecard approach for assessments.	MHA, NDMA, MoHUA, Nodal Ministries, CoEs, etc.	SDMA, Deptt of DM, Sectoral Deptts.

33	To promote cost-effective solutions for earthquake-resistant buildings and retrofitting techniques. To address linkages with building bye laws and codes enforcement.	MoHUA, BMTPC, BIS, NDMA, MHA, NIDM	SDMA, Deptt of DM, Housing Deptts. PWD
34	To create a culture of safety with respect to lightning event for better preparedness measures.	NIDM, MoES, MoRD, MoPR, NDMA	SDMA, Deptt of DM
35	To ensure that all key sectors of development review their sectoral development plans and integrate DRR measures through convergence of DM plan in their policies, schemes and programmes/ interventions.	NDMA, NIDM, Sectoral Ministries,	SDMA, Deptt of DM, Sectoral Deptts.





Ministry of Home Affairs, Government of India