



ANNUAL REPORT 2022-23



NATIONAL DISASTER MANAGEMENT AUTHORITY (NDMA)
Government of India
NDMA Bhawan, A-1, Safdarjung Enclave,
New Delhi-110 029

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Abbreviations

AERB	Atomic Energy Regulatory Board
BARC	Bhabha Atomic Research Centre
CBRN EM	Chemical, Biological, Radiological and Nuclear Emergency
CDRI	Coalition for Disaster Resilient Infrastructure
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
CSSR	Collapsed Structure Search and Rescue
DM	Disaster Management
DPR	Detailed Project Report
DRR	Disaster Risk Reduction
EFC	Expenditure Finance Committee
EW	Early Warning
FICCI	FICCI Federation of Indian Chambers of Commerce and Industry
GIS	Geographic Information System
Gol	Government of India
HAP	Heat Action Plan
HPC	High Powered Committee
IMD	India Meteorological Department
INSARAG	International Search and Rescue Advisory Group
JNPT	Jawaharlal Nehru Port Trust
KAPS	Kaiga Atomic Power Station
KKNPP	Kundankulam Nuclear Power Plant
LBSNAA	Lal Bahadur Shastri National Academy of Administration
MAPS	Madras Atomic Power Station
MFR	Medical First Responder
MHA	Ministry of Home Affairs
MRDS	Mobile Radiation Detection System
NCMC	National Crisis Management Committee
NCRMP	National Cyclone Risk Mitigation Project
NDMA	National Disaster Management Authority

NDRF	National Disaster Response Force
NEC	National Executive Committee
NERMP	National Earthquake Risk Mitigation Project
NGOs	Non-Governmental Organizations
NIDM	National Institute of Disaster Management
NPCIL	Nuclear Power Corporation of India Limited
NPP	Nuclear Power Plant
OBNEs	Organisations, Bodies, Networks and Experts
OFC	Optical Fiber Cable
R&D	Research and Development
SAR	Search & Rescue
SDRF	State Disaster Response Force
SFDRR	Sendai Framework for Disaster Risk Reduction
SFM	Sendai Framework Monitoring
TAPS	Tarapur Atomic Power Station
UNFCCC	United Nations Framework Convention on Climate Change
Uts	Union Territories

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CHAPTER: I

INTRODUCTION

Vulnerability Profile

1.1 India, due to its unique geo-climatic and socio-economic conditions, is vulnerable, in varying degrees, to floods, droughts, cyclones, tsunamis, earthquakes, urban flooding, landslides, avalanches and forest fire. Out of 36 States and Union Territories (UTs) in the country, 27 are disaster prone. 58.6% landmass is prone to earthquakes of moderate to very high intensity; 12% land is prone to flood and river erosion; out of 7,516 km coastline, 5,700 km is prone to cyclones and tsunamis; 68% of the cultivable land is vulnerable to drought, hilly areas are at risk from landslides and avalanches, and 15% of landmass is prone to landslides. A total of 5,161 Urban Local Bodies (ULBs) are prone to urban flooding. Fire incidents, industrial accidents and other manmade disasters involving chemical, biological and radioactive materials are additional hazards, which have underscored the need for strengthening mitigation, preparedness and response measures.

1.2 Disaster risks in India are further compounded by increasing vulnerabilities related to changing demographic and socio-economic conditions, unplanned urbanization, development within high-risk zones, environmental degradation, climate change, geological hazards, epidemics and pandemics. Clearly, all these contribute to a situation where disasters seriously threaten India's economy, its population and sustainable development.

Genesis of NDMA

1.3 The basic responsibility for undertaking rescue, relief and rehabilitation measures in the event of a disaster rests with the State Government. The Central Government supplements the efforts of the State Governments by providing logistic and financial support in case of severe natural calamities. The logistic support includes deployment of aircraft, boats, special teams of Armed Forces, Central Armed Police Forces (CAPFs) and National Disaster Response Force (NDRF), arrangements for relief materials and essential commodities including medical supply, restoration of critical infrastructure facilities including communication network and such other assistance as may be required by the affected States and UTs to meet the situation effectively.

1.4 The Government has brought about a change in the approach to disaster management from a relief-centric to a holistic and integrated approach covering the entire gamut of disaster management (prevention, mitigation, preparedness, response, relief, reconstruction and rehabilitation). The approach is based on the conviction that development cannot be sustainable unless disaster mitigation is built in the development process.

1.5 The Government of India (GoI), recognising the importance of Disaster Management (DM) as a national priority, had set up a

High Powered Committee (HPC) in August 1999 and a National Committee on Disaster Management in 2001 after the Gujarat Earthquake to make recommendations on the preparation of DM Plans and to suggest effective mitigation mechanisms. However, after the Indian Ocean Tsunami of 2004, the GoI took a defining step in the legislative history of the country, through an Act of Parliament, by creating the National Disaster Management Authority (NDMA) to spearhead and implement a holistic and integrated approach to DM in India.

- 1.6 The Government of India has enacted the Disaster Management Act, 2005 to provide for the effective management of disasters and for matters connected therewith or incidental thereto. It lays down the institutional mechanism for drawing up and monitoring the implementation of the disaster management plans, ensuring

measures by various wings of the Government for prevention and mitigation of the effects of disasters and prompt response to any disaster situation.

Constitution of NDMA

- 1.7 NDMA was constituted on 30th May, 2005 by an Executive Order of the GoI. Subsequently, the Disaster Management Act, 2005 was enacted on 23 December, 2005. NDMA was notified on 27 September, 2006 under the provisions of the Disaster Management Act, 2005.

Composition of NDMA

- 1.8 The Prime Minister of India is the ex-officio Chairperson of the NDMA. The detailed composition of NDMA is placed at Annexure I. The current Members and their dates of joining the Authority are given below:

1.	Shri Kamal Kishore	Member (Since 16.02.2015) Secretary (In-charge since 01.10.2021)
2.	Lt Gen Syed Ata Hasnain, PVSM, UYSM, AVSM, SM, VSM & BAR (Retd)	Member (Since 21.02.2020)
3.	Shri Rajendra Singh	Member (Since 20.02.2020)
4.	Shri Krishna Swaroop Vatsa	Member (Since 04.05.2020)

- 1.9 At the national level, NDMA has the responsibility, inter alia, of laying down policies on disaster management and issuing guidelines to be followed by different Ministries/Departments of the Government of India for the purpose of integrating Disaster Risk Reduction (DRR) measures in their development plans

and projects. It also lays down guidelines to be followed by the States in drawing up their respective State DM Plans and taking measures for preventing disasters or mitigating its impact as well as building capacity for dealing with any disaster as it may consider necessary.

NDMA Secretariat

1.10 The organizational structure of NDMA was approved by the Union Cabinet in May 2008. The Secretariat is headed by a Secretary with five Joint Secretaries/Advisors including one Financial Advisor. There are ten Joint Advisors (Director level) and fourteen Assistant Advisors (Under Secretary level) along with supporting

staff. The organization is also supported by Senior Research Officers. Disaster being a specialized subject, it has also been ensured that the expertise of Specialists is available on contractual basis. The detailed organization of the NDMA Secretariat has been discussed in a separate Chapter on 'Administration and Finance'. List of Officers is placed at Annexure II.

CHAPTER: II

FUNCTIONS AND OBJECTIVES

Functions of NDMA

2.1 NDMA, as the apex body for DM in India, has the responsibility of laying down the policies, plans and guidelines for DM for ensuring timely and effective response to disasters. Its statutory functions include the responsibility to:

- (a) lay down policies on DM;
- (b) approve the national plan and the plans prepared by the ministries/ departments of the GoI in accordance with the national plan;
- (c) lay down guidelines to be followed by the State authorities in drawing up the State plan;
- (d) lay down guidelines to be followed by the different ministries/ departments of the GoI for the purpose of integrating the measures for prevention of disaster or the mitigation of its effects in their development plans and projects;
- (e) coordinate the enforcement and implementation of the policy and plan for DM;
- (f) recommend provision of funds for the purpose of mitigation;
- (g) provide such support to other countries affected by major disasters as may be determined by the central government;
- (h) take such other measures for the

prevention of disaster, or the mitigation, or preparedness and capacity building for dealing with threatening disaster situation or disaster as it may consider necessary;

- (i) lay down broad policies and guidelines for the functioning of the National Institute of Disaster Management (NIDM);
- (j) exercise general superintendence, direction and control of the National Disaster Response Force (NDRF), constituted under the Act, for the purpose of specialist response to a threatening disaster situation or disaster;
- (k) authorize the concerned department or authority to make emergency procurement of provisions or materials for rescue and relief in threatening disaster situation or disaster;
- (l) recommend guidelines for the minimum standards of relief to be provided to the persons affected by disasters.

2.2 NDMA is mandated to deal with all types of disasters, natural or man-made. Whereas, such other emergencies including those requiring close involvement of the security forces and/or intelligence agencies such as terrorism (counter-insurgency), law and order situation, serial bomb blasts, hijacking, air accidents, Chemical,

Biological, Radiological and Nuclear (CBRN) weapon systems, mine disasters, ports and harbour emergencies, forest fires, oil field fires and oil spills will continue to be handled by the extant mechanism, i.e., National Crisis Management Committee (NCCM).

- 2.3 NDMA shall, however, formulate guidelines, facilitate training and preparedness activities in respect of CBRN emergencies. Cross-cutting themes like medical preparedness, psychosocial care and trauma, community-based disaster preparedness, information & communication technology, training, awareness generation, etc. for natural and man-made disasters will also engage the attention of NDMA in partnership with the stakeholders concerned. Resources available with the disaster management authorities at all levels, which are capable of discharging emergency support functions, will be made available to the nodal Ministries/ Agencies dealing with the emergencies at times of impending disaster/ disasters.

Vision of NDMA

- 2.4 Flowing from the mandate of NDMA and the National Policy on Disaster Management, the vision is:

“To build a safe and disaster resilient India by developing a holistic, proactive, multi-disaster oriented and technology driven strategy through a culture of prevention, mitigation, preparedness and response”.

Objectives of NDMA

- 2.5 The objectives of NDMA are:

- (a) Promoting a culture of prevention, preparedness and resilience at all levels through knowledge, innovation and education.
- (b) Encouraging mitigation measures based on technology, traditional wisdom and environmental sustainability.
- (c) Mainstreaming disaster management into the developmental planning process.
- (d) Establishing institutional and technological frameworks to create an enabling regulatory environment and a compliance regime.
- (e) Ensuring efficient mechanism for identification, assessment and monitoring of disaster risks.
- (f) Developing contemporary forecasting and early warning systems backed by responsive and failsafe communication with information technology support.
- (g) Ensuring efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society.
- (h) Undertaking reconstruction as an opportunity to build disaster resilient structures and habitat for ensuring safer living.
- (i) Promoting a productive and proactive partnership with the media for disaster management.

CHAPTER: III

POLICY, PLANS AND GUIDELINES

National Policy on Disaster Management (NPDM) 2009

3.1 National Policy on Disaster Management was approved by the Union Cabinet on 22nd October, 2009 and released on 18th January 2010. It portrays a paradigm shift from erstwhile 'Response-Centric' approach to the holistic management of disasters with emphasis on Prevention, Preparedness and Mitigation.

National Disaster Management Plan (NDMP)

3.2 NDMA had prepared the first National Disaster Management Plan in 2016. The same was revised after extensive consultations in November, 2019. The revised plan includes new hazards (Thunderstorm, Lightning, Squall, Dust Storm, and Strong Wind / Cloudburst and Hailstorms / Glacial Lake Outburst Flood (GLOF) / Heat wave / Biological and Public Health Emergencies (BPHE) / Forest Fire), new chapters (Coherence and Mutual Reinforcement for DRR of the Post-2015 Global Frameworks / Social Inclusion / Mainstreaming DRR) and also includes Climate Change Risk Management as new thematic area for climate risk informed DRR. This NDMP has delineated time bound actions for all concerned Ministries/Departments/Agencies and other stakeholders in order to match it with timelines of Sendai Framework for DRR. Plan has been shared

with Central Ministries / Departments, all States / UTs and other stakeholders so that they develop their plans and strategies accordingly to match the timelines of NDMP 2019 to achieve the Sendai targets.

National Disaster Management Guidelines

3.3 In order to translate the objectives into plans, the NDMA adopted a mission-mode approach involving a number of initiatives with the help of various institutions (administrative, academic, scientific and technical) operating at the national, state and local levels. As a policy, the central ministries, departments and states, have been involved in evolving the guidelines, besides all other stakeholders. These guidelines; based on specific disasters and themes (such as capacity development and public awareness) will provide the basis of preparation of plans. Preparation of these Guidelines takes minimum 12 to 18 months, depending upon the complexity of the subject. The approach to formulation of guidelines comprised a 'nine-step' participatory and consultative process with stakeholders as shown in figure 3.1

The process of preparation of guidelines comprises:

- A quick review of the studies conducted, disaster-wise, of the actions/steps taken so far by various agencies, including the Central Ministries/

Departments, States, Scientific and Technical Institutions etc.

- Identification of the residual agenda in terms of operational, administrative, financial and legal issues.
- The drawing up of a roadmap to the destination duly indicating milestones to facilitate easy monitoring.
- In terms of goals and objectives, screening down the destination is to

be attained, in the short, as well as long term, duly prioritized as vital, essential and desirable.

- Four important questions were to be answered: i.e. What is to be done?, how it is to be done?, who will do it?, and by when?
- Putting in place an institutional mechanism that oversees the operationalization of this roadmap.

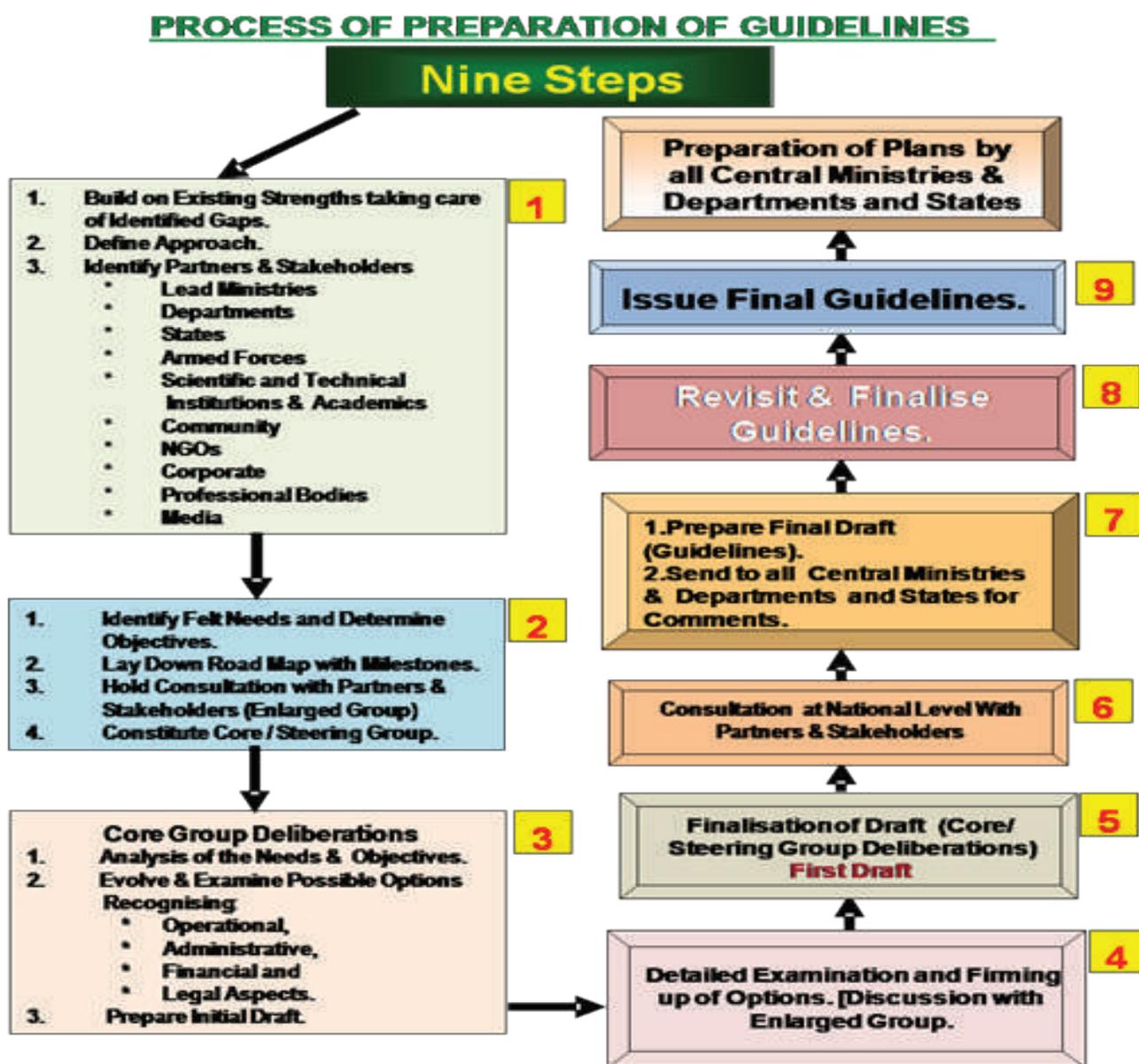


figure 3.1

3.4 Guidelines and Reports & Other documents released:

A. Guidelines issued:

List of Guidelines issued by NDMA		
S. No.	National Disaster Management Guidelines on	Month and year of preparation/ release
1.	Management of Earthquakes	April 2007
2.	Management of Chemical (Industrial) Disasters	April 2007
3.	Preparation of State Disaster Management Plans	July 2007
4.	Management of Medical Preparedness and Mass Casualty Management	October 2007
5.	Management of Floods	January 2008
6.	Management of Cyclones	April 2008
7.	Management of Biological Disasters	July 2008
8.	Management of Nuclear and Radiological Emergencies	February 2009
9.	Management of Landslides and Snow Avalanches	June 2009
10.	Management of Chemical (Terrorism) Disaster	June 2009
11.	Psycho-social support and mental health services in disasters	December 2009
12.	Incident Response System	July 2010
13.	Management of Tsunamis	August 2010
14.	Management of the Dead in the aftermath of Disasters	August 2010
15.	Management of Urban Flooding	September 2010
16.	Management of Drought	September 2010
17.	National Disaster Management Information and Communication System	February 2012
18.	Scaling, Type of Equipment and Training of Fire Services	April 2012
19.	Seismic Retrofitting of Deficient Buildings and Structures	June 2014
20.	School Safety Policy	Feb 2016
21.	Hospital Safety	Feb 2016
22.	Minimum Standards of Relief	Feb 2016
23.	Museums	May 2017
24.	Cultural Heritage Sites and Precincts	September 2017
25.	Boat Safety	September 2017
26.	Preparation of Action Plan – Prevention and Management of Thunderstorm & Lightning / Squall/ Dust/ Hailstorm and Strong Wind	March 2019
27.	Temporary Shelters for Disaster - Affected Families	September 2019
28.	Disability Inclusive Disaster Risk Reduction	September 2019
29.	Landslide Risk Management Strategy	September 2019

30.	Preparation of Action Plan – Prevention and Management of Heat Wave (Revised Guidelines).	October 2019
31.	Management of Glacial Lake Outburst Floods (GLOFs)	October 2020
32.	Simplified Guideline for Earthquake Safety of Building from National Building Code of India 2016	May , 2021
33.	Cool Roof : House Owners’ Guide to alternate roof cooling solutions	May , 2021
34.	National Guidelines for Preparation of Action Plan – Prevention and Management of cold Wave and Frost	June 2021

B. Reports and other documents issued:

S. No.	Description
1.	Revamping of Civil Defence
2.	NIDM’s Functioning
3.	Strengthening of safety and security for transportation of POL tankers
4.	Threats to Municipal Water Supply and Water Reservoir’s
5.	Training Regime for Disaster Response
6.	Hand Book for Training and Capacity Building of Civil Defence and Sister Organizations: Part I & II
7.	Managing Crowds at Events and Places of Mass Gathering
8.	Concise Framework for Preparation of Management Plan for Events/ Venues of Mass Gathering
9.	Compendium of relevant Acts/Laws/Rules / Regulations/ Notifications on Disaster Management
10.	Model Framework of District Disaster Management Plan (DDMP) and Explanatory Notes for preparation of DDMP.
11.	Cyclone Hudhud – Strategies and Lessons for Preparing Better & Strengthening Risk Resilience in Coastal Regions of India
12.	Training Manual : How to conduct emergency management exercise
13.	Guidelines on ensuring Disaster Resilient construction of Buildings and Infrastructure
14.	Pilot Project on Capacity Building for advanced Trauma Life Support in India
15.	Capacity Building in DM for Govt. Officials & Representative of Panchayati Raj Institution & Urban Local Bodies at District Level
16.	Roadmap for mitigation of Urban Flood
17.	Gujarat Flood 2017- A case study
18.	Training of Masons on Hazard Resistant Construction
19.	Tamil Nadu Floods: Lessons learnt and Best Practices – A report

20.	Study Report on Gaja Cyclone - 2018
21.	Home Owner's Guide for Cyclone and Earthquake Safety
22.	Earthquake Disaster Risk Index Report
23.	Fire Safety in India (Proceedings of 15th Formation Day of NDMA)
24.	A Preliminary Study to Estimate Temperature Threshold for Heat Wave Warning in India
25.	Pocket Book of Do's and Don'ts on various disasters
26.	A digital book on Do's and Don'ts and FAQ on COVID-19
27.	National Workshop Report for Preparation and Management of Heatwave 2020
28.	Report highlighting Global best practices in Forest Fire Management.
29.	SOP on accepting International Assistance for Disaster Relief and Recovery
30.	Write Up on Disability Inclusive Disaster Risk Reduction (DIDRR)

3.5 Workshop/ Training Programmes conducted by NDMA : Forest & Climate Change.

A. Consultative Workshop on Forest Fire Management in India: NDMA in association with Ministry of Environment, Forest and Climate Change (MoEFCC) organised a Consultative Workshop on Forest Fire Management in India on 11th May, 2022 at India International Centre, New Delhi to discuss the issue of forest fires, plan for achieving following objectives as laid down by the Chairman, NDMA as well as challenges and opportunities in dealing with the issue of forest fire management.

- (i) Need to work to substantially reduce the vulnerability of forests across the diverse forest ecosystems in the country against fire hazards,
- (ii) Enhance the capacity of forest personnel and institutions for timely detection of possible fire events and for fighting forest fires and
- (iii) Speed up recovery after a fire event.

The workshop was inaugurated by Shri Nityanand Rai, Hon'ble Minister of State for Home Affairs and Shri Ashwini Kumar Choubey, Hon'ble Minister of State for Environment,

The first technical session of the workshop dealt with the scenario of forest fires in India including early warning systems, management and best practices. The second technical session focused on the coordination mechanism for forest fire management and deliberated on how to increase cooperation and collaboration in this regard. The third technical session saw presentations from the Nodal officers of states which have one or more of the 26 districts most affected by forest fires in the last 10 years. These 26 districts account for 50% of the forest fires occurring in India. The presentations focused on the challenges faced in ground zero for forest fire management and understanding the needs of Forest Fire Prone States.

The Consultative Workshop helped all the stakeholders including representatives of State Forest Departments, MoEFCC, NDMA, Forest Survey of India (FSI), Forest Research Institute (FRI) and National Disaster Response Force (NDRF) in understanding the strength and challenges of various organizations and departments at National, State and District level and will facilitate in finalization of proposed "National Project on Forest Fire Management".

B. Regional Conclaves of SDMAs: Regional Conclaves of SDMAs involving States/UTs facing similar kinds of hazards and vulnerabilities were held. The Second Regional Conclave of SDMAs was held on 14th-15th October, 2022 at Gangtok, Sikkim. The Third Regional Conclave of SDMAs was held on 30th November - 1st December, 2022 at Lucknow, Uttar Pradesh.

The objective of the Conclaves was to provide a platform to SDMAs/Institutions to share their best practices, lessons learnt and to discuss other issues pertaining to disaster management in their States/UTs.

The following points were discussed during the Conclaves:

- a. States' perspective of disaster management in India
- b. Progress and achievements vis-à-vis SFDRR
- c. Institutional setup and strengthening at State level and District level
- d. States' Expectation from NDMA
- e. NDMA's Expectation from States
- f. Issues and challenges in working towards disaster resilient India
- g. Best Practices and Lessons Learnt
- h. Cross Learning between States – replication of best practices
- i. Scientific & technological advancement by local institutions

The Conclave aimed to get results in following:

- a. Better understanding and coordination between NDMA and SDMAs

- b. Roadmap for institutional strengthening
- c. Cross learning between States
- d. Replication of best practices & prototype development
- e. Strategies for multiplier effect of lessons learnt
- f. Documentation of Scientific & technological advancements
- g. Resolution of relevant issues, if any

C. Two day Training Programme on Sendai Framework for Disaster Risk Reduction (SFDRR): Two days training programme (20-21st December, 2022) titled Sendai Framework for Disaster Risk Reduction (SFDRR) progress achieved and way forward was conducted at NIDM.

The objectives were to enhance Consultants' knowledge of the Sendai Framework for DRR, assess implementation progress and challenges at the district level, and provide information on tools and approaches to support states and districts in implementing the framework, including SDMPs, DDMPs, and Departmental Plans. It also aimed to develop an understanding of the Mid-Term Review process and skills in maintaining data using the NDMIS SFM Module at the district level.

D. National Workshop on Heat Wave 2023: NDMA organized a workshop in partnership with Government of Maharashtra and IIT Mumbai on 13th – 14th February, 2023 to discuss heat wave mitigation.

The broad objective of workshop included sharing of experiences and lessons learnt, sustainable long term mitigation measures

and future course of action on heat wave. The Workshop was attended by representatives of all heat waves prone States, the concerned central Ministries and other stakeholders involved in weather forecasting & mitigation including Research Institutions..

The following points were discussed during the Workshop:

- a. Looking into state of science (monitoring to early warning)
 - b. Revisiting policies and response strategies
 - c. Sharing experiences and lessons-learned for improving the Heat Wave Risk Management
 - d. Deliberations on Heat Wave Risk Management (Mitigation, Preparedness, Response and Recovery) for 2023
 - e. Sustainable long term mitigation measures and future course of action.
 - f. Best Practices and Lessons Learnt
- E. One day workshop for the consultants working under the Scheme for strengthening of DDMA's of 115 Aspirational Districts

National Disaster Management Authority organized a one day workshop on Sendai Framework for Disaster Risk Reduction (SFDRR) Progress Achieved and Way forward on 20th March 2023 at NIDM.

The workshop aimed to sensitize the consultants appointed under the NDMA Scheme for Strengthening of District Disaster Management Authorities (DDMA's) of 115 multi-hazard prone and backward districts identified by NITI Aayog about the roles in implementation and

monitoring of progress under the SFDRR.

- F. National Consultation on Drought Mitigation Planning: NDMA and National Rain-fed Area Authority (NRAA), Ministry of Agriculture & Farmers Welfare, Government of India carried out One day national consultation workshop on 22 February 2023. This consultation included experts and key resource persons from various ministries/departments, scientist & academics, NGOs and others working in drought vulnerable areas, to bring some new perspective to the set of interventions for drought mitigation and planning.

Objectives:

- a. Sharing of XVth Finance Commission recommendation
- b. Drought Mitigation planning and Strategy
- c. Experience sharing for convergence with key schemes run by union and state governments to mitigate the successive drought.
- d. A framework/ guideline for Drought Mitigation Program
- e. Long term drought mitigation planning and set up a mechanism at the local level intervention

3.6 Formulation of State Disaster Management Plans:

33 out of 36 States / Union Territories (UTs) have their approved State Disaster Management Plan. The erstwhile State of Jammu and Kashmir, which also had approved SDMP, has been bifurcated into two UTs (i) Jammu & Kashmir and (ii) Ladakh. Also, the erstwhile Union Territories (i) Dadra and Nagar Haveli and (ii) Daman and Diu, both of which had approved

SDMP, have been merged as one Union Territory i.e. UT of Dadra and Nagar Haveli and Daman and Diu. These three (3) newly created UTs are in the process of preparation of separate SDMP.

3.7 Guidelines and other documents under preparation:

A. Draft Standard Operating Procedure (SOP) on channelizing Domestic Aid/Humanitarian Assistance for disaster relief and recovery

The primary responsibility of disaster management encompassing the activities related to rescue, relief, and rehabilitation lies with the State Governments. In order to address these issues in domestic aid, there is a need for the State governments to develop an appropriate Standard Operating Procedure (SOP) for coordination and management of domestic aid including assessment of requirements, request for aid, receiving aid, sorting, storing, packing, distribution of aid, and management of unused aid. The SOP being prepared by NDMA aims to bridge the gap in the management of domestic aid. The Specific Objectives of this SOP are to:

- i. Provide a framework for channelizing domestic aid which can be adopted by the State Governments and other stakeholders/central Ministries.
- ii. Improve coordination and efficient delivery of assistance.
- iii. Standardize procedures which shall give importance to the mode of delivery of humanitarian assistance for disaster relief.
- iv. Assess the relief needs and provide relief assistance for the disaster affected.

- v. Have protocols and institutional mechanisms at State and district level for receiving, managing and distributing domestic aid.

B. Loss and Damage including adaptation under the Climate Change Negotiations

NDMA negotiates at UNFCCC on behalf of India on issues relating to loss and damage and adaptation. The following activities were undertaken under the climate change negotiations:

- i. New Funding Arrangements for responding to Loss and Damage and the Fund : At present, no funding arrangements exist under UNFCCC to address the loss and damage caused by human-induced climate change. The initiatives like the Warsaw International Mechanism on Loss and Damage, the Santiago Network for technical assistance, the Fiji Clearinghouse for Risk Transfer, and the Glasgow Dialogue are forums for providing technical assistance only. At COP 27, it was decided to establish new funding arrangements for assisting developing countries that are particularly vulnerable to the adverse effects of climate change in responding to loss and damage, including with a focus on addressing loss and damage by providing and assisting in mobilizing new and additional resources, and that these new arrangements complement and include sources, funds, processes and initiatives under and outside the Convention and the Paris Agreement (FCCC/ CP/2022/L.18). India spearheaded negotiations for establishing this fund which included drafting of position papers on the matter and coordination with negotiating blocks.

- II. It was also decided to establish a transitional committee for the operationalization of the new funding arrangements for responding to loss and damage and the fund. India will be represented by Shri Kunal Satyarthi, Joint Secretary; NDMA has been elected as a member to transitional committee from the Asia Pacific Group. In order to get technical advice on various matters relating to the operationalising the fund a Technical Advisory Group (TAG) has been constituted with representatives from Central Ministries and Depts., scientists and economists.
- III. Santiago Network on Loss and Damage (SNLD): The Santiago network as part of the Warsaw International Mechanism on loss and damage was established at COP25 in 2019, to catalyse technical assistance of relevant organizations for the implementation of relevant approaches in developing countries that are particularly vulnerable to the adverse impacts of climate. NDMA also negotiated on creation of organizational structures for the Santiago Network at COP27. In its decision (FCCC/CP/2022/L.5/ Rev.1 and FCCC/PA/CMA/2022/L.4, respectively), the COP endorses the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) decision on the Santiago Network especially on the structure, namely a hosted secretariat that will facilitate its work, to be known as the Santiago Network Secretariat, an Advisory Board to provide guidance and oversight to the Santiago Network Secretariat on the effective implementation of the functions of the network, and a

network of member Organisations, Bodies, Networks and Experts (OBNEs) covering a wide range of topics relevant to averting, minimizing, and addressing loss and damage. NDMA prepared the country positions and closely worked with other negotiating blocks to spearhead the negotiations at COP27.

- IV. Adaptation Communication: At present, the first adaptation communication for India is being drafted. Seven sector working groups with priority sectors, themes and regions have been constituted to provide inputs. NDMA is heading the disaster management and infrastructure resilience working groups which included representatives from Central Ministries and Depts., scientific organizations and academic institutions.

3.8 Disaster Management Plan of Ministries/ Departments of Government of India:

For assistance of the Ministries/ Departments of the Govt. of India in preparation of their Disaster Management Plan (DMP), NDMA formulated a 'Suggested Structure for Disaster Management Plan-Departments/ Ministries in the GoI' and circulated the same to all concerned. This is available on NDMA's web site www.ndma.gov.in under the link Policy and Plan – DM Plan Templates. A simplified template for DM Plan has also been prepared for Ministries / Departments who are not directly involved in Disaster Management.

A list of Frequently Asked Questions (FAQs) from Ministries on DMP and their answers have been circulated to all Ministries / Departments and also uploaded on NDMA's website under the link Policy and Plan – DM Plan Templates.

The matter regarding preparation of DMP by the Ministries/Departments of the Government of India as per Section 37 of the DM Act is being consistently pursued with them through meetings and D.O. letters.

(As on 31.03.2023) NDMA approved the Disaster Management Plan (DMP) of following Ministries / Departments of Govt. of India:

1. Ministry of Corporate Affairs
2. Department of Fisheries
3. Department of Animal Husbandry and Dairying
4. Ministry of Food Processing Industries
5. Ministry of Steel
6. Department of Atomic Energy
7. Department of Agriculture, Cooperation & Farmers Welfare (Common plan of Ministry of Agriculture & Farmers Welfare namely National Agriculture Disaster Management Plan)
8. Department of Agricultural Research and Education (Common plan of Ministry of Agriculture & Farmers Welfare namely National Agriculture Disaster Management Plan)
9. Ministry of Power
10. Ministry of Coal
11. Ministry of Labour and Employment
12. Ministry of Panchayati Raj
13. Ministry of Skill Development & Entrepreneurship
14. Department of Justice

(As on 31.03.2023) NDMA examined the Disaster Management Plan (DMP) of following

Ministries/ Departments of Govt. of India and furnished comments for their revision:

1. Ministry of AYUSH
2. Department of Fertilizers
3. Ministry of Civil Aviation
4. Department of Commerce
5. Department for Promotion of Industry and Internal Trade
6. Department of Telecommunications
7. Ministry of Culture
8. Department of Defence Production
9. Ministry of Earth Sciences
10. Department of Health Research
11. Department of Heavy Industry
12. Department of Internal Security
13. Department of States
14. Department of Official Language
15. Department of Home
16. Department of Jammu, Kashmir and Ladakh Affairs
17. Department of Border Management
18. Ministry of Housing and Urban Affairs
19. Department of School Education & Literacy
20. Ministry of Information and Broadcasting
21. Department of Water Resources, River Development and Ganga Rejuvenation
22. Ministry of Drinking Water & Sanitation
23. Ministry of Mines

24. Ministry of Minority Affairs
25. Ministry of Petroleum & Natural Gas
26. Ministry of Railways
27. Ministry of Road Transport and Highways
28. Ministry of Women and Child Development
29. Department of Youth Affairs
30. Department of Space
31. Ministry of External Affairs
32. Department of Public Enterprises
33. Department of Rural Development
34. Ministry of Electronics and Information Technology
35. Department of Pharmaceuticals
36. Department of Land Resources
37. Department of Economic Affairs
38. Department of Chemicals and Petrochemicals
39. Department of Consumer Affairs
40. Ministry of Environment, Forest, and Climate Change
41. Department of Biotechnology

3.9 Schemes under implementation:

A. Implementation of the Sendai Framework for Disaster Risk Reduction: The Scheme – Implementation of the Sendai Framework for Disaster Risk Reduction – was approved in February, 2019 by NDMA at a cost of Rs.2010.6 Lakh for implementation in all the States and UTs for three years during 2018-19 to 2020-21. Implementation

period of the entire Scheme has been extended upto FY 2025-26 and States/ UTs can implement the Scheme for three years from the date of start of the Scheme.

The Scheme, inter – alia, provides for financial support for hiring of one Disaster Management (DM) professional at SDMA in all States/ UTs. The DM professional will facilitate/ support the State Administration in taking measures for implementation of Sendai Framework for Disaster Risk Reduction. The details of financial support for the components of the Scheme are as under:

- a. Hiring of one Sr. Consultant at the rate of Rs. One Lakh per month.
- b. Hiring of one Data Entry Operator at the rate of Rs. 22,000/- per month.
- c. Hiring of the vehicle with a ceiling of Rs. 25,000/- per month for the first year, Rs. 27,500/- per month for the second year, and Rs. 30,250/- for the third year.
- d. Financial support of Rs. 2.0 Lakh (one time) for setting up of the office.

The details of the amount released to States / UTs under the Scheme (as on 25.5.2023) are as under:

Total funds released under the Scheme		
Financial Year	Funds released (Rs. in Lakhs)	No of States/ UTs
2018-19	594.56	29 States 2 UTs
2019-20	22.16	3 UTs
2020-21	134.90	7 States 1 UT
2021-22	235.26042	11 States 2 UTs
2022-23	219.014	10 States 3 UT
2023-24	41.07253	4 States
Grand Total	1246.96695	

- B. Strengthening of District Disaster Management Authorities (DDMAs) of Hazard Prone Districts out of the 115 identified backward districts: The Scheme – Strengthening of District Disaster Management Authorities (DDMAs) of Hazard Prone Districts out of the 115 identified backward districts – was approved in February, 2019 by NDMA at a cost of Rs. 28.98 Crore for implementation in all the States except Goa, where no backward district is identified, for three years during 2018-19 to 2020-21. Implementation period of the entire Scheme has been extended upto FY 2025-26 and States/UTs can implement the Scheme for three years from the date of start of the Scheme.

The Scheme provides for financial support for hiring of one Disaster Management (DM) professional at the rate of Rs. 70,000/- (Rupees Seventy thousand) per month in each of hazard prone districts out of 115 identified districts in 28 States for the duration of the Scheme. The DM professional will facilitate/support the District Administration in taking measures for implementation of Sendai Framework for Disaster Risk Reduction.

The details of the amount released to States under the Scheme (as on 25.5.2023) are as under:

Total Funds released under the Scheme		
Financial Year	Funds released (Rs. in Lakhs)	No of States/ UTs
2018-19	524.30	27 States
2019-20	315.00	315.00
2020-21	221.20	11 States
2021-22	287.00	11 States 1 UT
2022-23	226.80	5 States 1 UT
Grand Total	1574.30	

3.10 Projects completed / under implementation:

- A. Assessment of Vulnerability and Threshold of heat related health hazards in four Cities of India: National Disaster Management Authority (NDMA) awarded the project to Public Health Foundation of India (PHFI), Haryana, India in December, 2019 for study on Assessment of Vulnerability and Threshold of heat-related health hazards in four Cities of India i.e. Ongole (Andhra Pradesh), Karimnagar (Telangana), Angul (Odisha) and Kolkata (West Bengal) at a tentative cost of Rs. 48,98,300/-.

This study will assess the health effect of exposure to heat waves across four cities/towns in the country. Additionally, it will also assess the burden of heat wave in four cities/towns of the country and map the current socio-cultural practices across these four sites. It will explore and document the opportunities and challenges that the vulnerable population are facing in terms of mitigating the risks related to heat waves. Further, the study will provide robust evidence from four cities of India to inform the policy which in turn would strengthen the current state- and region-wise Indian weather warning system for better preparedness. The policy briefs that would be developed for each state, would offer state-specific suggestions to improve preparedness to deal with heat wave.

PHFI has submitted its final report for the Project, which has been accepted by the NDMA. The study has added quantification of heat related vulnerability and temperature threshold for range of geographic settings for four different cities representing four different Indian states. The findings of this analysis may allow policymakers to answer the questions about the severity of the issue and to develop strategies for coping mechanism. The findings

of this study may also help to establish priorities for action among many urban local bodies' players and promote in developing a strategic framework for city specific Heat Action Plan which envisioned at averting and decreasing heat health hazards. The study gave short, mid and long term general policy recommendations for dealing with heat related health hazards.

An amount of Rs. 48,05,295/- was incurred in implementation of the project. The amount has also been paid to PHFI. The project has been completed.

B. Developing framework for Heat Vulnerability Mapping and Model Heat Action Plan for Indian Cities: NDMA has awarded the project to Visvesvaraya National Institute of Technology (VNIT), Nagpur for Developing Framework for Heat Vulnerability Mapping and Model Heat Action Plan for Indian Cities at a tentative cost of Rs. 46,94,612/-.

The deliverables of the project include:

- a. Study showing relationship between outdoor thermal comfort, meteorological parameters and morphological parameters.
- b. Heat Vulnerability Map for 2 cities in Vidarbha region.
- c. Heat Action Plan for a selected city.
- d. Generic methodology for Heat Vulnerability mapping.
- e. Framework for model HAP.

VNIT submitted the 5th six monthly report for the project and same has been accepted by NDMA. The Study is likely to be completed by December, 2023.

C. Compendium of best practices and indigenous technical knowledge with regard to management of forest fire: NDMA awarded a project namely preparation of "Compendium of best practices and indigenous technical knowledge with regard to management of forest fire" to FRI, Dehradun in April, 2021 at a tentative cost of Rs. 28,49,000/- and the work is under progress. The deliverable of the project will be a report compiling information and analysis on following objectives:

- a. To collect the information on indigenous knowledge and traditional practices of forest fire prevention and control from different States.
- b. To interact with the people (directly/ through questionnaire survey) from fringe forest villages where traditional practices are used for forest fire prevention and control. To compile the indigenous knowledge of fire prevention and control available with village communities living near fringe forest.
- c. To analyze how to mainstream traditional practices into modern firefighting.

In order to review the progress of the project, a review meeting was also held with officers of Forest Research Institute (FRI) on 21st March, 2022.

The draft Compendium was received for review of NDMA. NDMA examined the Compendium and shared its comments to FRI, Dehradun for its finalization. The final document was submitted by FRI and is currently under the process of finalizing.

CHAPTER: IV

DISASTER RISK MITIGATION PROJECTS/ ACTIVITIES

4.1 National Cyclone Risk Mitigation Project (NCRMP)

The project has four components namely:

- i) Component A: Early Warning Dissemination System ensuring last mile connectivity
- ii) Component B: Cyclone Risk Mitigation Infrastructure like Multi-Purpose Cyclone Shelters, Evacuation/Approach Roads/Bridges, Saline Embankment & Underground Cabling,
- iii) Component C: Technical Assistance for Multi-Hazard Risk Management and Capacity Building and
- iv) Component D: Project Management and Implementation Support.

Components A, C & D are fully financed by the Central Government and component B is financed by Central and State Government in the ratio of 75:25. The Central Government component is funded through World Bank assistance (loan). National Disaster Management Authority is the implementing agency for the project. The project was approved in following two phases as Centrally Sponsored Scheme (CSS).

4.2 The first phase of the NCRMP was approved in January 2011 for the States of Andhra Pradesh & Odisha. The project was completed in December 2018 with a total expenditure of ₹ 2440 crore.

4.3 The second phase of NCRMP was approved in July 2015 for the States of Goa, Gujarat, Karnataka, Kerala, Maharashtra and West Bengal at a cost of ₹ 2361.35 crore with project completion date as 15th March 2021. The outlay for NCRMP Phase II has been revised twice and the final outlay is ₹ 1864.38 crore. The project has been completed in March 2023. However, the grace period for final closure of the project is July, 2023. An amount of ₹ 1829.85 crore has been released under the scheme out of which expenditure till March 2023 was ₹ 1711.12 crore. The final payment to the vendors is in process and will be completed by July 2023.

4.4 Early Warning and Dissemination System (EWDS) has been installed & commissioned in 2 Coastal States namely Andhra Pradesh and Odisha. EWDS work in Goa, Karnataka and Kerala is under progress and likely to complete by July 2023. Total 795 nos. of Multi-Purpose Cyclone Shelters (MPCS), 1291.52 Km of Roads, 118.18 Km of Saline Embankment (SE), 1331.97 Kms. Underground Electric Cabling (UGC) and 36 nos. of Bridges has been constructed under NCRMP.

4.5 As part of reducing disaster risks and strengthening the capacity of various govt. departments and communities, training and capacity building is one among the subcomponent of the project. 24,007 Govt. officials have been trained through 889 nos. of Capacity Building Trainings on

various topics as well as 68,988 community representatives have also got trained through 3,378 Shelter Level Trainings under NCRMP Phase I & II.

4.6 Apart from that, 795 Cyclone Shelter Management & Maintenance Committees has also been constituted across 8 project States to effectively manage the shelter arrangements. Each committee has the participation of various govt. officials, community representatives, women & weaker section representatives etc. The Cyclone Shelters constructed under NCRMP were/are used for various relief and rehabilitation purposes during the COVID-19 pandemic and recent cyclones.

4.7 Non-structural interventions taken up in NCRMP are as follows:

I. Web based Dynamic Composite Risk Atlas & Decision Support System (Web DCRA-DSS) is a real time impact

forecast tool for location specific cyclone wind speed and inundation level due to storm surge, cyclone induced rainfall and riverine flood. This information can be used by the States for evacuation planning and response as well as in mitigation planning.

II. Comprehensive Multi-hazard Risk Financing Strategy (CMhRFS) study to quantify risks and develop strategies for financial risk transfer for States in case of calamities.

III. Hydro-meteorological Resilience Action Plan (HmRAP) study to strengthen ULBs to effectively plan for and respond to various hazards and climate change in six project coastal cities.

Photographs of assets created under NCRMP I & II



EWDS Spun tower, Ganjam, Odisha



EWDS Monopole, Ganjam, Odisha



Evacuation route Bridge, Karnataka



Evacuation route Bridge, Andhra Pradesh



Saline Embankment, Odisha



Saline Embankment, Karnataka



Underground Cabling Equipment, Goa



Underground Cabling Equipment, West Bengal

Multi-Purpose Cyclone Shelters constructed under NCRMP- I & II



Andhra Pradesh



Odisha



West Bengal



Kerala



Gujrat



Karnataka

Initiatives by Mitigation Division, NDMA

4.8 Mitigation Division takes up pilot projects and studies on cross cutting themes covering different aspects of natural and manmade disasters including Floods, Landslides, Earthquakes, Chemical, Biological, Radiological and Nuclear Disasters etc. through reputed Institutions/ organizations. Various Projects/ activities undertaken by NDMA are as under:-

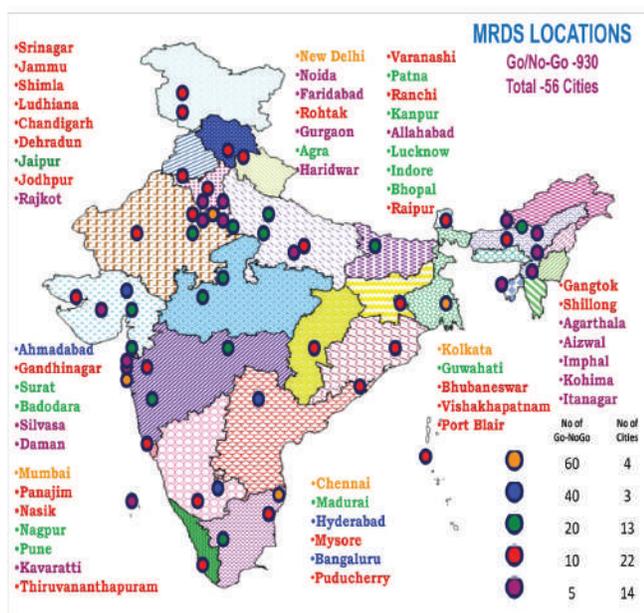
A. Nuclear & Radiological

4.9 Mobile Radiation Detection System (MRDS):

- NDMA has partly completed an important pilot project under which police departments in 56 cities have been equipped with Mobile Radiation Detection System (MRDS) to tackle radiological emergencies in public domain. 930 police patrol vehicles were fitted with Go-No-Go instruments

and 339 police stations have been provided with the radiation measuring instruments and safety kits.

- Under the project, training is also imparted to around 430 police personnel/NDRF in the cities under this project. NDMA has carried out ground level implementation verification for utilization of this instrument on sample basis at four Mumbai police stations (photo attached). Few gap areas like lack of awareness of police personal about the use of this instrument; missing and nonfunctional instrument at police vehicle was observed. A Check list for midterm evaluation was prepared and Action plan for awareness generation cum midterm evaluation at selected cities/police station have been chalked out. Two meetings were held with BARC to finalize Annual Maintenance Contract of MRDS instruments. It is planned to carry out sample midterm evaluation, finalize AMC and handover all MRDS related activities to individual police station or SDMA.





4.10 Training on Chemical, Biological, Radiological and Nuclear (CBRN) Emergency Management for Emergency handlers at Seaports/Airports:

Capacity building and training at the major airports and seaports is continuing to improve the preparedness against CBRN emergency. The CBRN training programme covers basic hazards, safety actions, hands-on field exercises with the target to prepare the ports to prevent and mitigate any CBRN related incidents till the arrival of the trained responders at the incident site. In phase-1 a total of 25 batches of basic training on CBRN Emergency completed and approximately 1400 staff members from the various agencies responsible for the operation of the ports have been trained by the domain experts and NDRF. In Phase -2 basic training at 11 ports has been completed. During the year 2022-23 till date, NDMA has completed training for 6 airports and 3 seaport (Jaipur, Lucknow, Raipur, Guwahati, Ahmadabad, MOPA-New Goa Airports and JNPT, Chennai, Kolkata).



4.11 Review of NDRF SOP and AERB documents:

- NDMA received a SOP from NDRF for mock exercises at NPP site. This SOP document was reviewed and review comments were prepared. After approval of the comments, it was sent to IG NDRF on 12th October, 2022. AERB Safety Code on “Management of Nuclear and Radiological Emergencies” (AERB/NFR/SC/NRE) received in NDMA for comments. Comments were prepared and sent to AERB after approval from NDMA competent authority. Subsequently, responses were reviewed for acceptance by NDMA.

4.12 NDMA’s action plan and preparedness in Nuclear Power Plant accident:

- A meeting was conducted through video conferencing with the District Authorities/DM/DC of the districts currently having operating NPPs to discuss their preparedness to deal with any nuclear emergency in their district and obtain feedback. As per requirement of MHA, a draft presentation was prepared highlighting

the role and responsibilities of NDMA during off-site emergency of NPP. The PPT was finalized by NDMA and subsequently, combined with NDRF PPT for single presentation. This was presented before Hon’ble Home Minister on 17th April, 2022 by Member Secretary, NDMA and DG NDRF in presence of Secretary MHA, Secretary AEC, CMD NPCIL. A total of 15 directions/recommendations received from Hon’ble Home Minister. ATR related to NDMA was presented to all stakeholders (DAE, NPCIL, AERB, NDRF and MHA) and MOM was circulated for preparing harmonized & consolidated ATR. Based on the inputs from all stakeholders, combined ATR was prepared by NDMA and after approval, sent it to MHA on 5th July 2022. Towards submission of updates about the ATRs related to NDMA, Secretary (I/C) NDMA, Members, NDMA visited KKNPP, KAPS NPP, MAPS NPP, TAPS NPP and KGS NPP site and reviewed off-site emergency preparedness of respective sites and held meetings at site with NPCIL and AERB. Updated ATR was sent to MHA on 4th October 2022.



4.13 Off-site and Site emergency exercises for Nuclear Power Plants (NPP):

- NPCIL has devised new methodologies (Table-top, integrated command, control & response (ICCR) and full-fledged exercise involving public) for conducting OSEEs for NPPs. NDMA team participated and observed the site emergency exercises and off-site emergency exercises on 2nd September and 11th October, 2022 respectively.



4.14 Review and action plan with respect to repeated flooding incident at KGS site and effect on emergency preparedness:

- Based on AERB safety committee directives, a note was received from Station Director of Kaiga Generating Station (KGS) highlighting water logging/flooding incident on two occasions, during 2019 and 2021 on the surrounding areas connecting NPP and residential colony/neighborhoods localities. This note was reviewed with respect to proposed action plan like, updating DDMP, alternate evacuation routes, emergency communication facilities, shelters and disruption of food and other essential supplies. Based on review comments, NPCIL submitted responses indicating both short term and long term measures to take care such kind of flooding in future. Based on the responses, site verification was carried out on 10th September, 2022.



4.15 Review of Construction of secondary level CBRN Medical Management Centres:

- Construction of CBRN Medical Management Centres at designated urban/semi-urban/rural hospitals under the central sector scheme "Health Sector Disaster Preparedness and Response" have been initiated by MHA. As per the approved scheme, the secondary level centres (10 Nos) would be set up in identified hospitals covered under off-site plans of Nuclear Power Plants and in cities vulnerable to terrorism. The user requirements, specifications, structural plans and technical specification were reviewed and comments were forwarded for implementation. Meeting was held with Secretary (Health), Union Ministry of Health and Family Welfare on 3rd March 2023 for finalization of 10 Secondary and 2 tertiary levels CBRN hospital under the central sector scheme.

4.16 SOP-6 up-dating and presentation to MHA

- This confidential SOP on "Management of Nuclear/Radiological Emergencies has been prepared by the Group of officers (Group-6) after due consultation with the all stake holders. After incorporating all comments, this document was submitted to MHA in August 2021. Subsequently, a meeting was held in February 2022 at MHA for harmonization of updated SOP-6 with all other SOPs under Group-6.

4.17 Preparation and finalization of SOP-24

- SOP-24 is finalized and review of comments is pending. This will be taken up based on further directives of MHA.

4.18 Procurement of HAZMAT Vehicle:

- HAZMAT vehicle technical specification

finalization for G-20 summit was required on urgent basis by NDRF. After four combined meetings, purchase order for 4 vehicles is finalized by NDRF.

B. Earthquake & Tsunami

4.19 Development of Teaching Resource Material for Under Graduate Courses in Engineering/ Architecture College for Technical Education

- About 58.6% of India's landmass is vulnerable to the threat of moderate to severe seismic shaking and 80% of Indian population resides in these areas. It is evident from the past earthquakes that buildings sustained damages if not designed properly. In most of the cases, it is found that a large number of existing buildings do not have earthquake resistant features specified in BIS codes. Non-availability of resource material in course curriculum at the undergraduate level in Engineering/ Architecture Colleges is one of the contributing factors in poor design or construction of built environment. Hence, there is a need to prepare course curriculum for undergraduate in the discipline of Civil Engineering/ Architecture.
- The project has been awarded to IIT Bombay. The scope of the project is to develop teaching resource material on five identified subjects i.e. Structure Dynamics and Earthquake Engineering (Core subject); Earthquake Geotechnical Engineering (Elective Subject); Earthquake Resistant Design of RC Structures (Elective Subject); Earthquake Resistant Design of Steel Structures (Elective Subject); and Design Studio- Earthquake Resistant Structural Configuration (Core subject). Thereafter Pilot testing of these courses through one full semester course in engineering and architecture college preferably located in seismic zone IV & V. Faculty members from engineering institutions with relatively higher ranks based on the NIRF ranking trained on the identified subjects through Training of Trainers (ToT) Workshops. In future, the trained faculty members would be expected to provide further training to faculty members of other engineering and architecture colleges. The resource materials have been revised based on the feedback received from the pilot offering and ToT Workshop.



Training of Trainers (ToT) Workshop on Earthquake Resistant Design of RC Structures conducted at IIT Madras



Training of Trainers (ToT) Workshop on Architecture Design Studio- Earthquake Resistant Structural Configuration conducted at Guru Gobind Singh Indraprastha University Dwarka, New Delhi



Training of Trainers (ToT) Workshop on Structure Dynamics and Earthquake Engineering conducted at IIT Bombay

4.20 Development of Earthquake Disaster Risk Index Phase II

- Rapid urbanization of Indian cities in the last few decades has increased the demand on housing sector, imposing pressure on construction industry to cater to this demand. More often, proper planning of cities and its infrastructure are not carried out, to meet this demand in less time. This has led to uneven growth of low rise-to-midrise buildings in Tier II cities and midrise-to-high rise buildings in Tier I cities, jeopardising safety of property and life, during disasters. Therefore, there is an urgent need to assess the seismic risk of buildings located in high seismic regions of India, to help towards disaster mitigation of cities reasonably well.
- The main objective of the project is to assess the earthquake risk in cities of India, which will help mitigate negative consequences, prepare, and respond to the next event. The risk

index obtained from the study will be mainly the combination of hazard, vulnerability, and exposure to the city. It will provide information to each city of their impending risk involved, and its consequences, help to reduce the social and economic consequences due to an earthquake and give an Inter-comparison of the risk among the cities as well as guide government agencies for prioritizing disaster preparedness and response measures in the more vulnerable area of the city. NDMA has completed the phase I of the project for 50 cities in 2019 and Phase II of the project is in progress which targets next 16 cities. The project has been awarded to MNIT Jaipur.

- The project includes the evaluation of earthquake disaster risk index of cities in terms of a) vulnerability of buildings b) expected level of damage to the buildings c) corresponding expected loss of life and property, as well as preparation of Individual city report with list of major contributing

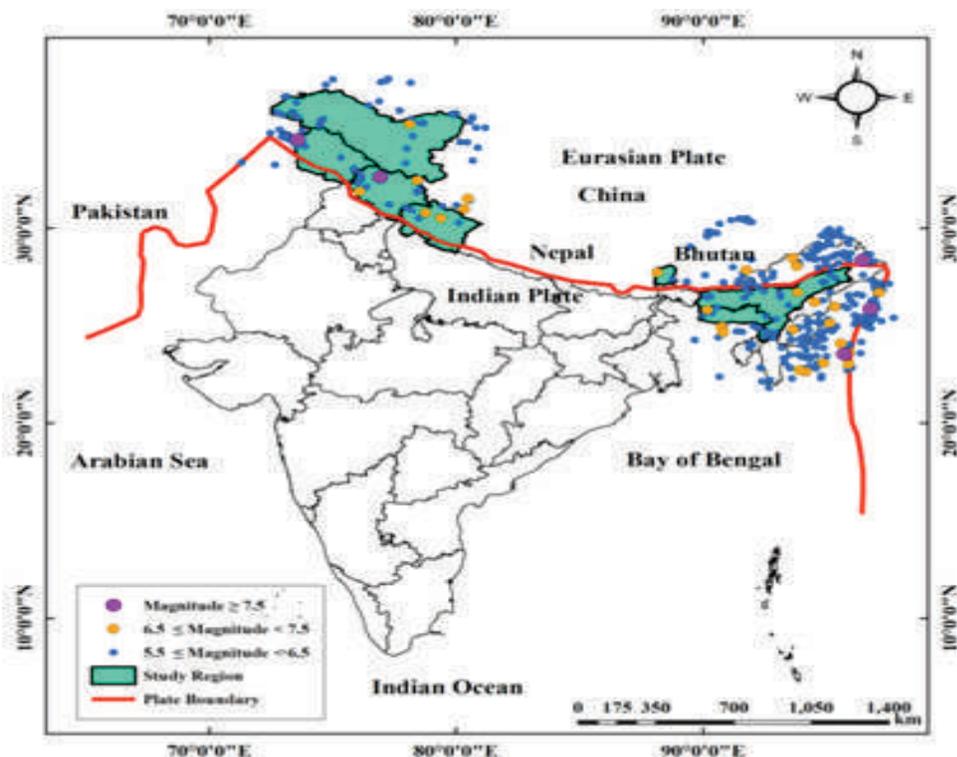
factors to the overall risk, along with a separate report for the policy maker.

4.21 Compendium of Traditional Earthquake Resilient Construction Practices for Knowledge Sharing and Disaster Risk Reduction: Promotion of Traditional Construction Practices

- Many past earthquakes resulted in significant property loss and human lives in the Himalayan region. As a result, communities residing in this region swiftly grasped the fundamental premise of earthquake safety, which states that structural safety is the key to avoiding loss of property and human lives in a seismogenic event. The traditional construction practices, especially in the Himalayan region, are unique as they primarily utilise the locally available material which is very cost effective and eco-friendly. The effectiveness of these traditional

technologies has been clearly brought out during recent earthquake disasters. The local traditional construction practices had adapted earthquake-resistant technologies, which are now being lost due to the induction of modern materials and construction techniques in these areas without addressing the seismic safety of modern constructions.

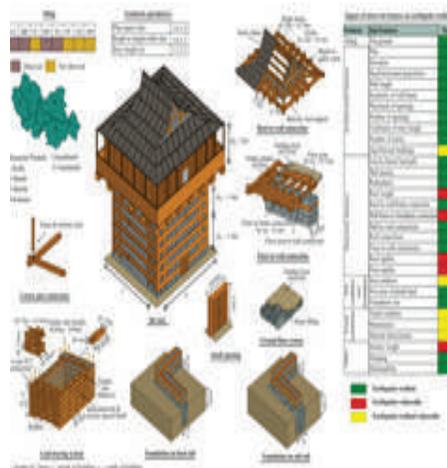
- The scope of the project is to identify and document the traditional building types in the Himalayan region and develop their structural system classification scheme as well as identify the earthquake-resilient and vulnerable features in the traditional buildings and suggest the appropriate safety measures to reduce their seismic vulnerability. The project was awarded to IIT Ropar in a consortium with IIT Roorkee and AEC Guwahati.



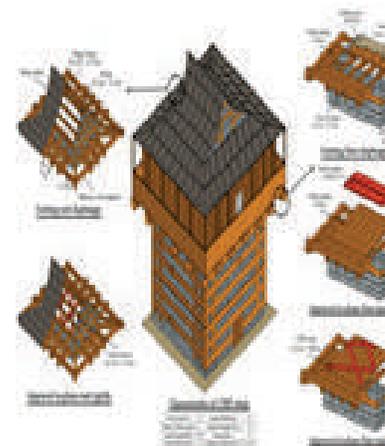
4.22 The existing literature suggests the existence of multiple traditional earthquake-resilient building practices in the northwestern Himalayas within India. These traditional building practices mainly include the timber-laced stone masonry without mortar, indigenously known as ‘Koti-banal’ or ‘Kath-kunni’ (Rautela et al. 2009a, Rautela et al. 2009b), the timber frame with dry stone walls indigenously known as ‘Thathara’ (Rahul et al. 2013), the timber braced frame in filled with brick/stone masonry laid in mud mortar indigenously known as ‘Dhajji-dewari’ (Hicyilmaz et al. 2011), and the timber-laced brick/stone masonry laid in mud mortar indigenously known as ‘Taq’ (Dhandhapani et al. 2019). Similarly, northeast India’s traditional seismically-resilient building practice mainly includes the timber frame filled in with ‘Ekra’ reeds, indigenously known as ‘Assam-type’ or ‘Ekra’ (Kaushik and Babu2009) housing. Institute team conducted the field visits to document these traditional building typologies and based on the assessment, safety measure to improve the performance of these buildings have been suggested.



Kath-kunni Construction



Key Features

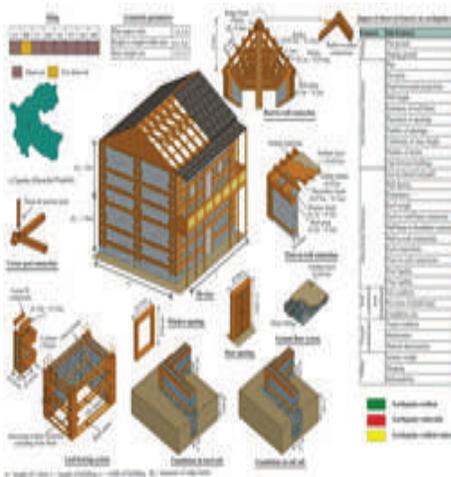


Suggested Safety Measures

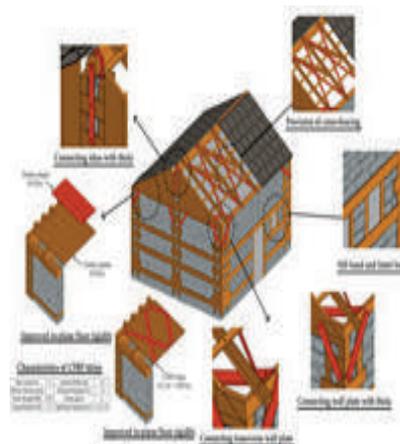
Kath-kunni construction is one of the oldest forms of traditional construction widely seen in Shimla, Kullu, Kinnaur, and Mandi districts in Himachal Pradesh and Uttarkashi in the state of Uttarakhand.



Thathara Construction



Key Features

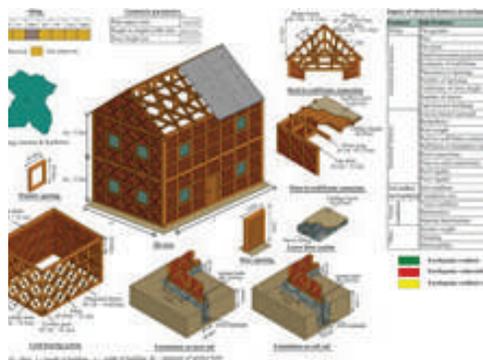


Suggested Safety Measures

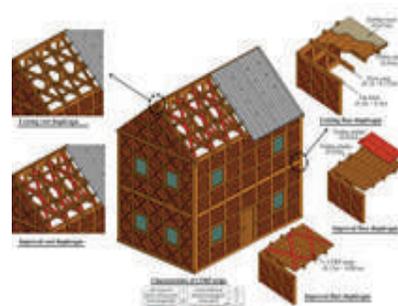
Thathara traditional construction practice is one of the most prevalent traditional building typologies observed in the 'Chamba' district of Himachal Pradesh, India.



Dhajji-Dewari Construction



Key Features

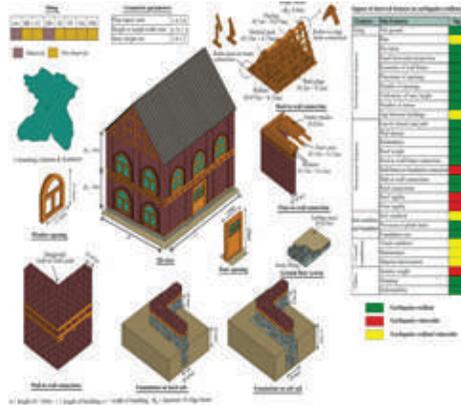


Suggested Safety Measures

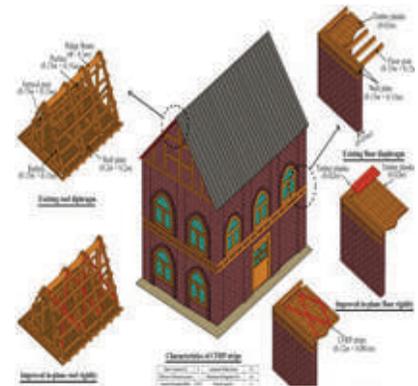
The term Dhajji-Dewari is derived from the Persian language meaning 'Patchwork Quilt Wall' and it is a traditional building practice of the Western Himalayan region. In particular, these buildings can be seen in the Union Territory of Jammu and Kashmir and a few buildings also in the city of Shimla and nearby areas in the State of Himachal Pradesh, India



Taq Construction



Key Features

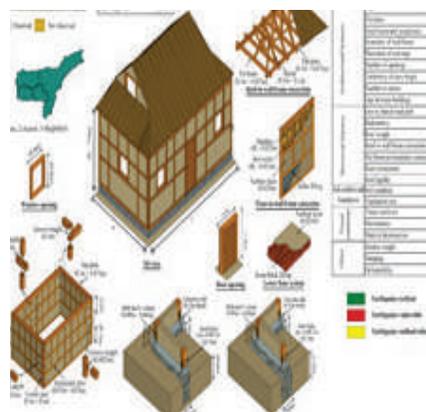


Suggested Safety Measures

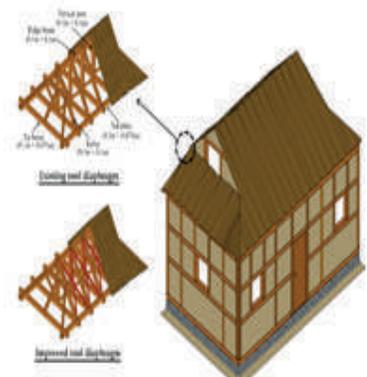
Taq is a traditional timber-laced masonry construction practice prevalent in Western Himalayas in Kashmir Valley around Srinagar, in the Union Territory of Jammu and Kashmir, India



Assam Construction



Key Features



Suggested Safety Measures

Assam-type of building construction is one of the oldest forms of traditional construction widely seen in the North-eastern States of Assam, Sikkim and Meghalaya

4.23 Bihar, Uttar Pradesh and Uttarakhand earthquake Scenario Development for Awareness Campaign.

NDMA has launched a project to develop the two scientific scenarios by revising the 1934-Bihar Nepal earthquake and the 1991-Uttarkashi earthquake. Developing scenario assessment aims to provide an improved understanding of the extent of affected areas due to these earthquakes and to anticipate damages/losses both on human lives, lifeline buildings and on the overall built environment. Finally, the outcome of the project will be beneficial for State machineries and communities (as first responders) in responding effectively to a disaster situation similar to these past earthquakes.

The total cost of the Project is ₹ 302 Lakh. The main objectives of the scheme are as under:

- Development of two scientific earthquake scenarios by revisiting 1934 Bihar Nepal earthquake and 1991 Uttarkashi earthquake: based on color coded risk maps including population exposure, expected damage and losses.
- Facilitation of the outcome to the study to the policymakers of the States for better earthquake risk mitigation strategies
- State level workshop to facilitate the outcome of the study
- District level workshops in concerned States to sensitize the district officials

The implementing agency i.e. IIT Roorkee has submitted the report of stage-1 as per MoU and is progressing toward stage 2 of the project. Stage-1 report includes the risk assessment of the Bihar and Uttarakhand.

4.24 Pilot project to improve Earthquake Resilience of Masonry Lifeline Structures and upcoming constructions.

Earthquakes in the recent past in India caused widespread damage, resulting in the loss of lives and property especially unreinforced masonry structure. Unreinforced masonry (URM) buildings make up a significant portion of the buildings across the globe. It is a well-known fact that the majority of these structures have not been designed for seismic loads and the walls of these building structures were designed to resist gravity loads principally. Therefore, moderate to strong earthquakes can produce devastating impacts in cities or villages resulting in a massive death toll and a huge loss to property and national infrastructure. Hence retrofitting of these structures and enhancing their strength is essential. There are a number of techniques that have been developed and executed for the improvement of the seismic behavior of these structures.

NDMA has undertaken a pilot project to improve the earthquake resilience of lifelines structure with States of Tripura, Uttarakhand and NDMC Delhi which include the retrofitting of selected masonry lifeline buildings, construction of technology demonstration unit and capacity building of engineer, bar benders, and carpenters. The total cost of the Project is ₹ 950 Lakh.

The main objectives of the Scheme are: -

- Structural safety audit of selected lifeline masonry buildings
- Retrofitting of selected lifeline masonry buildings
- Construction of Technology Demonstration Units to showcase the earthquake-resistant technology (one each in the project States/UT).

- Capacity Building-Training of engineers, masons, bar-benders, and artisans

Uttarakhand Government has submitted the structural safety audit and DPR which was vetted by the project monitoring committee and now tendering is in process for the structure.

Tripura Government has completed the retrofitting work as per the DPR and they have submitted the structural safety report.

NDMC Delhi has revised version of the DPR which is in the process of vetting.

C. Landslide & Avalanches

4.25 Landslide Risk Mitigation Scheme

- NDMA has launched Landslide Risk Mitigation Scheme (LRMS) to provide central assistance to vulnerable States/UTs for disaster preparedness and build their capacity to take up other Landslide Mitigation Projects by the States/

UTs in future. NDMA conceptualized and launched LRMS under Improving Disaster Risk Governance of SDMA's / DDMA's in July, 2019. The total cost of the project is INR 43,9174000. Scheme covering 21 States and 2 UTs taken on pilot scale covering 10 States in Phase 1 and 11 States & 2 UTs in Phase 2. Four major outcomes of the scheme are Landslide Mitigation, Real Time Monitoring, Awareness programmes and Capacity Building & Training. A Template for preparation of DPR was prepared by NDMA and circulated to all vulnerable States / UTs.

- Three States of Mizoram, Nagaland and Sikkim completed landslide treatment/mitigation and Uttarakhand is in process to do the treatment at the vulnerable site. State Level Workshops were also organized in Mizoram, Nagaland and Sikkim.





4.26 Creation, Periodic Review/ Updation of Building codes on Landslide Resilient Features

- NDMA initiated a project to support the Bureau of Indian Standards (BIS) in preparation of new Guidelines / Codes / Standards on landslides. For landslide two committees of BIS i.e., CED 48 (Rock Mechanics Sectional) & CED 56 (Hill Area Development Engineering Sectional) were formed for preparation of Guidelines / codes / standards. Guidelines will be finalised by NDMA & BIS and then relevant Codes / Standard will be developed by BIS. Developed document will be circulated among all the concerned Ministries, Departments, States/UTs and other stakeholders for use. MoU

was signed for preparation of “The Guidelines for Determination of Rock Mass Shear Strength in Bedrock of Landslide Affected Slopes” in July 2020 under BIS Committee (CED 48) with IIT Roorkee and BIS. Another MoU signed in July 2021 for preparation of two more guidelines under BIS Committee (CED 56) on “Guidelines for micropiles for Mitigation of Landslides or Slope Stabilization” and “Safety and Mitigation Measures for the Buildings and Infrastructures in Landslide Affected Areas”. “The Guidelines for Determination of Rock Mass Shear Strength” has been finalized after the review meeting with BIS and the final draft has been submitted to BIS for approval.

D. Geographic Information System (GIS)

4.27 Project-1. Development of Cloud Based Application Information System Project

- Development of Cloud based GIS portals and operation dashboard on pan India

1.1 Developed COVID-19 Operational Dashboard:

- NDMA has developed a GIS portal in managing pandemic situation Covid19 occurred in the year 2020. The COVID-19 GIS Portal provides a holistic picture of the growing situation of this pandemic in India by giving daily status and regular periodic updates of cases, surveillance status, infrastructure availability, hotspots and rahat camps at all three levels in the country, i.e. national, state and district. The Geo-enabled Dashboard developed for the public, SDMAs and other stakeholders to avail information related to Covid-19 cases. The integration of the available data through Geographic Information System (GIS) at these three levels makes it an interactive platform wherein data and information are available in a visually appealing format. The COVID-19 GIS Portal is updating daily and collated data from different agency till date are available.

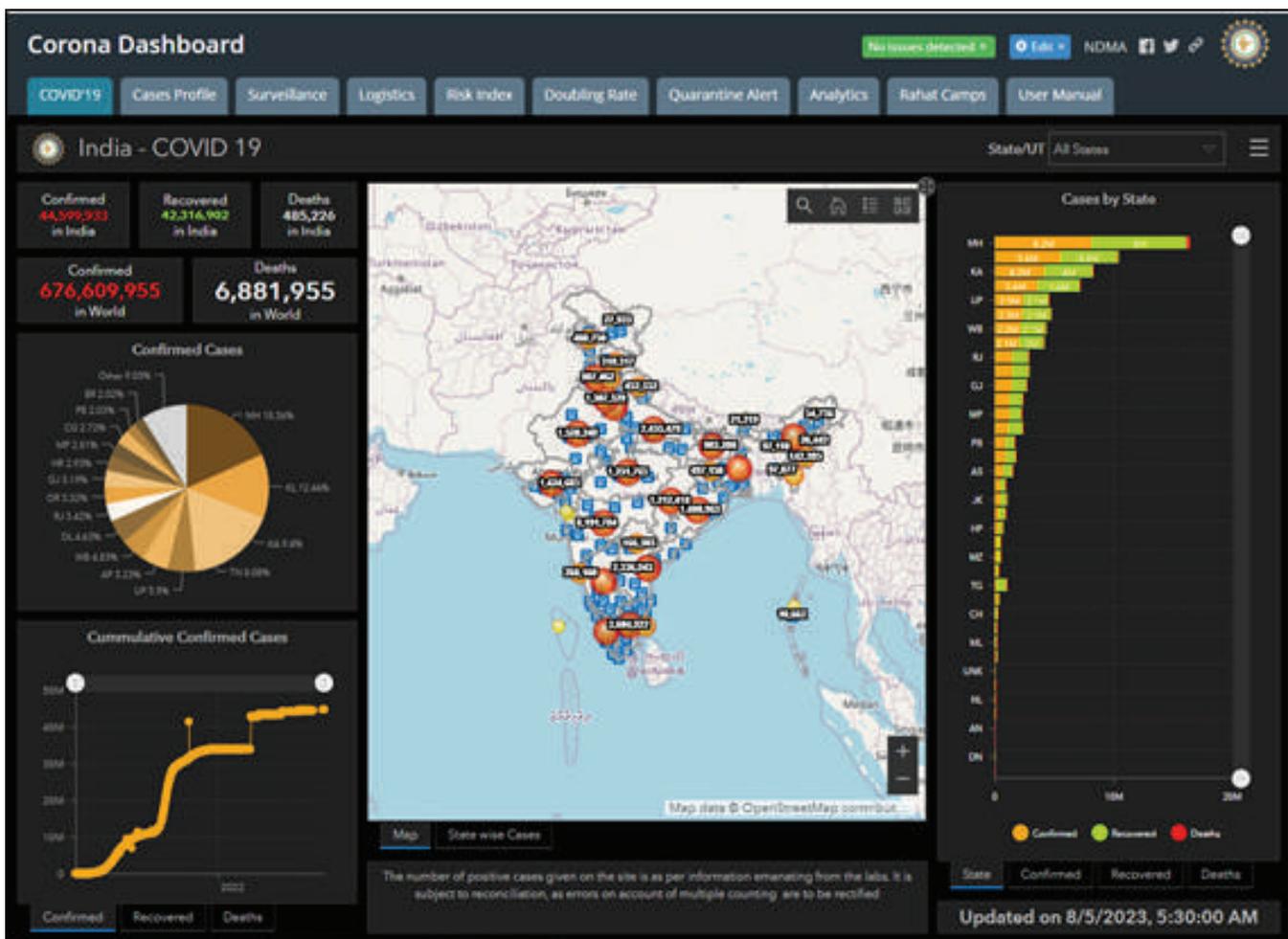


Figure 1: Representing the Covid 19 Dashboard

1.2 Developed Oxygen Operational Dashboard

- The oxygen dashboard has been developed by the NDMA in order to monitor the availability of oxygen cylinders in various hospitals in different states of India. The hospital users are provided with the login id and passwords in order to daily update the availability status of numbers of oxygen cylinders in the hospitals. Dashboard contains the database of all the hospitals with their addresses and geo-location. The availability of the oxygen cylinder is represented in the form of their storage capacity in Kiloliters and is categorized in Liquid oxygen tank, D type oxygen cylinders and B type oxygen cylinders. The Portal is updating daily and collated data from different agency till date are available.

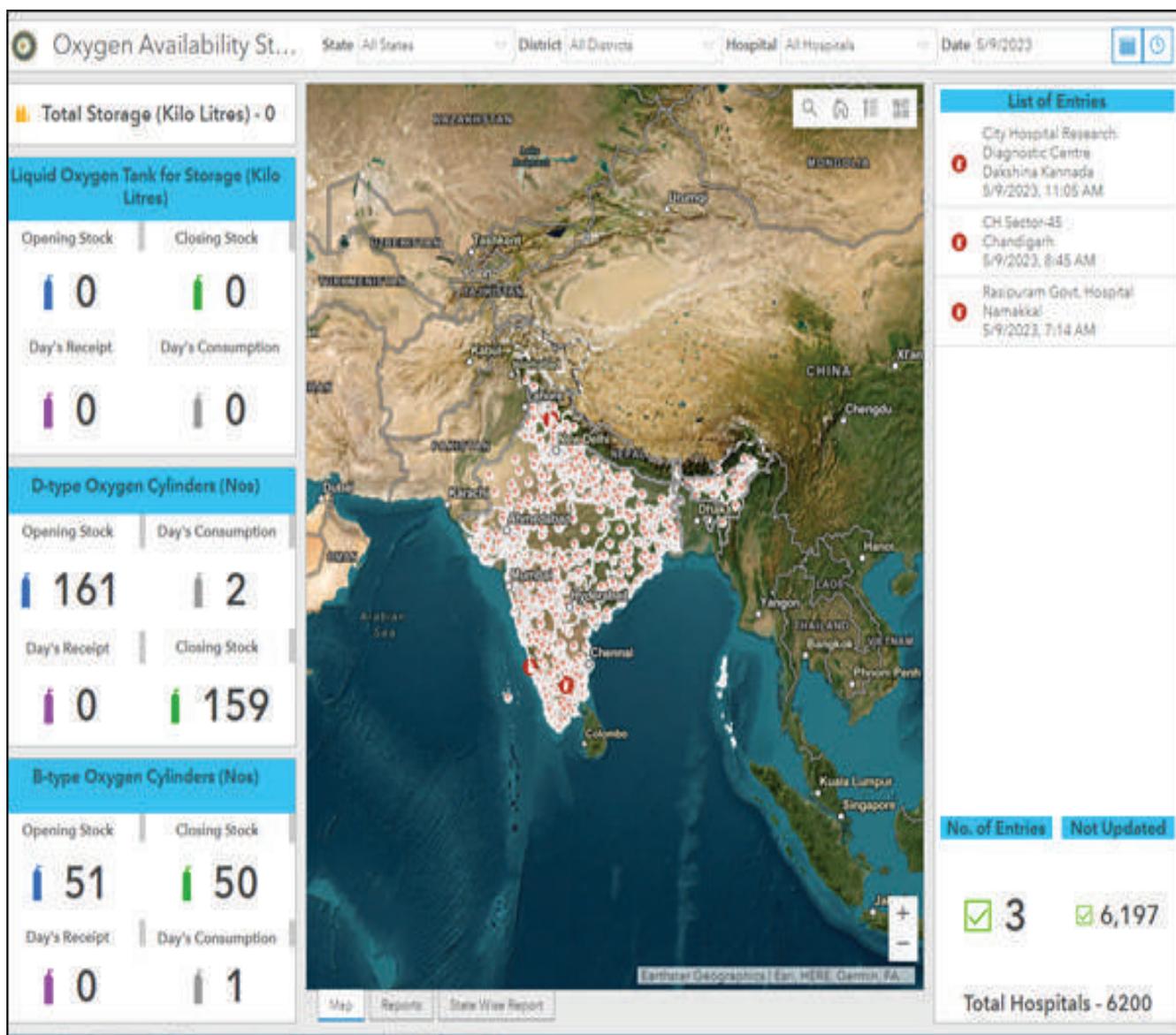


Figure 2: Representing the oxygen dashboard

1.3 Hazard Information System Portal

- Hazard management, assessment and prediction are developed for the prevention and mitigation of geological hazards. Data sets related to geological hazard prevention has been collected from various states, and also integrated the layers of historical data, infrastructure and utilities for hazard specific geo-databases like Earthquake, Flood, Chemical, Landslide, Cyclone and Wind hazard, Forest fire, Tsunami, Nuclear, Lightening and Multi hazard. The hazards vulnerability maps of Pan India.

1.3.1 Hazards wise Information

- Earthquake Zone/Fault Line/ Earthquake Location
- Landslide
- Flood
- Cyclone and Wind Hazard
- Forest Fire
- Tsunami
- Nuclear
- Chemical Hazards / MAH Units
- NCRMP Shelter Location
- Kendriya Bhandar Location
- Petroleum exploration Safety organization (PESO) Location
- Apda Mitra Volunteer Geolocation

1.3.2 Instruments and Infrastructure

- Hospitals Location (Up to PHC and Private Hospitals)
- Diagnostic centers

- FCI locations
- Agricultural Mandi
- Post Office
- Power Stations
- Chemical Refineries

1.3.3 Inventory

- Historical Landslide Point
- GLOF Locations
- Flood Events
- Earthquake epicenters
- MAH Units
- Forest Fire points
- NDRF Location
- Cyclone Shelter
- States/ District HQ
- Fire Station
- Town/Village level Population data
- Administrative boundaries (States/ Districts/ Sub District/Village)

1.3.4 Other Sources (e.g. data.gov.in)

- States/ District HQ
- Fire Station
- Town/Village level population data
- Heritage Buildings
- Other Utilities

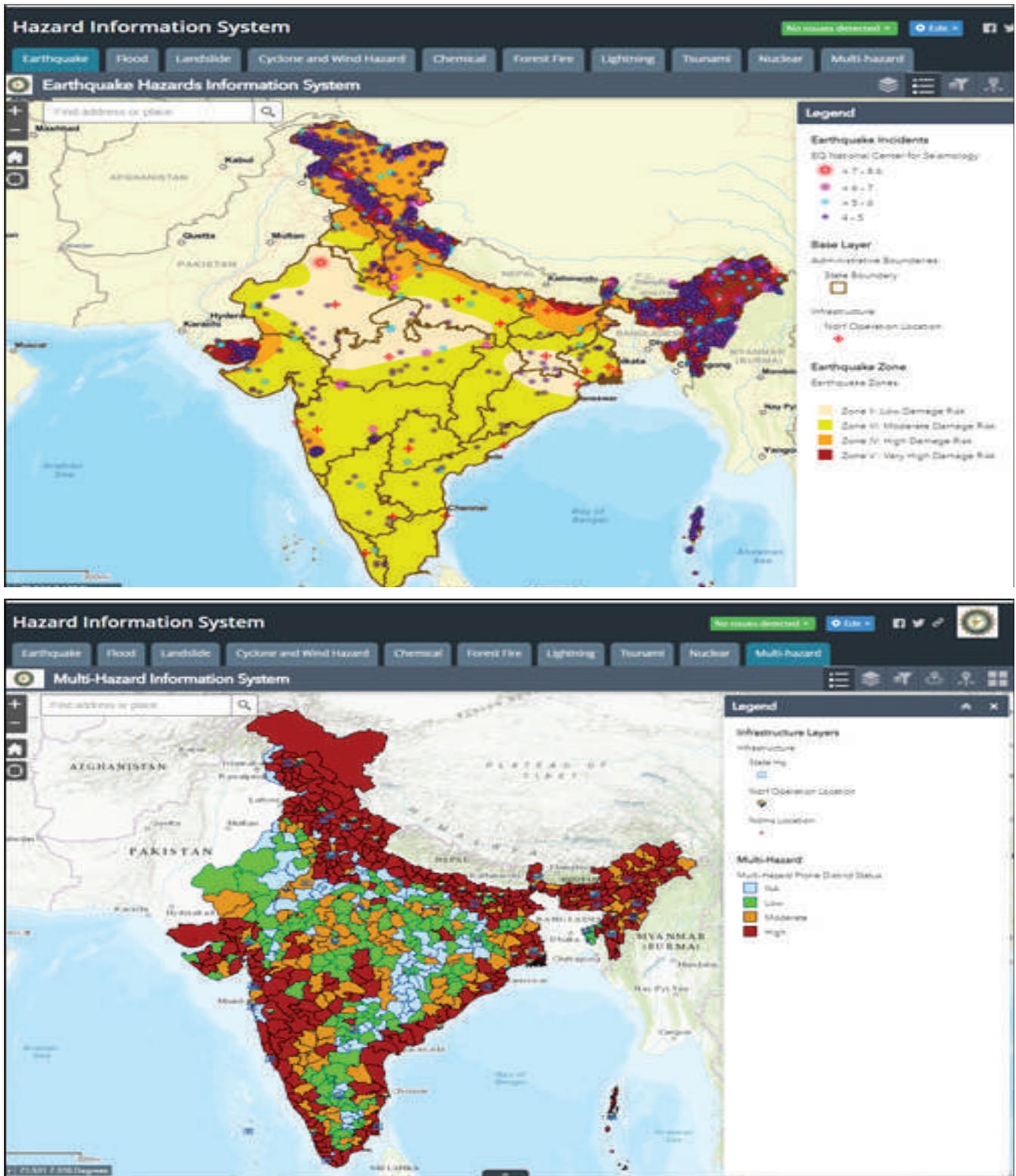


Figure 3: These figures represent the Cyclone and wind hazard and Earthquake tabs (map of pan India) of the Hazard Information System

4.28 Project- 2. Capacity Building of Stakeholders on GIS in Disaster Risk Reduction Project:

- 2.1 Organize training on “application of GIS in Disaster risk Reduction” with collaboration of NESAC : NDMA has been sponsoring to organize the training programs to create awareness among all the SDMA’s and stakeholders / disaster managers on the Application of Geographic Information System in Disaster Risk Reduction in which two days and five days training programs are conducted by the North Eastern Space Applications Centre, Umiam. Training is being conducted which involves a number of participants of various States/ UTs so that they can be made aware about the GIS technology and they are able to use this technology in making decisions at the time of occurrence of geological disaster or pandemic. Total 03 training programmes have been conducted during 2022-2023 and about 150 professionals have been trained from all SDMAs, Ministries and other stakeholders. The project is completed in March 2023.



Picture: Glimpse of the lectures and discussion during the two days training program

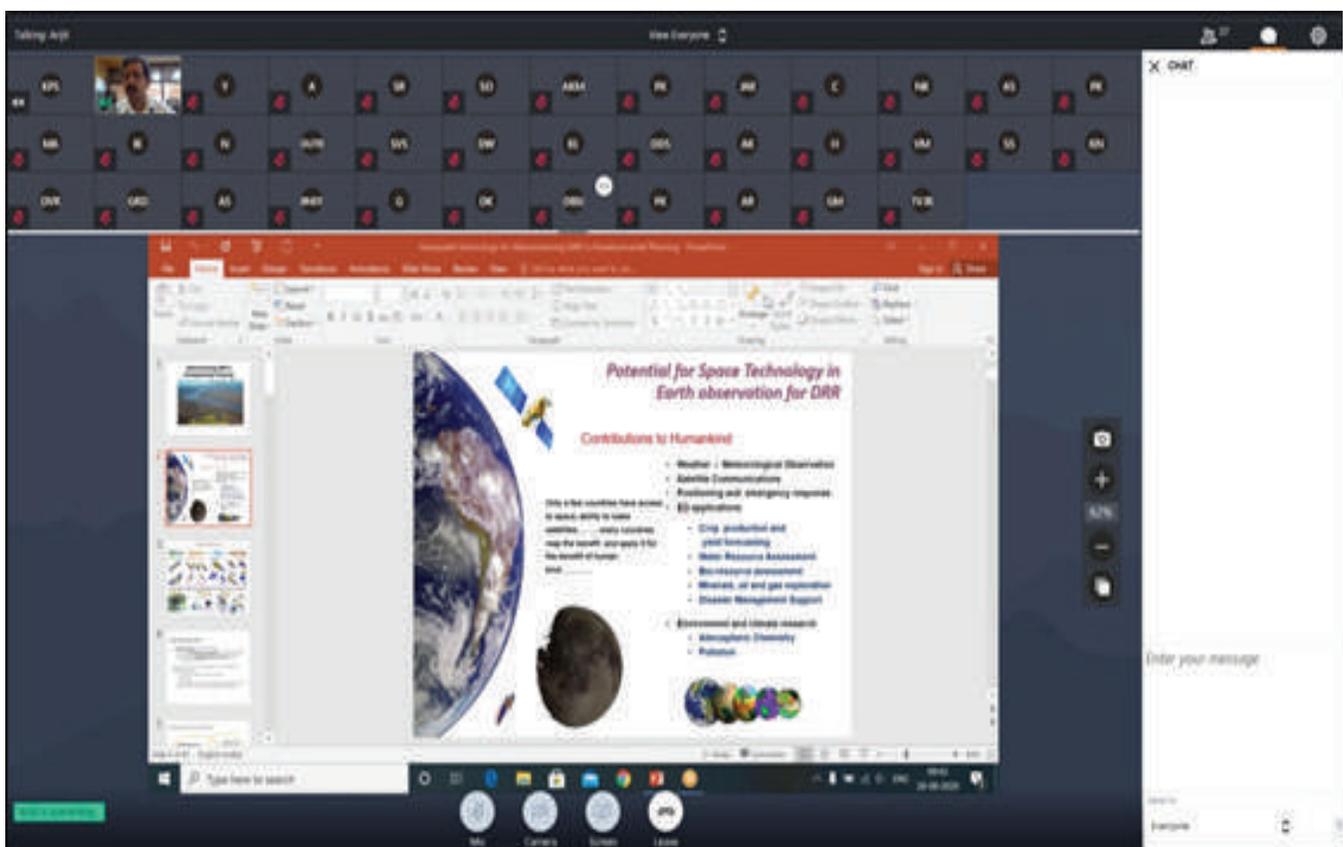


Picture: Photograph of valedictory session of the two days training program



Picture: Some of the photographs showing the lectures, discussion, field visit and hand on training session dursing the five days training program

- 2.2. Organize training on “Application of GIS in Disaster Risk Reduction” with collaboration of IIRS : NDMA has been sponsoring to organize the training programs to create awareness among all the SDMA’s and stakeholders/ disaster managers on the Application of Geographic Information System in Disaster Risk Reduction, in which five days training conducted by the Indian Institute of Remote Sensing, Dehradun. Training involves a number of participants of various States so that they can be made aware about the GIS technology and they are able to use this technology in making decisions at the time of occurrence of geological disaster or pandemic. Total 01 training programme has been conducted during 2022-2023 and about 50 professionals have been trained from all SDMAs, Ministries and other stakeholders. The project is completed in March 2023.



IIRS Dehradun presentation during the training program

CHAPTER: V

CAPACITY DEVELOPMENT

Introduction

5.1 A strategic approach to capacity development can be addressed effectively only with the active and enthusiastic participation of all the stakeholders. This process comprises awareness generation, education, training, research and development (R&D), etc. It further addresses putting in place appropriate institutional framework, management systems and allocation of resources for efficient prevention and handling of disasters.

5.2 The approach to capacity development includes:

- According priority to training for developing community based Disaster Risk Reduction (DRR) systems for their specific needs in view of the regional diversities and multi-hazard vulnerabilities.
- Conceptualization of community based DRR systems at the national level through a consultative process involving the States and other stakeholders including local level authorities in charge of implementation.
- Identification of knowledge-based institutions with proven performance.
- Promotion of international and regional cooperation.
- Adoption of traditional and global best practices and technologies.

- Laying emphasis on table-top exercises, simulations, mock drills and development of skills to test the plans.
- Capacity analysis of different disaster response groups at State/District/ local levels.

Up-scaling of Aapda Mitra Scheme

5.3 Based on the success of pilot scheme as well as appreciation and request from all the States/UTs, NDMA is implementing Up-scaling Aapda Mitra Scheme at a total cost of Rs. 369.40 Cr. in 350 highly vulnerable districts prone to floods, landslides, cyclone and earthquakes in order to train 100000 community volunteers by March 2024.

5.4 The Scheme is being funded from Preparedness and Capacity Building Funding Window of National Disaster Response Fund (NDRF).

Components:

- a. Translation and Printing of Training Modules, I - Card and Certificate
- b. Training of volunteers
- c. Purchase of Emergency Response Kit (ERK) to be distributed among successfully trained volunteers and coverage of death / permanent disablement / hospitalization for all trained volunteers by the Agency decided by NDMA

- d. Emergency Essential Resource Reserve (EERR) at District/Block level
- e. Grant for Repair & Maintenance of Equipment

5.5 All trained volunteers will be provided an ERK including an insurance covering death /permanent disablement /hospitalization. In all 350 Districts, an EERR will be distributed.

5.6 Status of the Scheme:

- a. The Scheme has been formally launched by the Hon'ble Home Minister by releasing the Scheme Document & the Handbook for Aapda Mitra during the 17th Formation Day of NDMA on 28th September, 2021.
- b. All States/UTs except Telangana have signed MoU with NDMA.
- c. 72282 volunteers were trained by March, 2023.
- d. NDMA in collaboration with Karnataka State Natural Disaster Monitoring Centre (KSNDMC) developed Management Information System (MIS) and Mobile Application, which was launched during the National level Workshop-cum-Training Workshop of MIS and Mobile App for Up-scaling of Aapda Mitra Scheme. During the workshop, hands-on-training was also given to all Nodal Officers of the Scheme. During this workshop, insurance product specially designed for Aapda Mitra volunteers was also launched.
- e. Out of Rs. 369.41 Cr. provisioned for the Scheme, Rs. 288.02 Cr. has been spent under the Project. The expenditure

includes 1st installment (10%) to 34 States/UTs, 2nd installment (50%) to 33 States/UTs, and 3rd installment (40%) to 15 States/UTs and other expenditure at NDMA.

5.7 Review of Scheme:

- a. A workshop titled Mid-Term Review & Documentation of Best Practices of Aapda Mitra Scheme was held from 8th – 9th December, 2022 at Guwahati, Assam to assess the program implementation progress, review the challenges, share lessons learnt and success stories by Aapda Mitra Volunteers. The workshop also identified gaps, in the implementation of the Scheme so far with a view to plug the gaps in the remaining implementation of the Scheme.
- b. Regular review meetings with States/UTs are being held. In addition, internal review meetings also take place on regular basis.

Capacity Building of IAS/Central Civil Services Officers in Disaster Management at CDM, LBSNAA

5.8 NDMA has signed MoU with Centre for Disaster Management, Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie in February, 2022 to implement the Project on Capacity Building of IAS/Central Civil Services Officers in Disaster Management at a total outlay of Rs.3.75 Cr. for five years (2021-22 to 2025-26) to train 950 officers per year at the CDM, LBSNAA, Mussoorie.

5.9 The Project aims to sensitize to the existing systems of disaster management at the various executive and policy making levels

of the government; to undertake case studies; and to develop knowledge repository on disaster management. Physical and financial status are as under:

Physical Achievement	Financial Achievement
1057 Officers were trained. So far, 1545 Officers have been trained under the project.	Rs. 75.00 lakh

Meeting of Joint Monitoring Committee to review the implementation of National Disaster Management Guidelines on School Safety Policy

5.10 13th Meeting of the Joint Monitoring Committee (JMC) and 14th Meeting of the JMC were held under the chairmanship of Shri Kunal Satyarthi, Joint Secretary, NDMA virtually on 20.04.2022 and 23.3.2023 respectively to review the efforts taken by States and Stakeholders on implementation of the National Disaster Management Guidelines on School Safety Policy-2016.

Interaction with Participants of Advanced Professional Programme in Public Administration, IIPA, New Delhi

5.11 An interactive meeting between 65 senior officers of Central Government (the participants of Advanced Professional Programme in Public Administration conducted by Indian Institute of Public Administration, New Delhi) and Members & Senior Officers of NDMA was held on 19.10.2022 at NDMA Bhawan, New Delhi.

5.12 The interaction aimed to have a better understanding of Disaster Management in India by participants. NDMA officers shared insights and threw light on the role of NDMA and authorities concerned to enhance skills and smooth coordination

with all stakeholders for better governance.

Signing of MoU with Turkmenistan

5.13 An MoU between India and Turkmenistan on cooperation in the field of Disaster Risk Reduction & Management was signed for indefinite time during a Virtual Signing Ceremony on 2.4.2022.

Inter-Ministerial Committee Meeting with SAARC Disaster Management Center (IU)

5.14 6th Inter-Ministerial Committee Meeting and 7th Inter-Ministerial Committee Meeting were held under the chairmanship of Shri Kamal Kishore, Member & Secretary In-Charge, NDMA on 11.04.2022 and 28.02.2023 respectively in NDMA to discuss Activity Plan and the modalities for efficient functioning of SAARC Disaster Management Center (IU).

International Meetings/ Conferences / Workshops

5.15 4th Meeting of BRICS Joint Task Force (JTF) was hosted by China on 29.04.2022 virtually. The meeting was attended by Shri Kunal Satyarthi, Joint Secretary, NDMA; Shri Nawal Prakash, Joint Advisor, NDMA; and a representative from MEA. India put forth its objection to the Chinese proposal on invitation to certain non-member countries and international organizations during the upcoming events under BRICS.

- 5.16. 3rd Meeting of BRICS Ministers for Disaster Management was hosted by China on 23.09.2022. Shri Rajendra Singh, Member, NDMA; Shri Kunal Satyarthi, Joint Secretary, NDMA; Lt. Col. Surya Prakash Pandey, Joint Advisor, NDMA; Shri Ramesh Kumar Mishra, Under Secretary, NDMA; and Shri Utkarsh Pandey, Consultant (International Cooperation) attended the meeting virtually.
- 5.17 1st Meeting of BIMSTEC Expert Group on Disaster Management was held on 12.05.2022 virtually under the chairmanship of India. Seven countries attended the meeting. Workable plan/activities under BIMSTEC were finalized.
- 5.18 1st Meeting of Working Group on Disaster Risk Management (WGDRM) of IORA was held under the chairmanship of India on 09.06.2022. Twelve countries participated. 13 activities based on the second IORA Action Plan has finalized and sent to IORA Secretariat. Thereafter, activities based on 2nd Action Plan were finalized and shared with IORA Secretariat.
- 5.19 Lt. Col. Surya Prakash Pandey, Joint Advisor, NDMA attended meeting on Guidelines for QUAD Partnership on Humanitarian Assistance and Disaster Relief (HADR) in the Indo-Pacific region hosted by MEA on 14.09.2022 virtually.
- 5.20 NDMA organized two Workshops on Earthquake and Flood under India's Chairship of Shanghai Cooperation Organization on 23.2.2023 and 24.2.2023 respectively. As outcome of the events, NDMA prepared Coffee Table Books of both the workshops.
- 5.21 A media delegation comprising 20 members from Maldives visited NDMA on 26.05.2022 for interaction with Sr. Officers/Officials of NDMA. The meeting was co-chaired by Lt. Gen Syed Ata Hasain (Retd), Member; and Shri Krishna S. Vatsa, Member, NDMA. The discussion points included vulnerability profile, institutional mechanism of DRR, key initiatives taken by NDMA for DRR including CDRI, Public Awareness Strategies, etc. in India.
- 5.22 A Kenyan delegation comprising 8 members visited NDMA on 10.05.2022 to learn and draw lessons on Disaster Management Frameworks and Disaster Management Fund. The meeting was co-chaired by Shri Rajendra Singh, Member; and Shri Krishna S. Vatsa, Member, NDMA.
- 5.23 BIMSTEC Secretary General Mr. Tenzin Lekhpell (Bhutan) visited NDMA on 24.8.2022 for a courtesy meeting with NDMA Members & Sr. Officers.
- 5.24 IORA Secretary General H.E. Mr. Salman Al Farisi visited NDMA to discuss Disaster Risk Reduction priorities with Shri Kamal Kishore, Member & Secretary In-Charge, NDMA on 30.9.2022.
- 5.25 35 journalists/editors from LAC (Latin America & Caribbean) countries visited NDMA for interaction with Member Secretary, NDMA, Members, & Sr. Officers on 24.3.2023.

5.26 National Lightning Risk Prevention and Mitigation Programme (NLRPMP)

The action point in Vision 2047-Amrat Kaal Vision document highlights about 50% reduction in deaths due to lightning. To reduce the death casualties, a meeting was held under the chairmanship of Home Secretary on 29.09.2021 and discussed various measures

Visits of Foreign Delegations

- 5.21 A media delegation comprising 20

possible for mitigation. Soon after the meeting, NDMA has initiated a proposal for developing National Lightning Risk Mitigation Programme (NLRMP). NDMA has developed the draft National Programme in consultation with various stakeholders. NDMA organized a One-day Workshop on 11.01.2023 with various stakeholders i.e. concerned States / UTs, Central Ministries / Departments and Institutions to deliberate upon the Draft National Lightning Risk Mitigation Programme (NLRMP). The draft NLRMP is under the process of finalization and the same will be shared with DM Division, MHA for approval.

5.27 Thunderstorm & Lightning

- Advisory and Do's and Don'ts on Thunderstorm and Lightning:

NDMA shared advisory and Do's and Don'ts on Thunderstorm and Lightning to all States / UTs for wider dissemination vide letter dated 06.04.2022 for the year 2022-23

5.28 A technical mission for developing National Recovery Resource Center:

- NDMA has undertaken an initiative to conceptualize the National Recovery Resource Centre (NRRC) to assist States to plan and implement recovery programmes and set up recovery as a practice area at the national level.
- Accordingly, UNDP Mission had visited India from 18 April to 29 April, 2022 and discussed with Officials at Central and State Govt. level and International Organizations to formulate the draft National Recovery Resource Center.
- Draft report on NRRC received from UNDP has been forwarded to concerned stakeholders for their comments/suggestions.

5.29 Review Meeting with IITM

Indian Institute of Tropical Meteorology (IITM) forwarded a proposal on the topic 'Lightning Analysis, Monitoring and Prevention (LAMP)'. A meeting was held with IITM on 19.05.2022 and discussed issues identified in the Proposal. A decision was made that relevant issues discussed in the proposal will be incorporated in the proposed National Lightning Risk Mitigation Programme (NLRMP). Accordingly, relevant issues identified in the Proposal have already been incorporated in the Draft NLRMP.

5.30 Formulation of policy on resettlement of displaced people affected by Coastal and River Erosion

- XVth Finance Commission in its Report recommended for 'Mitigation Measures to Prevent Coastal and River Erosion' under National Disaster Mitigation Fund (NDMF) and 'Resettlement of Displaced People Affected by Coastal and River Erosion' under National Disaster Response Fund (NDRF) for the award period from 2021-22 to 2022-26.
- The Commission also recommended that suitable norms for mitigation measures and a policy to deal with the extensive displacement of people may be developed. In accordance with that, NDMA has formulated a Draft Policy on Mitigation Measures and Rehabilitation for people displaced by Coastal and River Erosion with the consultation of various stakeholders i.e. concerned States / UTs and Central Ministries / Departments, Agencies, NGOs / Experts identified for Coastal and River Erosion.

- NDMA held a One-day workshop to finalize the Draft Policy on Mitigation Measures and Rehabilitation for people displaced by Coastal and River Erosion NDMA on 17.02.2023 at Thiruvananthapuram, Kerala. Concerned States / UTs, Central Ministries / Departments and Institutions participated in the Consultation workshop. The revised draft has been uploaded on NDMA website for valuable comments/suggestions of general public

5.31 Cold Wave and Frost

- Advisory and Do's and Don'ts on Cold Wave and Frost prior to Cold wave season 2022-23. NDMA prepared a suggestive Advisory and Do's and Don'ts on Cold Wave and Frost and shared with concerned States/ UTs and Central Ministries on 07.12.2022 for further necessary action.
- Meeting with concerned Ministries and States prone to Cold wave to review the preparedness and mitigation measures for Cold Wave season 2022-23 through Video Conference

A meeting was held on 12.12.2022 under the chairmanship of Member, Secretary I/C, NDMA through Video Conference with concerned Ministries/ Departments and States/UTs prone to Cold Wave and the preparedness & mitigation measures undertaken for Cold Wave 2022-23 was reviewed.

5.32 Post Disaster Needs Assessment (PDNA) exercise in States:

- Based on the severity of floods during monsoon season 2022, the Central government considered that some

additional support may be provided to the affected States i.e. Assam, Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka, Maharashtra, Meghalaya, Madhya Pradesh, Odisha and Telangana for long-term recovery and reconstruction through State Disaster Response Fund (SDRF) / National Disaster Response Fund (NDRF).

- Accordingly, the sectors of Housing and settlement, Health and Education, Drinking Water and Sanitation and Local level Infrastructure (Roads, bridges, etc.) have been considered under Recovery and Reconstruction Programme as per recommendations of 15th Finance Commission.
- The States were intimated vide D.O. letter dated 06.09.2022 that PDNA exercise is required to be conducted to assess the damage caused by floods. Following that meetings were held and discussion, held about PDNA framework, finalization of sector-wise templates, constitution of PDNA team with officials of NDMA and NIDM and way forward to conduct the exercise were finalized.
- Orientation Meetings with Flood-affected States were held in two phases i.e. Andhra Pradesh, Himachal Pradesh, Karnataka, Maharashtra on 20.09.2022 and Assam, Gujarat, Meghalaya and Odisha on 22.09.2022 to sensitize the Officers of the State Government to conduct the exercise. PDNA exercise in the above states excluding Madhya Pradesh & Telangana were carried out during the period of 28.09.2022 to 14.10.2022 by the teams constituted as above in association with the State Governments concerned.

- Following the PDNA exercise, States have submitted their PDNA Reports to NDMA. The State Govt. of Odisha submitted the Report but did not seek any funds from NDMA / Government of India. The Reports were scrutinized at NDMA and accordingly, comments

/ suggestions were conveyed to concerned State(s). Subsequently, continuous discussion with each of the States were held to finalize the report. Once it is finalized, the report will be shared with the DM Division, MHA for approval.

CHAPTER: VI

MOCK EXERCISES & AWARENESS GENERATION

*“The more we sweat in peace, the less we bleed in war”
“Remember: When disaster strikes, the time to prepare has passed”*

Introduction

6.1. The DM Act 2005 and the NPDM 2009 marks the institutionalization of paradigm shift in Disaster Management in India from a relief-centric approach to one of proactive prevention, mitigation, preparedness and capacity building. The hazard and vulnerability profile of India is now well known. India’s proneness to multiple disasters caused by natural and human induced factors aggravated by climate change impacts pose many threats and challenges for communities and agencies involved in management of disasters. The Incident Response System (IRS) is intended as the preferred mechanism for responding to any hazard or disaster situation. Although 19 States / Union Territories (UTs) have reportedly notified the IRS and others are working towards that, simply notifying the IRS and forming Incident Response Teams (IRTs) is unlikely to lead to an efficient, effective and comprehensive response. This is where integrated Mock Exercises (ME) come in. These are conducted on-ground in every State and Union Territory of India, with manpower and equipment participating at every level. Each ME is based on the State’s and District’s primary hazard threat, and

requires a coherent, on-ground response to multiple disaster events that are likely if the primary hazard threat manifests.

Integrated Mock Exercises

6.2 The objectives of integrated MEs are to (i) impart awareness about the IRS-IRT construct as well as technologies that can support and improve disaster risk management; (ii) review the Disaster Management Plans (DMP) of the State and Districts, as well as of critical national infrastructure and that of each Department; (iii) highlight the roles and responsibilities of various appointments/stakeholders involved in managing disasters as per the IRS; (iv) enhance coordination among emergency support functions (ESF) at the District (or equivalent) level; and (v) identify gaps, if any, in the resources, manpower, communications, response capabilities, etc. With rapid turnover of officials, all the above actions help to orient new incumbents.

6.3 Integrated MEs are part of a robust process that commences each year with the formulation of an annual calendar meticulously through consultative process involving all States / UTs, and are conducted in under mentioned sequence:-

Step	Event	Participants
Step-I (D minus 10 days)	<ul style="list-style-type: none"> Training in the Incident Response System (IRS) and associated aspects by the NDMA Coordinator: 	<ul style="list-style-type: none"> District-level: Officials and other stakeholders – through video-conferencing

	<ul style="list-style-type: none"> o Part-I: Reiteration of the importance of disaster management; its linkage to disaster risk reduction and sustainable development; India's three-tier institutional disaster response mechanism, its linkage to informal categorization of disasters (L1, L2 and L3); and how these mechanisms, categorizations and cooperative working relationships allow various levels of response forces/responders (District, State and Central) to function in complimentary unison. o Part-II: Training on the IRS, including how to: <ul style="list-style-type: none"> ➤ Form IRTs. ➤ Make an Incident Action Plan for response. ➤ Structure strike teams / task forces/ groups for response, relief and restoration tasks. o Part-III: How to leverage technology in support of disaster management. This includes how to: <ul style="list-style-type: none"> ➤ Carry out resource mapping. ➤ Build situational / domain awareness. ➤ Leverage geospatial resources. ➤ Fuse hazard-specific data, damage assessment data and core data. • Orientation & Coordination Conference: Here, the detailed modalities and preparations required for the impending mock exercise are discussed and finalized. 	<ul style="list-style-type: none"> • State-level: Officials and other stakeholders – through video-conference
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Step-II (D minus 02 days)	Table-Top Exercise (TTEEx) – conducted by the NDMA Coordinator	Physical conduct/ participation at all levels as per charter of duties / responsibilities
Step-III (D day)	Mock Exercise (ME) – conducted by the NDMA Coordinator under the overall guidance of the Chief Secretary / Additional Chief Secretary / Secretary (Disaster Management) of the concerned State/UT.	
Step-IV (D plus 15 days)	<ul style="list-style-type: none"> • After Action Report (AAR) by NDMA coordinator. • Final report by the State/UT to NDMA. • Feedback on ‘gaps identified’, ‘lessons learnt’ and ‘best practices’ to the State/UT and, where required, to other organizations too. 	NDMA, State/UT, jointly

6.4 Aspects of disaster management that are emphasized during Step-I training, and practised in Steps-II and III are listed below:

- (a) How to structure the Incident Response Teams (IRTs) at every level, and the role of IRT appointments.
- (b) The incremental steps in which the information about the disaster is gathered and a coherent response is mounted, including making of the Incident Action Plan.
- (c) Composition and functioning of various IRS facilities.
- (d) Recommended configuration of strike teams / task forces / groups for various response and restoration tasks.
- (e) How to build a reliable, fail-safe and redundant communications structure for disaster management operations.

This includes how to utilize the police radio network during a disaster situation.

- (f) The three critical elements that will ensure an expeditious, credible response in the wake of a disaster:
 - i. A disaster-resilient Emergency Operations Centre (EOC); its components, equipping and functioning including SOPs / protocols.
 - ii. Importance of ‘situation awareness’ in the immediate aftermath of a disaster and means of attaining it.
 - iii. Importance of ‘resource mapping’ (including Aapda Mitra volunteers, Ex-Servicemen and Ex-CAPFs etc.) during normal/pre-disaster periods and means of achieving resource awareness including responder status during a disaster situation / emergency.

- (g) The National Early Warning System (NEWS) for natural hazard monitoring; agencies comprising it and the web portals they are running; the information put out by each; and how to leverage this information for effective disaster management.
- (h) How to leverage portals and apps like National Disaster Alert Portal & Mobile App of “**CAP based Integrated Alert System**” SACHET, BHUVAN, National Database on Emergency Management (NDEM 4.0), India Disaster Resource Network (IDRN), BHUKAMP and DAMINI etc. The National Disaster Alert Portal (SACHET) is available at <https://sachet.ndma.gov.in/> and the android and iOS version of Mobile App (Sachet) is available on Google Play & Apple Store respectively.
- (i) Importance and utilization of GIS platforms.

6.5 Integrated MEs thus provide an optimal, cost-effective means for generating awareness about the IRS-IRT construct, and for building capacity of States / Union Territories (UTs) to respond effectively to any disaster situation. To this end, the Operations Division of NDMA has been conducting integrated MEs at State / Multi-State level and in special cases, at the District-level and events of mass congregations too. Stand-alone training on the IRS is also conducted at the explicit request of the State/UT / organizations.

Mock Exercises conducted during the Year 2022-2023

6.6 During the training year 01 Apr 2022- 31 Mar 2023, NDMA has conducted 22 MEs covering 26 States / UTs. Glimpses and salient details of the MEs are given below:-

Date	State, Disaster Scenario and Event	Remarks
12, 19-21 Apr 2022	<p>State: Manipur</p> <p>Scenario: Earthquake</p> <p>Event: State-level Mock Exercise for State HQ & all 16 Districts.</p>	<p>The North-Eastern Region is one of the most seismically active regions of the world. Two major earthquakes (M>8.0) and about 20 large earthquakes (M 7+) since 1897 have occurred in this region. The State of Manipur, majority of which is in Seismic Zone V, has a long history of earthquakes in and around. In Manipur, the unprecedented growth of multi-storey buildings and unregulated urbanization, especially in the Imphal town, has made the risks associated with earthquakes humongous. An earthquake of Magnitude 6.7 struck the state on January 4, 2016. Therefore, Mock Exercise on Earthquake Disaster scenario was conducted for the State.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA which was conducted by Consultant (ME & IRS), NDMA. Important functionaries</p>

		of the State/ District Incident Response Teams (IRTs), officials of the SDMA, DDMAs, Line Deptts, SDRF and representatives of National Center for Seismology (NCS), Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.
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Date	State, Disaster Scenario and Event	Remarks
02 Jun 2022	<p>State: Madhya Pradesh</p> <p>Scenario: Floods</p> <p>Event: State-level Online IRS Training & Table-Top Exercise for State HQ and all 52 District.</p>	<p>Floods are one of the primary hazards the State of Madhya Pradesh faces periodically. Therefore, an online IRS Training & TTE was conducted just prior to the flood season.</p> <p>Event was jointly chaired by Sh Rajendra Singh, Member, NDMA and Addl Chief Secretary (Home) and conducted by Consultant (ME & IRS), NDMA. Secretary (DM) & Relief Commissioner, Govt of MP, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMAs, Line Deptts and representatives of EW Agencies / Central Water Commission (CWC), Armed Forces, CAPFs and NDRF, along with all other stakeholders, participated.</p>



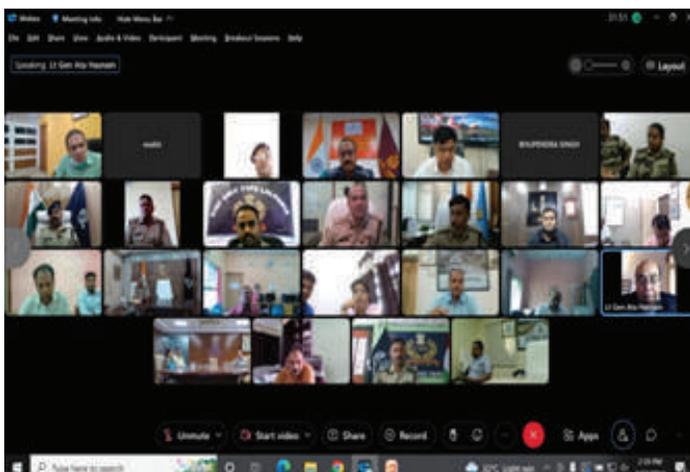
Date	State, Disaster Scenario and Event	Remarks
14, 22-23 Jun 2022	<p>State: Jammu & Kashmir</p> <p>Scenario: Shri Amarnath Ji Yatra</p> <p>Event: Multi-hazard DM training prior to the Shri Amarnath ji Yatra-2022:</p> <ul style="list-style-type: none"> • Training on the IRS • Coordination Conference • Table-top Exercise • Mock Exercise 	<p>The training on disaster management has been an annual event prior to the Shri Amarnath Ji Yatra. In June 2022 too, at the specific request of the Shri Amarnath Ji Shrine Board, the NDMA carried out training on disaster management for all stakeholders involved in managing this Yatra. This training was conducted separately on both routes of the Yatra, i.e, Baltal axis (District Ganderbal) and Pahalgam axis (District Anantnag). The ME, presided over by the DCs of each District and officers of the Shrine Board, with the active participation from the UT and District Administrations, other stakeholders alongwith first responders viz. SDRF, NDRF, Armed Forces, CAPFs and community volunteers.</p>



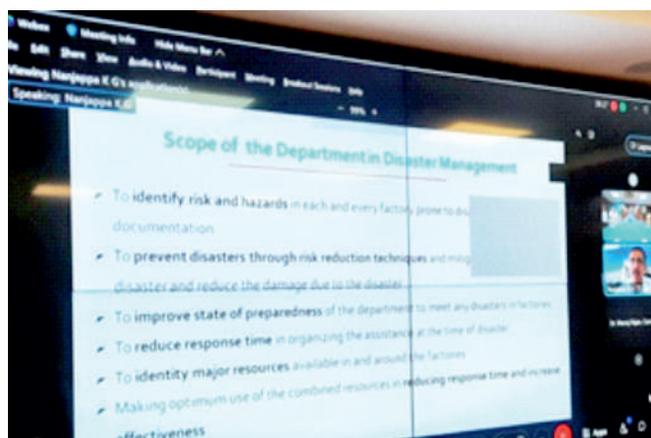
Date	State, Disaster Scenario and Event	Remarks
29 Jun, 05-07 Jul 2022	<p>State: Uttar Pradesh</p> <p>Scenario: Floods</p> <p>Event: State-level Mock Exercise for State HQ and 40 Flood prone Districts.</p>	<p>Floods are one of the primary hazards the State of Uttar Pradesh faces periodically. Therefore, ME was conducted just prior to the flood season.</p> <p>Event was jointly chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and Vice-Chairman, UPSDMA and conducted by Consultant (ME & IRS), NDMA. Secretary (DM) & Relief Commissioner, Govt of UP, important functionaries of the State / District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of EW Agencies / Central Water Commission (CWC), Armed Forces, CAPFs and NDRF, along with all other stakeholders, participated.</p>



Date	State, Disaster Scenario and Event	Remarks
27 Jul 2022	<p>State: Jharkhand</p> <p>Scenario: Floods</p> <p>Event: State-level Online IRS Training & Table-Top Exercise for State HQ and 22 District</p>	<p>Floods are one of the primary hazards the State of Jharkhand faces periodically. Therefore, an online IRS Training & TTE was conducted just prior to the flood season.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and Secretary (DM), Govt of Jharkhand and conducted by Consultant (ME & IRS), NDMA. Important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of EW Agencies / Central Water Commission (CWC), Armed Forces, CAPFs and NDRF, along with all other stakeholders, participated.</p>



Date	State, Disaster Scenario and Event	Remarks
19, 27-29 Jul 2022	<p>State: Karnataka</p> <p>Scenario: Chemical (Industrial)</p> <p>Event: State-level Mock Exercise for State HQ & all 31 districts</p>	<p>Karnataka is one of the most industrialized states of the country and a hub of pharma, chemical and petro-chemical industries. With industry in close proximity to inhabited areas, the risk from Industrial-Chemical disasters stands augmented. Therefore, a Mock Exercise was conducted for the State on Chemical (Industrial) Disaster Scenario.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA & Commissioner (DM) KSDMA / Secretary (Relief) and was conducted by Consultant (ME & IRS), NDMA. Important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMAs, DG FASLI, CPCB, SPCB, Department of Factories/ Industries, Major Accident Hazard (MAH) units and representatives of the Armed Forces, CAPFs and NDRF, along with all other stakeholders, participated.</p>



Date	State, Disaster Scenario and Event	Remarks
23, 30 Aug, 01 Sep 2022	<p>State: Tamil Nadu</p> <p>Scenario: Floods</p> <p>Event: State-level Mock Exercise for State HQ & all 38 District</p>	<p>Floods are one of the primary hazards the State of Tamil Nadu faces periodically. Therefore, a Mock Exercise was conducted on Flood Scenario.</p> <p>Event was chaired by Shri Rajendra Singh, Member, NDMA and Additional Chief Secretary and Commissioner (Revenue & DM), Govt of Tamil Nadu which was conducted by Consultant (ME & IRS), NDMA. Important functionaries of the State / District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Depts and representatives of EW Agencies / CWC, Armed Forces, CAPFs and NDRF, along with all other stakeholders, participated.</p>



Date	State, Disaster Scenario and Event	Remarks
26 Aug, 06-08 Sep 2022	<p>State: UT of Ladakh</p> <p>Scenario: Earthquake</p> <p>Event: UT-level Mock Exercise for UT HQ and its 02 districts</p>	<p>The UT of Ladakh is in Seismic Zone-IV and is highly vulnerable to earthquakes. In order to guide and assist the newly formed Union Territory of Ladakh in disaster preparedness, a Mock Exercise was conducted on Earthquake Scenario.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and Divisional Commander, UT of Ladakh and conducted by Consultant (ME & IRS), NDMA. Divisional Commissioner & Secretary (Revenue & DM), UT of Ladakh, important functionaries of the UT/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Depts and representatives of NCS, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>



Date	State, Disaster Scenario and Event	Remarks
29 Sep 2022	<p>State: Punjab</p> <p>Scenario: Floods</p> <p>Event: State-level Online IRS Training & Table-Top Exercise for State HQ and all 23 Districts</p>	<p>Floods are one of the primary hazards the State of Punjab faces periodically. Therefore, an online IRS Training & TTEEx was conducted for the state.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and Additional Chief Secretary & Financial Commissioner (Revenue), Govt of Punjab which was conducted by Consultant (ME & IRS), NDMA. Important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of EW Agencies / Central Water Commission (CWC), Armed Forces, CAPFs and NDRF, along with all other stakeholders, participated.</p>



Date	State, Disaster Scenario and Event	Remarks
12, 18-20 Oct 2022	<p>State: Tripura</p> <p>Scenario: Earthquake</p> <p>Event: State-level Mock Exercise for State HQ & all 08 districts.</p>	<p>The State of Tripura is in Seismic Zone-V. Besides, the North-East (NE) region of India has a history of earthquakes.</p> <p>There are three NDRF battalions located in / around NE region. In the event of a major earthquake in the region, the resources of these Battalions will have to be divided across the affected States. Hence, with competing demands on the NDRF, and given Tripura's connectivity, it is imperative that the State of Tripura be fully prepared to mount a prompt in-house response in the golden hours using the IRS-IRT construct. Therefore, a Mock Exercise was conducted on Earthquake Scenario. This had simulated the magnitude 8.7 Shillong earthquake of 1897.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and Principal Secretary (Revenue), Govt of Tripura which was conducted by Consultant (ME & IRS), NDMA. Secretary (Revenue/DM), Govt of Tripura, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and NCS, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>



Date	State, Disaster Scenario and Event	Remarks
26 Oct, 02-04 Nov 2022	<p>State: Chhattisgarh</p> <p>Scenario: Floods</p> <p>Event: State-level Mock Exercise for State HQ & all 33 Districts</p>	<p>Floods are one of the primary hazards the State of Chhattisgarh faces periodically. Therefore, a Mock Exercise was conducted on Flood Scenario.</p> <p>Event was chaired by Shri. Rajendra Singh, Member, NDMA and Secretary (Revenue & DM), Govt of Chhattisgarh which was conducted by Consultant (ME & IRS), NDMA. Important functionaries of the State / District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of EW Agencies / CWC, Armed Forces, CAPFs and NDRF, along with all other stakeholders, participated.</p>



Date	State, Disaster Scenario and Event	Remarks
30 Nov 2022	<p>State: Maharashtra</p> <p>Scenario: Floods</p> <p>Event: UT-level Online IRS Training & Table-Top Exercise for State HQ & all 36 Districts</p>	<p>The State of Maharashtra is prone to floods and Urban floods and has experienced loss of life and property due to monsoon induced flooding during last few years. Therefore, an online IRS Training & TTE was conducted on Flood Scenario.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and conducted by Consultant (ME & IRS), NDMA. Member Secretary, Maharashtra SDMA, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of EW Agencies / CWC, Armed Forces, CAPFs and NDRF, along with all other stakeholders, participated.</p>



Date	State, Disaster Scenario and Event	Remarks
19, 27-29 Dec 2022	<p>State: Kerala</p> <p>Scenario: Floods</p> <p>Event: State-level Mock Exercise for State HQ & all 14 districts</p>	<p>The State of Kerala is prone to floods and landslides and has experienced loss of life and property due to monsoon induced and cyclonic flooding during last few years. Therefore, a Mock Exercise was conducted on Flood Scenario.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and Addl Chief Secretary (Revenue & DM) Govt of Kerala, which was conducted by Consultant (ME & IRS), NDMA. Important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of EW Agencies / CWC, Armed Forces, CAPFs and NDRF, along with all other stakeholders, participated.</p>



Date	State, Disaster Scenario and Event	Remarks
24 Jan 2023	<p>State: Sikkim</p> <p>Scenario: Earthquake</p> <p>Event: State-level Online IRS Training & Table-Top Exercise for State HQ & all 06 districts.</p>	<p>The State of Sikkim, majority of which is in Seismic Zone IV, has a long history of earthquakes in/around it (18 Sept 2011 - it witnessed a major earthquake (6.8), which had caused widespread damage). Therefore, an online IRS Training & TTE was conducted on Earthquake Scenario for the State.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and Secretary cum Relief Commissioner, Govt of Sikkim which was conducted by Consultant (ME & IRS), NDMA. Important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMAs, Line Deptts and National Center for Seismology (NCS), Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>



Date	State, Disaster Scenario and Event	Remarks
23, 31 Jan-02 Feb 2023	<p>State: Mizoram</p> <p>Scenario: Earthquake</p> <p>Event: State-level Mock Exercise for State HQ & 09 District</p>	<p>The State of Mizoram is in Seismic Zone-V. Besides, the North-East (NE) region of India has a history of earthquakes.</p> <p>There are three NDRF battalions located in / around NE region. In the event of a major earthquake in the region, the resources of these Battalions will have to be divided across the affected States. Hence, with competing demands on the NDRF, and given Mizoram's connectivity, it is imperative that the State of Mizoram</p>

		<p>be fully prepared to mount a prompt in-house response in the golden hours using the IRS-IRT construct. Therefore, a Mock Exercise was conducted on Earthquake Scenario. This had simulated the magnitude 8.7 Shillong earthquake of 1897.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and Secretary (DM & Rehabilitation), Govt of Mizoram which was conducted by Consultant (ME & IRS), NDMA. Secretary (Revenue/DM), Govt of Mizoram, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and NCS, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>
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Date	State, Disaster Scenario and Event	Remarks
31 Jan, 07-09 Feb 2023	<p>State: UT of Andaman & Nicobar Islands</p> <p>Scenario: Tsunami</p> <p>Event: State-level Mock Exercise for State HQ & all 03 Districts</p>	<p>The Union Territory of Andaman & Nicobar Islands has three Districts viz. South Andaman, North & Middle Andaman and Nicobar. The UT is vulnerable to many types of hazards/ disasters such as Tsunami, Earthquake, Cyclone, Flood, Drought, Land Slide, Volcanic activity in Barren Island. A Mock Exercise, depicting a scenario of a tsunami was conducted for the UT and all its districts.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and conducted by Consultant (ME & IRS), NDMA. Commissioner-cum-Secretary (DM), UT of A&N Islands, important functionaries of the UT/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and EW Agencies / INCOIS, NCS, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>



Date	State, Disaster Scenario and Event	Remarks
27 Jan, 08-10 Feb 2023	<p>State: UT of Puducherry</p> <p>Scenario: Cyclone</p> <p>Event: UT-level Mock Exercise for UT HQ & its 02 Districts</p>	<p>The UT of Puducherry lies in the southern part of the Indian Peninsula and comprises of two distinct districts of Puducherry and Karaikal. Puducherry districts comprises of Puducherry region and two outlying Administrative units of Mahe and Yanam. Puducherry, Karaikal, and Yanam on the Bay of Bengal and Mahe on the Arabian sea. The major portion of the UT is prone to many natural hazards like cyclones, floods and earthquakes and is mainly influenced by North East monsoon. Being a coastal UT vulnerable to Tropical Cyclones, a Mock Exercise was conducted on Cyclone Scenario.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and conducted by Consultant (ME & IRS). Secretary (Revenue/DM), UT of Puducherry along with important functionaries of the UT / District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and EW Agencies / IMD, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>



Date	State, Disaster Scenario and Event	Remarks
14, 21-23 Feb 2023	<p>State: Andhra Pradesh</p> <p>Scenario: Chemical (Industrial)</p> <p>Event: State-level Mock Exercise for State HQ & 09 districts</p>	<p>Andhra Pradesh is one of the most industrialized states of the country and a hub of pharma, chemical and petro-chemical industries. With industry in close proximity to inhabited areas, the risk from Industrial-Chemical disasters stands augmented. Therefore, a Mock Exercise was conducted for the State on Chemical (Industrial) Disaster Scenario.</p>

		Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and was conducted by Consultant (ME & IRS), NDMA. Managing Director, APSDMA, Govt. of Andhra Pradesh, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, DG FASLI, CPCB, SPCB, Department of Factories/ Industries, Major Accident Hazard (MAH) units and representatives of the Armed Forces, CAPFs and NDRF, along with all other stakeholders, participated.
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Date	State, Disaster Scenario and Event	Remarks
16 Feb, 01-03 Mar 2023	<p>State: Goa</p> <p>Scenario: Cyclone</p> <p>Event: State-level Mock Exercise for State HQ & its 02 Districts</p>	<p>Goa though blessed by not being affected by any major disaster till date, is still vulnerable to hazards/ disasters like Flood, Cyclonic Storms, Landslide, Mining hazards and Sea Erosion, Fire, Industrial accidents etc. Goa is a small state having only 02 Districts namely North Goa and South Goa. Being a coastal state vulnerable to Tropical Cyclones, a Mock exercise was conducted on Cyclone Scenario.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and conducted by Consultant (ME & IRS). Secretary (DM/Revenue), Govt of Goa, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Depts and EW Agencies/IMD, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>



Date	State, Disaster Scenario and Event	Remarks
15, 21-23 Mar, 2023	<p>State: West Bengal</p> <p>Scenario: Cyclone</p> <p>Event: State-level Mock Exercise for State HQ & 08 Districts</p>	<p>The state of West Bengal is vulnerable to many hazards/ disasters like Flood, Cyclonic Storms, Landslide, Mining hazards and Sea Erosion, Fire, Industrial accidents etc. 08 Coastal Districts of the State are very much prone to Cyclone disaster during South-West Monsoon, therefore, a Mock exercise was conducted on Cyclone Scenario for 08 Cyclone Prone Districts.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and conducted by Consultant (ME & IRS). Secretary (DM/Revenue), Govt of West Bengal, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and EW Agencies / IMD, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>

Sharing of Feedback of Integrated Mock Exercise Process:

- 6.7 After successful conduct of each Mock Exercise, the feedback is shared with concerned State / UT highlighting best practices and gaps identified to improve their preparedness and build their capacities in order to achieve the goal of making India a disaster resilient country.

Finalization of Annual Mock Exercise Calendar for the year 2023-24:

6.8 In order to prepare Annual Mock Exercise calendar, consultative conference was held with all the States and UTs on 17 Mar 2023 and accordingly, schedule was finalized.

Off-Site Emergency Exercise (OSEE) for Nuclear Power Plants (NPPs)

6.9 NDMA participated in the Radiological Off-Site Emergency Exercises (OSEE) in “Integrated Command Control and Response” mode scheduled at NPP KAPS Kakrapar (Distt: Surat, Gujarat) on 11 Oct 2022, and at NPP RAPS Rawatbhata (Distt: Chittorgarh, Rajasthan) on 14 Dec 2022. Detailed feedback has been shared with State Authorities and Deptt. of Atomic Energy (DAE).

Joint Mock exercises with Foreign countries

6.10 Disaster knows no geographical boundaries, therefore, it is the need of the hour to work on building resilience with neighboring countries as well as regional cooperation groups. Joint MEs with Foreign Countries play an important role in mutual learning and to adopt common Standards and Protocols so as to respond to each other’s need within minimal time during Golden hours for efficient and

effective response in order to save precious lives. NDMA has been coordinating and conducting such joint MEs and Table Top Exercises (TTEs) with involvement of concerned stakeholders like MEA, MHA, MoH&FW, HQ IDS (Army, Navy, IAF & ICG), NDRF and selected states. The details of such Joint MEs conducted during 01 Apr 2022 – 31 Mar 2023 are as under:

- BRICS Expert Level Workshop on Disaster Management held on 26 Jul 2022 and BRICS Urban Search and Rescue Simulation Exercise (BRICS SIMEX 2022) held on 27 to 29 Jul 2022 at 8th Bn Hq, Ghaziabad
- Annual Joint HADR Tri-Services Exercise-2022 (Exercise - SAMANVAY) held on 01-03 Nov 2022 at Air Force Station, Agra conducted by IAF (HQ IDS) with the participation of ASEAN Member States.
- QUAD HADR Table Top Exercise (TTEs) held on 12-14 Dec 2022 conducted by MEA with the participation of all QUAD Member States.
- QUAD Pandemic Preparedness Exercise (QPPE) and final TTEs held on 15 Dec 2022 conducted by MEA and MoH&FW with participation of QUAD Member States.



HADR / USAR support to Earthquake hit Turkiye and Syria (Operation DOST)

6.11 NDMA coordinated the mobilization of Indian Contingent for extending HADR / USAR support to EQ hit Turkiye and Syria (Operation DOST) on the directions of the Govt of India as mandated u/s 6(2) (h) of DM Act 2005. 03 teams of NDRF and mobile hospital (60 para field) of Indian Army carried out CSSR operations, provided relief materials and medical aid to the EQ victims wef 07/08 Feb 2023 to 19 Feb 2023. Relief material support was extended to Syria as well.

Subsequently, NDMA organised a debriefing Conference under the Chairmanship Lt Gen Syed Ata Hasnain, PVSM, UYSM, AVSM, SM, VSM** (Retd), Member, NDMA on 28th Feb 2023. Presentations were delivered by National Centre for Seismology (NCS), Ministry of External Affairs (MEA), Indian Air Force (IAF), Contingent Commanders of NDRF as well as 60 Para Field Hospital, Army sharing their first hand experiences. Thereafter, deliberations were made by all participants i.e MEA, NDRF, Army, IAF, HQ IDS (MoD), NCS, NIDM, Central Building Research Institute (CBRI) and Indian Embassy in Turkiye and Syria (through online mode) regarding gaps identified, best practices and lessons learnt.



District-level Mock Exercise Programme by NDRF

6.12 Review by Hon'ble Home Minister

On 30 June 2020, the Hon'ble Union Home Minister, carried out a review of the country's disaster management activities and thereafter directed that mock exercises should be conducted in each district of the country at least once every three years for the following purposes:

- (a) To ensure that every district can constitute field trained teams for disaster response.
- (b) To test the efficacy of every district's disaster management plans and its preparedness component.

(c) To bring in greater cohesion and coordination amongst, and between, different stakeholders.

6.13 It was also directed that on the day of a district's mock exercise, the Fire & Emergency Services (F&ES) of the concerned district and of the State/UT shall also visit schools in their jurisdiction and conduct mock drills in 10 to 20 pre-identified schools in the district.

6.14 In accordance with the directions, the NDRF has been tasked with conducting mock exercises at the district level. The Distt level MEs conducted by NDRF since 2020-21 onwards are as under:

Financial Year	Districts covered
2020-21	98
2021-22	239
2022-23	331
2023-24	Planned for 244 Districts

Members of NDMA conducted review meeting with NDRF on District Level Mock Exercise on 16 Sep 2021 and 07 Sep 2022 wherein it was brought out by NDRF that there is a considerable backlog in conduct of MEs, due to reasons beyond the control of NDRF like deployment in Monsoon Season, Cyclone, and other disasters besides Covid-19 pandemic. Therefore, the requisite target of conducting MEs in all the districts of the country within a span of three year does not seem to be feasible. However, all out efforts are being taken to achieve the desired target.

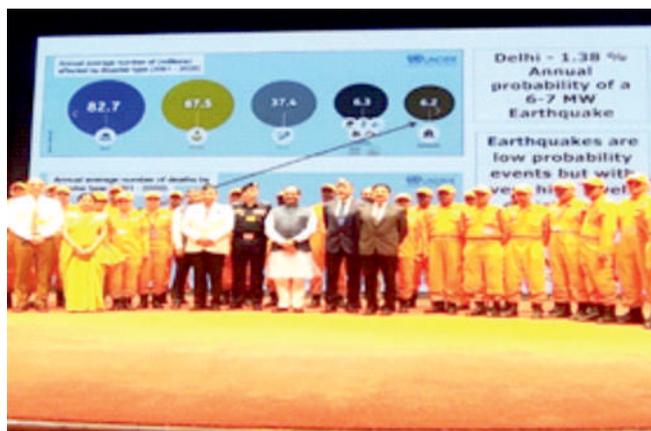
Greater Involvement and Leadership of Women in Disaster Risk Management

6.15 Concerted efforts have been made by NDMA in consultation with MHA to provide authorized GD Mahila personnel from CAPFs to respective NDRF Bns on deputation. Resulting, total 239 GD Mahila personnel have joined NDRF.

Sensitization exercise and Demonstration for Parliament House

6.16 NDMA formulated a concept note dated 20.03.2023 for conduct of Demonstration and Mock Exercise for Parliament House as well as North & South Block on emergency preparedness and response during an Earthquake emergency. In the series, NDMA conducted coordination meeting on 29 Mar 2023 under the Chairmanship of Member (SAH) with the participation of MHA, NDRF, Delhi Police, IB, NSG,

Delhi Fire Service, Parliament Security Service etc. to discuss and finalize the modalities and preparedness measures for sensitization exercise and Demonstration as precursor to the said event. Accordingly, NDMA conducted the sensitization exercise and Demonstration for Hon'ble Parliamentarians and staff on 03 & 05 Apr 2023. The event was attended by Shri Om Birla, Hon'ble Speaker of Lok Sabha alongwith other Hon'ble Parliamentarians and staff.



6.17 Control Room Activities

(a) NDMA conducted a meeting to Review Pre-Monsoon situation for South-West Monsoon on 13 May, 2022. The meeting was attended by Early Warning Agencies, Response Agencies and Resident Commissioners of flood

prone States/UTs. In the meeting presentations were made by various agencies including IMD, CWC, NRSC and NDRF. Inputs were also provided by HQ IDS and DM Division, MHA. In the meeting, deliberations were made reg SDRF, CD Volunteers, Home Guard, Aapda Mitra, Nomination

of nodal officers by States/UTs for better coordination, Pre-Monsoon deployment of NDRF, Advance coordination with Armed Forces, Updation of IDRN database etc.

- (b) NDMA participated in Annual Conference of Relief Commissioners/ Secretaries, Departments of Disaster Management of States/UTs to review the status of preparedness for South-West Monsoon 2022 on 18 & 19 May 2022 at Vigyan Bhawan, New Delhi under the Chairmanship of Union Home Secretary. NDMA formulated agenda items, delivered presentation regarding ongoing projects / schemes and moderated various sessions during the conference. Presentations were made by various Central agencies including IMD, CWC, GSI, NRSC (ISRO), HQ IDS (MoD), NIC, MHA, NDRF and some States followed by deliberations regarding South-West Monsoon Preparedness and sharing of best practices and lessons learnt.
- (c) NDMA closely monitored the preventive measures taken by the affected States / UTs and other stakeholders in the wake of impending Cyclone 'Mandous' in the Southeast Bay of Bengal in the month of Dec 2022. NDMA issued advisory to affected States / UTs alongwith SMS content for Do's and Don'ts and necessary

coordination for deployment of response forces i.e NDRF, ICG and Indian Armed Forces was carried out in consultation with State Govt / UT Administration.

- (d) NDMA conducted a debriefing session with NDRF on 13 Dec 2022 regarding SAR operation carried out during Cable Bridge Collapse incident in Morbi (Gujarat) and also to chalk out the actions regarding preparedness and capacity building for disaster response in order to ensure the safe and secure conduct of G-20 events throughout the country.
- (e) In the aftermath of Deoghar Ropeway incident, NDMA organized a consultative conference on 25 Jan 2023 under the Chairmanship of Member & Secretary I/C, NDMA with the participation of MHA, MoRTH, NDRF, NIDM and BIS to review preparedness measures to effectively deal with crisis situations in the Ropeway Projects in the country.

Additional Activities

- 6.18 In FY 2022-2023, the NDMA also rendered specialized guidance, ran awareness campaigns, and conducted workshops on a number of issues for diverse agencies and organizations. Some of these are mentioned below:-

Date	Topic / Event
10-12 May 2022	NDMA conducted Incident Response System (IRS) Training for the state of Gujarat.
11 May 2022	NDMA delivered presentation on 11.05.2022 on the topic "Disaster Resilient Infrastructure" in the 4th Cycle of ADMM (ASEAN Defence Ministers Meeting) Plus Expert Working Group on HADR (2021-2023) and also participated as Moderator on 12.05.2022

07 July 2022	NDMA conducted a preparatory meeting regarding Kaanwad Yatra-2022 under the Chairmanship of Member & Secretary I/C, NDMA with Ministry of Railways, DM Division MHA, NDRF and following officers of Govt of Uttarakhand – Principal Secretary/Relief Commissioner, Secretary (Health), Secretary (Transport), Secretary (Tourism) DGP, DM-Haridwar, Yatra Nodal Officer, SSP – Haridwar.
16 Aug 2022	NDMA participated in the meeting to review the action plan and preparedness to deal with any accident in Nuclear Power Plants conducted by MHA on 16 Aug 2022.
27-28 Aug 2022	NDMA participated in 10th National Maritime Search and Rescue Workshop and Exercise – 2022 (SAREX – 22) conducted by Indian Coast Guard on 27-28 Aug 2022 at Chennai.
30-31 Aug 2022	NDMA conducted Incident Response System (IRS) Training for the State of Uttar Pradesh.
31 Oct 2022 to 03 Nov 2022	NDMA attended the National Tsunami Ready Board meeting and Tsunami Standard Operating Procedure Workshop at INCOIS Hyderabad.
10 Jan 2023	NDMA and MHA organized a Meeting of Empowered Committee (EC) to fast-track the procurement of HAZMAT vehicle by NDRF for ensuring safe, secure and disaster resilient G-20 events and summit.
10 Jun 2022	Interaction and Brainstorming by NDMA with NDRF: <ul style="list-style-type: none"> • Lt Gen Syed Ata Hasnain, PVSM, UYSM, AVSM, SM, VSM** (Retd), Member, NDMA attended the meeting under the Chairmanship of Union Home Secretary in MHA on 10.06.2022 to discuss the revised proposal of NDRF regarding establishment of additional 34 Regional Response Centres (RRCs) in NDRF and change of location of already approved 03 RRCs in the wake of directions of Hon'ble Union Home Minister to establish NDRF at the zero point of all 08 Nuclear Power Plants (NPPs). Accordingly, revised proposal for 34 RRCs (28 RRCs – earlier proposal of NDRF + 06 RRCs newly proposed for NPPs) was recommended.
7 Sep 2022	<ul style="list-style-type: none"> • NDMA conducted a review meeting with NDRF on various issues on 07 Sep 2022 under the chairmanship of Member & Secretary I/C, NDMA, during which, inter-alia operational challenges, quarterly feedback of Distt level MEs and courses run by upcoming NDRF Academy were discussed.
03 Feb 2023	<ul style="list-style-type: none"> • NDMA assisted in the Training Need Analysis (TNA) of NDRF being reviewed in consultation with IIM Rohtak and participated in the meeting held under the Chairmanship of Union Home Secretary to discuss vision, expectations and ideas about TNA of NDRF.

6.19 Common Alerting Protocol (CAP) based Integrated Alert System (Sachet) Phase-I

Background

1. CAP defines a standard message format which contains all the relevant details like type of hazard, its intensity, duration, area of impact, actions to be taken etc. In addition to implementing standardization and inter work ability across the world, CAP messages also enable efficient routing, prioritization, geo targeting etc. CAP compliant systems and devices like the GSM network, Radio, Television, PA systems, coastal sirens etc. can plug and play with a CAP based alerting system. Non-compliant and vintage systems and devices can also be interfaced by suitable interoperability converting devices.

Project Brief

- 6.20 NDMA conceived a National Project to integrate the Alert Generating Agencies, Alert Disseminating Agencies and the Disaster Management Authorities on a CAP based platform. After successful implementation of a Pilot Project in Tamil Nadu, Pan India implementation of Phase I of the CAP Project had been sanctioned by the Government. The Project will automate flow of Alerts between stakeholders which are as under: -

- (a) Alert Generating Agencies. Alert generating agencies for all types of Hazards are as under: -
 - i. India Meteorological Department (IMD).
 - ii. Central Water Commission (CWC).
 - iii. Indian National Center for Ocean Information Services (INCOIS).

- iv. Defence Geo-Informatics Research Establishment (DGRE).
- v. Forest Survey of India (FSI)
- (b) Alert Approving Agencies. Disaster Management authorities at the National level (MHA) and State Level (SDMA), as applicable to the alert will be the approving authorities for dissemination of alerts.
- (c) Alert Disseminating Agencies. Geo targeted Alerts in vernacular will be disseminated by following means: -
 - i. SMS and cell broadcast (CB) over mobile phones.
 - ii. Broadcast media like Television, Cable TV, Satellite TV (DTH) and Radio Stations
 - iii. Over Internet on social media, browser alerts and RSS Feed.
 - iv. Public address systems on railway stations.
 - v. Coastal sirens and other legacy community warning systems.
 - vi. GAGAN and NavIC satellite channels
 - vii. Google Integration
 - viii. Mobile Application and National Disaster Alert Portal

Project Scope

- 6.21 The Project is being implemented by Center for Development of Telematics (C-DOT). MoU for CAP Project (Phase I) has been signed and Work Order issued on 23 Aug 2021. The Project was to be completed in 18 months by Feb 2023 but certain activities such as PoC for Coastal Siren and Cell broadcast for Reliance

Jio, implementation of automated PCR, integration with Google services, Disaster Recovery functionality of NIC cloud etc. could not be completed within the stipulated period of 18 months. Hence, CDOT has sought an extension of six months to achieve the following: -

- i. Integration with IMD, INCOIS, CWC, DGRE and FSI.
- ii. Integration with all operational Telecom Service Providers (TSPs) for SMS Alerts.
- iii. Development and Publishing of Mobile Application and National Disaster Alert Portal.
- iv. Development and Publishing of alert through Internet Browser notifications.
- v. Integration with Google Alert and Publishing of RSS feed.
- vi. Integration with GAGAN and NavIC Satellite terminals
- vii. Proof of Concept (PoC) for TV, Coastal Sirens, IR PA System, AIR Radio Station and CB for all TSPs.

Project is under progress

6.22 Impact of the Project

- Seamless Web Based Integration of all Stakeholders for speedy notification, approval and dissemination of Alerts.
- Near real time dissemination of Alerts to citizens and responders thereby ensuring preparedness mitigating loss to life and property.
- Geo targeted Alerts in regional vernacular for speedy dissemination.
- Web based dashboard to Disaster

managers for approving/editing alerts and choosing media for dissemination.

- Powerful GIS based Analytic tools for Disaster managers.

6.23 EXTENSION OF ERSS (DIAL 112) FOR DISASTER EMERGENCIES”

Background

6.24 Emergency Response Support System (ERSS) (Dial112) is a Pan-India single number (112) based emergency response system for citizens in emergencies. Citizens can request help through Voice Call, SOS, SMS, Email, Web Request and Panic buttons on a mobile app to request for immediate assistance pertaining to events related to Police assistance, Fire, Ambulance, Women protection, Child safety etc. The project initiated by MHA (Women Safety Division), has been implemented in all 36 States/UTs (in 28 States/UTs by CDAC and in 08 States/UTs by vendors other than CDAC). ERSS did not support emergency calls related to impending disasters and not integrated with the SEOCs and Disaster Responders.

Project Brief

6.25 In order to implement the vision of the Hon’ble PM for **‘Single Distress Number for all emergencies across the country’**, NDMA has conceived a Project “Extension of ERSS for Disaster Emergencies”. The Project has extended the existing ERSS system to cater for Disaster Emergencies. Salient features of the Project are as under: -

- a. Enhancement of the existing ERSS solution to cater for Disaster Emergencies.
- b. Integration of Public Safety Access

Points (PSAPs)/Police Control Rooms with SEOCs over leased lines.

- c. Installation of Hardware for Two/One operator positions at SEOCs of all States/UTs.
- d. Augmentation of hardware at the PSAPs of selected States in order to cater for increase in load.
- e. Setting up of mini data center in eight states where ERSS has not been implemented by CDAC.
- f. Provision of leased line/Internet connectivity at SEOCs.
- g. Provision of manpower to States/UTs to man operator positions for three years.
- h. Provision of manpower, furniture, office equipment, travel charges and wages for a period of three years for the staff of Project Management Unit at NDMA.

6.26 CDAC, based on their experience of implementing the existing ERSS system in 28 States/UTs was nominated to implement the Scheme.

6.27 Various timelines for the Project are as under: -

- a. MoU signed and Work order issued- **02 Aug 2021.**
- b. Completion of Installation in all States/UTs – **28 May 2023.**
- c. Sustenance by NDMA and Warranty Period - Three years from the date of taking over for each State/UT.

6.28 The Scheme is completely funded by NDMA. Following aspects have been catered for:

- a. Procurement, installation and integration of hardware and software.
- b. Hiring of leased lines for internet and connectivity to PSAPs for three years.
- c. Wages for manpower to be hired by States for a period of three years.
- d. Training of manpower at States/UTs.
- e. Setting up a Project Management Unit (PMU) at NDMA to include procurement of furniture and office requisites.
- f. Wages for manpower to be hired for PMU for the duration of the Project (18 months which is now extended for three months up to 28.05.2023) implementation period and 36 months' sustenance period).

6.29 After completion of three years, the States/UTs will sustain the Project by directly entering into an AMC with CDAC and hiring manpower from within their resources. Project is in final stage and the following works have been completed: -

- a. The project has been technically commissioned in 28 States/UTs. In addition to this, Installation and connectivity has been established in 05 States/UTs and API Integration is underway.
- b. Training has been provided to 19 States/UTs. Manpower has been hired in 20 States/UTs.
- c. Funds have been released to 34 States/UTs.
- d. MoU yet to be received by Telangana.
- e. Central Dashboard yet to be deployed by CDAC.

- f. Disaster Button incorporated in 112 India App Android Version. Yet to be incorporated in iOS version.

6.30 Subhash Chandra Bose Aapda Prabandhan Puraskaar

The award “Subhash Chandra Bose Aapda Prabandhan Puraskar (SCBAPP)” was conceived by Govt. of India in the year 2018-19. This award is given annually to ‘Individuals/Institutions’

to recognize outstanding contribution by individuals and Institutions in the field of Disaster Management. The fields encompass Prevention, Mitigation, Preparedness, Rescue, Response, Relief, Rehabilitation, Research/Innovations and Early Warning. The award ceremony of Subhash Chandra Bose Aapda Prabandhan Puraskar for the year 2023 was held on 10.03.2023 at Vigyan Bhawan, New Delhi, wherein Hon’ble Prime Minister presented the awards to the following awardees :

Sl.No.	Awardee	Year	Category
1.	Odisha State Disaster Management Authority	2023	Institutional
2.	Lunglei Fire Station (LFS), Mizoram	2023	Institutional

Awareness Generation

6.31 In its endeavour to spread awareness amongst the masses, Public Relation & Awareness Generation (PR&AG) Division, National Disaster Management Authority (NDMA), takes various public awareness initiatives through print and electronic media including on social media, from time to time, throughout the year. The focus is on building an appropriate environment by informing, educating and communicating the masses for a disaster resilient society. These awareness campaigns are run through various modes viz. TV, Radio, Print Media, Exhibitions, Social Media etc. The awareness campaigns have two prime objectives:

- a) Preparing citizens for any impending disasters (earthquake, cyclone, floods, landslides, Thunderstorm & Lightning, etc.)

- b) Informing and educating people on various preventive and mitigating measures to reduce losses to the maximum extent.

6.32 Following awareness campaigns were carried out during 2022-23 (upto 31/03/2023)

Audio-Visual Campaigns

6.33 Doordarshan/All India Radio: Audio-Video spots on natural disasters such as Cyclone, Thunderstorm & Lightning, Flood, Urban Flood, Earthquake, Landslide, Cold Wave, Avalanche and Heat Wave were telecast/broadcast on Doordarshan (National Network and Regional Kendras of Doordarshan) and All India Radio. Multiple spots containing do’s and dont’s of various disasters were run in respective disaster prone regions. Details of campaigns run during the year are as under:

Disaster/Hazard	Doordarshan	All India Radio
Heat Wave	7 days from 11/04/2022 to 17/04/2022	7 days from 18/04/2022 to 24/04/2022
	7 days from 10/03/2023 to 16/03/2023	7 days from 10/03/2023 to 16/03/2023
Thunderstorm & Lightning	7 days from 21/06/2022 to 27/06/2022	7 days from 21/06/2022 to 27/06/2022
Flood	7 days from 23/06/2022 to 29/06/2022	7 days from 23/06/2022 to 29/06/2022
Landslide	7 days from 08/07/2022 to 18/07/2022 (except 9th, 10th, 16th & 17th- due to non-telecast in Portblair)	7 days from 08/07/2022 to 14/07/2022
Urban Flood	7 days from 08/07/2022 to 14/07/2022	--
Earthquake	7 days from 12/08/2022 to 18/08/2022	7 days from 12/08/2022 to 18/08/2022
	7 days from 08/02/2023 to 14/02/2023	7 days from 16/02/2023 to 22/02/2023
Cyclone	7 days from 04/10/2022 to 10/10/2022	7 days from 04/10/2022 to 10/10/2022
Cold Wave	7 days from 20/12/2022 to 26/12/2022	7 days from 27/12/2022 to 02/01/2023
	7 days from 05/01/2023 to 11/01/2023	7 days from 12/01/2023 to 18/01/2023

6.34 **Community Radio:** 7 days campaign was run from 28/12/2022 to 03/01/2023 on 138 community radios in cold wave prone States for awareness generation to safeguard from cold waves.

6.35 **Publicity of Subhash Chandra Bose Aapda Prabandhan Puraskar (SCBAPP):** An Award to recognize the excellent work done by individuals and institutions in India in the field of Disaster Management i.e. Subhash Chandra Bose Aapda Prabandhan Puraskar (SCBAPP) which is announced on 23rd January every year. Wide publicity of the

award was done through advertisement on 01/07/2022 and through social media campaign. The award ceremony of Subhash Chandra Bose Aapda Prabandhan Puraskar was held on 10/03/2023 at Vigyan Bhawan wherein Hon'ble Prime Minister presented the awards to the awardees of 2022-23. Short Videos of the award winners were produced in the form of citation.

6.36 **"Aapda Ka Saamna" a special programme of Panel Discussion/Talk Show on Doordarshan:** For creating awareness amongst public, NDMA has organized

programme of panel discussion/talk show “Aapda Ka Saamna” on DD News. Total 50 number of episodes were telecast through DD News and re-telecast through regional channels in the respective disaster prone areas/states. The details of episodes are as under:-

Sl.No.	Episode	Date of Telecast	Date of Re telecast
1.	Heat Wave	10 April 2022	16 April 2022
2.	Cyclone	01 May 2022	07 May 2022
3.	Forest Fire	15 May 2022	21 May 2022
4.	Thunderstorm	29 May 2022	04 June 2022
5.	Flood	12 June 2022	18 June 2022
6.	Landslide	26 June 2022	02 July 2022
7.	Urban Flood	10 July 2022	16 July 2022
8.	Community Based Disaster Risk Management	24 July 2022	30 July 2022
9.	Earthquake	14 August 2022	20 August 2022
10.	Urban search and rescue	28 August 2022	03 September 2022
11.	Cyclone	11 September 2022	17 September 2022
12.	Volunteerism in Disaster Risk Management	25 September 2022	01 October 2022
13.	Hospital Preparedness	09 October 2022	15 October 2022
14.	School Safety	23 October 2022	29 October 2022
15.	Urban Flood	13 November 2022	19 November 2022
16.	Cold Wave	27 November 2022	03 December 2022
17.	Avalanche	11 December 2022	17 December 2022
18.	Mountain Hazards	25 December 2022	31 December 2022
19.	Earthquake	08 January 2023	14 January 2023
20.	Cold wave	22 January 2023	28 January 2023
21.	Hospital preparedness	12 February 2023	18 February 2023

22.	Heat Wave	26 February 2023	4 March 2023
23.	NPDRR (Hindi) Building local resilience in a changing climate	9 March 2023	10 March 2023
24.	NPDRR (English) Building local resilience in a changing climate	9 March 2023	10 March 2023
25.	Coastal hazards	26 March 2023	1 April 2023

NDMA E-Newsletter and blog

6.37 A digital monthly newsletter named “Aapda Samvaad”, is issued, informing and highlighting the stakeholders about major activities of NDMA, SDMAs, success stories on Disaster Risk Reduction (DRR), expert interviews, articles etc. The newsletter was widely shared electronically with various stakeholders, including major editors of media houses. Their reach is also optimized using various techniques on social media. The theme of News letter were as under:-

Sl.No.	Months	Theme
1.	April 2022	Heatwave
2.	May 2022	Cyclone
3.	June 2022	Landslides/ Floods
4.	July 2022	Earthquake
5.	August- September 2022	Cyclone/ Formation Day Special
6.	October 2022	Earthquake
7.	November 2022	Coldwave
8.	December 2022	Avalanche
9.	January 2023	Coldwave
10.	February 2023	Heatwave
11.	March 2023	DRR

Social Media Campaigns

6.38 In addition to awareness campaigns on TV and Radio, awareness campaigns related to prevention, mitigation and preparedness before, during and after disasters were also carried out through social media platforms using hashtags like heatwave, earthquake, floods, urbanfloods, lightning safety, coldwave, avalanche, Covid-19, India fights Corona, etc., throughout the year. Social media creatives and short films highlighting do's and don'ts were shared on social media platforms of NDMA, from time to time.

Twitter Report

6.39 NDMA's Tweets and Facebook updates are reaching a large number of people. Not only these appear on their personal accounts, these are also being shared by them. The updates are thus reaching to even secondary users who may or may not be following NDMA accounts but are reading its updates.

- Followers as on 31st March, 2023
: **3,89,063**
- Followers as on 31st March, 2022
: **3,33,410**
- Number of followers increased
: **55653**

Celebration of 18th Formation Day of NDMA

6.40 Celebration of 18th Formation Day of NDMA: 18th Formation Day of NDMA was celebrated on 28/09/2022 at Vigyan Bhawan, New Delhi with the theme "Volunteerism in Disaster Management". Sh. Nityanand Rai, Hon'ble Minister of State for Home, graced the occasion as the Chief Guest alongwith Minister of State for Home. Shri. Ajay Kumar Mishra as Special Guest. During the Valedictory Session, Dr. P. K. Mishra, Principal Secretary to the

Hon'ble Prime Minister was the Guest of Honour. In addition to the expert discussion on the theme, following two important documents/tools were also released on the occasion:

- i. Flood Risk Atlas for West Bengal and Andhra Pradesh
 - ii. Web based Dynamic composite Risk Atlas & Decision Support System.
- Inauguration by Hon'ble MoS (Home) Shri. Nityanand Rai :



- Address by Dr. PK Mishra, Principal Secretary to the Hon'ble Prime Minister: In his address he said that Volunteers form an integral part of the local disaster risk management force; it benefits both, the society at large and the individual volunteer by strengthening trust, solidarity and reciprocity among citizens, and by purposefully creating opportunities for participation. Volunteers, particularly youth volunteers play a very significant role in disaster management. Volunteers can be effectively utilized in social services, including public health, hygiene, education, safety, security and risk reduction of people; disaster management can't move with just Government's effort alone, it needs support of local communities, the volunteers, as the first responders, without their dedicated support, the disaster cannot be managed effectively.



More than 400 participants from different Ministries/Depts, Resident Commissioners, DGs of CAPFs, States/UTs, SDMAs, related organizations and trained Aapda Mitra volunteers attended the Formation Day. A small exhibition showing ERK and ERSS kits provided to the states under Up-scaling of Aapada Mitra scheme was made by UP, Assam, Meghalaya, HP, Bihar and Karnataka on the occasion.

6.41 Communication with States/UTs: NDMA has produced more than 160 short Films on Cyclone, Flood, Lightning, Heat Wave, Earthquake, Landslide, Avalanches, Cold Wave and Urban Flood disasters for awareness generation among the people. In addition to uploading these films on NDMA's website and YouTube channel, all States/UTs were requested to make use of these films for awareness generation in their respective States/UTs., from time to time.

Three important documents viz. Disaster Management (DM) Act, 2005, National

Disaster Management Policy, 2009 and National Disaster Management Plan (NDMP), 2019 were to be translated into Scheduled Regional languages. Respective States were requested to get these documents translated into their respective scheduled language(s) and put the same on their website for use by general public and other stakeholders. Three States viz. Gujarat, Sikkim & Tamilnadu have completed the task. Remaining States are being followed up regularly to expedite.

6.42 IEC material: NDMA has various short video spots, animation films, sign language

videos for awareness generation. These materials are available on NDMA's website as well as on NDMA's YouTube channel namely 'National Disaster Management Authority of India' for awareness generation. These materials are being used by NDMA from time to time on electronic and social media.

6.43 NDMA used the opportunity of awareness generation during the 35th Surajkund International Craft Mela, 2022 held from 23.03.2022 to 04.04.2022 at Surajkund, Faridabad, Haryana. Short films were run on 9 LED Screens during the period for awareness generation regarding Heat



6.45 The awareness generation actions enumerated above certainly have helped the people of the country in saving lives and livelihood. It may be appreciated that followership of NDMA's social media

Waves. In addition, 15000 pocket books were distributed to the Mela visitors during the Mela.

6.44. NDMA along with NDRF and NIDM participated in a special exhibition on NPDRR made during 10th to 13th March 2023 at Vigyan Bhawan during the 3rd Session of National Platform for Disaster Risk Reduction (NPDRR). NDMA showcased its guidelines, IEC material and pocketbooks. The pocketbooks contain do's & don'ts and safety measures on various disasters. Approximately 5000 pocketbooks were distributed to the visitors, including school children, college students, exhibitors, etc.



account i.e. Twitter has been gaining steady increase. IEC activities of NDMA have, thus, a very crucial element in awareness generation of the people and all stakeholders.

CHAPTER: VII

ADMINISTRATION AND FINANCE

General Administration

NDMA Secretariat

7.1 The NDMA Secretariat comprises five Divisions, namely (i) Policies, Plans, Rehabilitation & Recovery, Awareness Generation and Capacity Building & Training Division (ii) Mitigation Division (iii) Operations and Communications Division (iv) Administration and Coordination Division and (v) Finance and Accounts Division.

Policies, Plans, Rehabilitation & Recovery, Capacity Building & Training and Awareness Generation Division

7.2 The division deals with all matters pertaining to the formulation of policies, guidelines and approval of plans of all the Central Ministries/Departments as well as capacity building and awareness in all the States. Mainstreaming disaster management in development plans is also an important task of this division. Capacity Building and Training is another important work of this Division. It undertakes various activities and projects towards capacity building and training.

7.3 Public Relation and Awareness Generation, major subject to be dealt with by the NDMA, is another task of this division. This division has taken up the task to lead this effort and ensure that the culture of preparedness is inculcated at all levels. It also handles conceptualization and execution of awareness generation

campaigns involving both electronic and print media, besides involvement of the community and other stakeholders at the grassroots level. The total sanctioned staff in this division is 20, comprising one Advisor (JS level), four Joint Advisors (Director Level), four Assistant Advisors (US level) one Section Officer and ten support staff.

Mitigation Division

7.4 The responsibilities of this division are to take up Risk Mitigation Projects at the national level in conjunction with the Ministries of the Central Government and the States (pertaining to disasters like cyclones, earthquake, floods, landslides and failsafe Communication and IT plan etc.). It also guides and commissions specialized studies and projects like Micro-Zonation, Vulnerability Analysis, etc. It also supervises and monitors the design and implementation of the mitigation projects to be undertaken by the Ministries themselves. The total sanctioned staff in this division is 14, comprising one Advisor (JS level), two Joint Advisors (Director level), two Assistant Advisors (US level) and nine support staff.

Operations and Communication Division

7.5 NDMA needs to be in a state of readiness to render advice to the Government on disaster situations for which it must remain fully apprised of the latest information. For this, NDMA has an Operations Centre which

provides disaster specific information and data inputs of NDMA Officers. The Division co-ordinates the efforts of all stakeholders during the response stage of any Disaster. It also has a major role in training and capacity building of first responders in the country. The Division conducts State and Multi-State level Mock Exercises ensuring participation of all stakeholders including Central Agencies, Armed Forces and CAPFs. The division is also involved in DM related training activities including training on IRS and raising awareness at premier institutions in the country. In addition, the division is closely involved with the tasks relating to Rehabilitation and Recovery. The Division vets the Crisis Management Plans of all the Central Ministries/Departments.

- 7.6 The Division implements communication and IT related solutions for NDMA. It also advises and carries out capacity building of all Central and State Ministries/Departments in the field of Communication, IT and GIS. The total sanctioned staff in this division is 15, comprising one Advisor (JS level), two Joint Advisor (Director level), three Assistant Advisors (US level), two Duty Officers (US level) and seven support staff.

Administration and Coordination Division

- 7.7 This division is responsible for all aspects of Administration and Coordination. Its activities involve extensive interface with the Ministries/ Departments and States. This division also provides administrative and logistic support to the Members and the staff of the NDMA at all levels. The total sanctioned staff in this division is 22, comprising one Joint Secretary, one Director, two Under Secretaries, one

Assistant Director (Official Language), two Section Officer and 15 support staff.

Finance and Accounts Division

- 7.8 The Finance and Accounts Division deals with the work relating to maintenance of accounts, preparation of budget, financial scrutiny of proposals, etc. This Division also monitors progress of expenditure and advises NDMA on all matters falling within its delegated financial power. The total sanctioned staff in this Division is 8, comprising one Financial Advisor (JS Level), one Director, one Asst. Financial Advisor (US Level), one Section Officer, two Asst. Section Officer (ASO) and 2 support staff. Details of its functions and responsibilities are:

- Advise NDMA on all matters falling within the field of delegated powers.
- Associate closely with the formulation of schemes and important expenditure proposals from their initial stages.
- To watch settlement of audit objections, Inspection reports, Draft Audit Paragraph etc.
- To ensure prompt action on Audit Reports, Reports of Public Accounts Committee (PAC) and Estimates Committee.
- To ensure timely submission of periodical reports and returns.
- Preparation and Monitoring of budget of NDMA

- 7.9 The accounts of NDMA are maintained by the office of Chief Controller of Accounts (CCA), Ministry of Home Affairs, Payment and receipt functions for NDMA are also managed by Ministry of Home Affairs.

Finance and Budget:

The Scheme wise Budget Estimate, Revised Estimate & Expenditure for the period April 2022 to March, 2023 are as follows:

(Rs. in Crores)

Name of the project	B.E 2022-23	RE 2022-23	RE 2022-23 + Re-app. from MHA	Exp. up to 31.03.2023
National Cyclone Risk Mitigation Project (NCRMP) with World Bank Assistance	300.00	165.60	124.13	101.70
Other Disaster Management Projects - (ODMP)	21.07	21.07	21.07	14.36
Establishment Charges	63.73	58.30	65.25	64.67
Coalition for Disaster Resilient Infrastructure Society (CDRI)	50.00	50.00	50.00	50.00

Grant No. 49 MHA (Figures in Crores)					
MH	Scheme	B.E. 22-23	RE 22-23	FE 22-23+ Re-app from MHA	Exp. up to 31.3.2023
2245	ODMP	7.68	7.68	7.68	2.61
3601	ODMP (Release to State Govt.	13.03	13.03	13.03	11.40
3602	Release to UT w/o Legis)	0.36	0.36	0.36	0.35
	Total (a)	21.07	21.07	21.07	14.36
2245	NCRMP (Est. Charges)	30	16.40	16.40	6.23
3601	NCRMP (GIA)	270.00	149.20	107.74	95.47
	Total (b)	300	165.60	124.13	101.70
2245	Establishment Charges	63.73	58.30	65.25	64.67
	Total (c)	63.73	58.30	65.25	64.67
2245	CDRI Establishment Charges	50.00	50.00	50.00	50.00
	Total (d)	50.00	50.00	50.00	50.00
	Grand Total NDMA	434.80	294.97	260.45	230.73

Annexure I

COMPOSITION OF NDMA

Present Composition

1.	Hon'ble Prime Minister of India	Chairperson
2.	Shri Kamal Kishore	Member (Since 16.02.2015) Secretary (In-charge since 01.10.2021)
3.	Lt Gen (Retd) Syed Ata Hasnain, PVSM, UYSM, AVSM, SM, VSM & BAR	Member (Since 21.02.2020)
4.	Shri Rajendra Singh	Member (Since 20.02.2020)
5.	Shri Krishna Swaroop Vatsa	Member (Since 04.05.2020)

Former Members

1.	Gen. N. C. Vij	Vice-Chairperson (28.9.2005 to 27.9.2010)
2.	Shri M. Shashidhar Reddy	Vice Chairperson (16.12.2010 to 16.06.2014) Member (11.10.2010 to 16.12.2010) Member (05.10.2005 to 04.10.2010)
3.	Lt. Gen. (Dr.) J. R. Bhardwaj	Member (28.09.2005 to 27.09.2010)
4.	Dr. Mohan Kanda	Member (05.10.2005 to 04.10.2010)
5.	Prof. N. Vinod Chandra Menon	Member (28.09.2005 to 27.09.2010)
6.	Smt. P. Jyoti Rao	Member (14.08.2006 to 13.08.2011)
7.	Shri K. M. Singh	Member (14.12.2011 to 11.07.2014) Member (28.09.2005 to 27.09.2010)
8.	Shri B. Bhattacharjee	Member (15.12.2011 to 11.07.2014) Member (21.08.2006 to 20.08.2011)
9.	Shri J. K. Sinha	Member (04.06.2012 to 11.07.2014) Member (18.04.2007 to 17.04.2012)
10	Shri T. Nandakumar	Member (8.10.2010 to 28.2.2014)
11.	Shri V. K. Duggal	Member (22.06.2012 to 23.12.2013)

12.	Maj. Gen. J. K. Bansal	Member (6.10.2010 to 11.07.2014)
13.	Muzaffar Ahmad	Member (10.12.2010 to 03.01.2015)
14.	Dr. Harsh K. Gupta	Member (23.12.2011 to 11.07.2014)
15.	Dr. K. Saleem Ali	Member (03.03.2014 to 19.06.2014)
16.	Shri K. N. Shrivastava	Member (03.03.2014 to 11.07.2014)
17.	Shri R. K. Jain, IAS (Retd.)	Member Secretary (23.02.2015 to 30.11.2015) Member (01.12.2015 to 30.11.2018)
18.	Lt. Gen (Retd.) N. C. Marwah, PVSM, AVSM	Member (30.12.2014 to 29.12.2019)
19.	Dr. D. N. Sharma	Member (19.01.2015 to 18.01.2020)

Annexure II

LIST OF SENIOR OFFICERS OF THE NDMA

Present Composition

1.	Shri Kamal Kishore, Member (Since 16.02.2015) & Secretary (In-charge) (since 01.10.2021)
2.	Shri Alok, Additional Secretary (Since 23.01.2023)
3.	Shri Harsh Gupta, Project Director, NCRMP (since 28.04.2022)
4.	Shri Kunal Satyarthi, Advisor (Policy & Planning) (since 24.09.2021)
5.	Ms Sreyasi Chaudhuri, Joint Secretary (since 17.01.2020)
6.	Shri Ravinesh Kumar, Financial Advisor (since 10.10.2017)
7.	Col. K. P Singh, Advisor (Operations) (since 12.09.2022)

