



# ANNUAL REPORT 2021-22



**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
CBRN	Chemical, Biological, Radiological and Nuclear
CDRI	Coalition for Disaster Resilient Infrastructure
CSSR	Collapsed Structure Search and Rescue
DM	Disaster Management
DPR	Detailed Project Report
EFC	Expenditure Finance Committee
EW	Early Warning
FICCI	Federation of Indian Chambers of Commerce and Industry
GIS	Geographic Information System
Gol	Government of India
HPC	High Powered Committee
IMD	India Meteorological Department
INSARAG	International Search and Rescue Advisory Group
LBSNAA	Lal Bahadur Shastri National Academy for Administration
MFR	Medical First Responder
MHA	Ministry of Home Affairs
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
OFC	Optical Fiber Cable
R&D	Research and Development
SAR	Search & Rescue
SDRF	State Disaster Response Force
UTs	Union Territories



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# CHAPTER 1

## 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). This approach is based on the conviction that development cannot be sustainable unless disaster mitigation is built into 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

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.	Shri Sanjeeva Kumar	Member Secretary (27.01.2021 to 30.09.2021)
3.	Lt Gen Syed Ata Hasnain, PVSM, UYSM, AVSM, SM, VSM & BAR (Retd)	Member (Since 21.02.2020)
4.	Shri Rajendra Singh	Member (Since 02.02.2020)
5.	Shri Krishna Swaroop Vatsa	Member (Since 04.05.2020)

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

- 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 a number of 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 2

## 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 Gol 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 Gol 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 (NCMC).

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 techno-legal 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 3

## 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 4.1.

3.4 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.

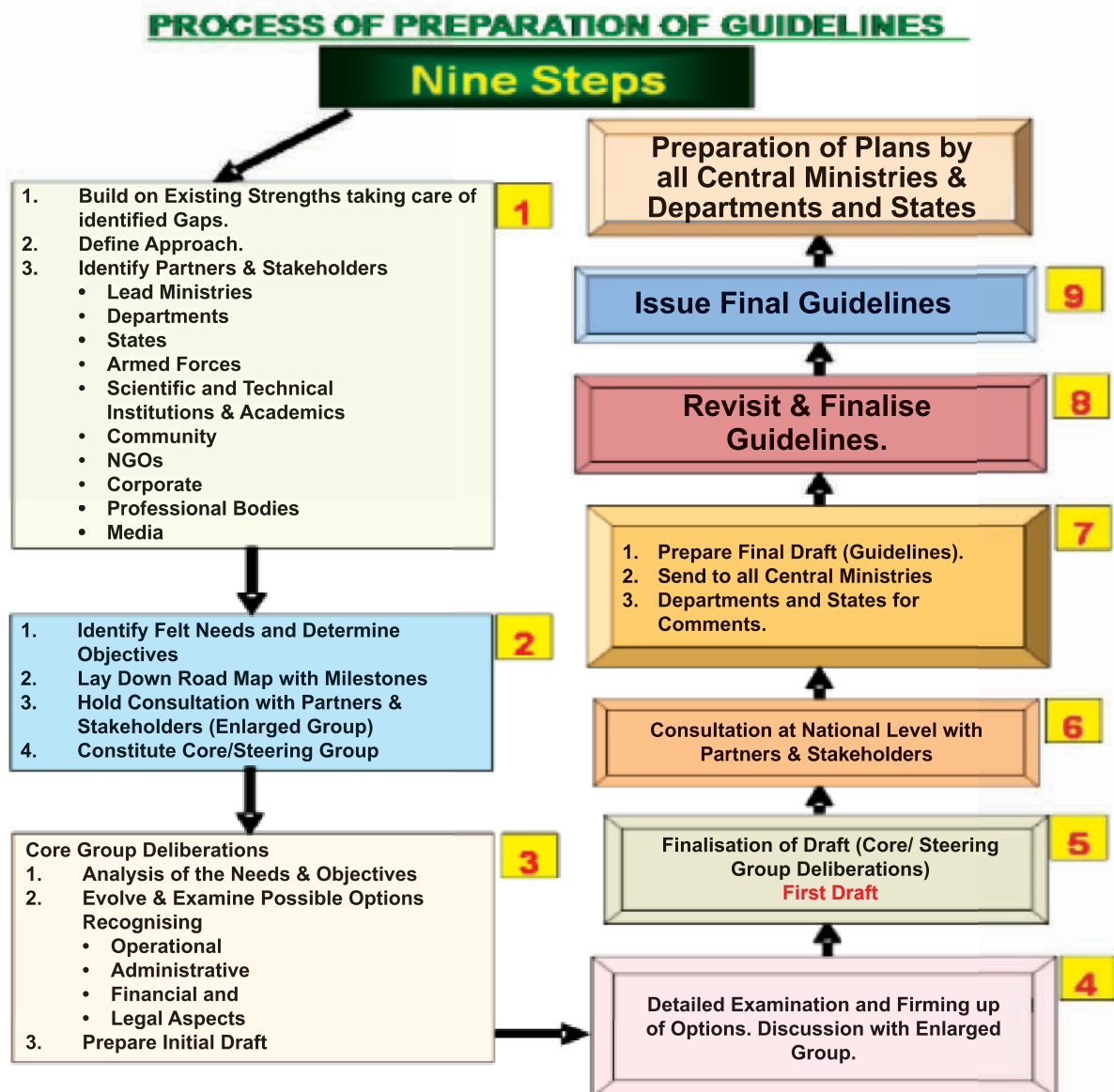


Figure 3.1



### 3.5 Guidelines and Reports & Other documents released:

#### (i) 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.	National Guidelines for Preparation of Action Plan – Prevention and Management of cold Wave and Frost	June 2021

### (ii) 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)

### 3.6 Guidelines/ Reports released during 2021-22 :

#### (i) Cool Roof : House Owners' Guide to alternate roof cooling solutions

As average rise in temperatures are set to reach 1.5 degrees, the number of heat wave spells in the country are rising rapidly. During peak summer seasons, indoor temperature can rise up to 45 degrees. With heat island effect in urban areas, the impact is far more severe on people's health, family expenditure, and productivity. This handbook aims to guide home owners with roof cooling solutions using techniques and material that is affordable and easy to use in existing homes. Due consideration has been made for prevailing building typologies and varying geo-climatic zones across India. House owners can use this handbook to select solutions that are best suited to their location, affordability and ease of implementation.

#### (ii) National Guidelines For Preparation of Action plan - Prevention and Management of Cold Wave and Frost 2021

NDMA has prepared the "National Guidelines for preparation of Action Plan - Prevention and Management of Cold Wave and Frost" and released the Guidelines in September, 2021. Following the release of the Guidelines, NDMA forwarded the Guidelines to all concerned stakeholders and particularly the Cold wave prone States/ UTs in the month of October, 2021. The States/ UTs were requested to develop their Cold Wave Action Plan (CWAPs) for preparedness and mitigation measures at the State level as well as District level.

### 3.7 Guidelines and other documents under preparation:

**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 requirement, 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 is 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.

### **3.8 Workshop/ Training Programmes conducted by NDMA :**

- I. The National Disaster Management Authority organised a National Webinar on 'Conducting Hazard Vulnerability and Risk Assessment (HVRA) Studies for the State/ UT officials on 7th April 2021. The

webinar engaged technical experts to impart training and capacity building to officials via lectures / presentations/ demonstrations to conduct an HVRA for their jurisdiction and provide risk mitigation strategies. The training/deliberations during the webinar aimed to enhance the technical knowledge of the officers, thereby enabling them to carry out smaller components of the HVRA by themselves. It also assisted the States/UTs in developing and updating the indicators under Sendai Framework for Disaster Risk Reduction (SFDRR), Paris Agreement, and PM's 10-Point Agenda.

- II. Training-cum-Workshop to facilitate Ministries/ Departments in drafting their Disaster Management Plan (DMP): In order to facilitate Ministries/ Departments in drafting their Disaster Management Plan (DMP), NDMA organized a Training-cum-Workshop on 8th September, 2021 in online mode from NDMA Bhawan with (i) D/o Consumer Affair, (ii) D/o Food and Public Distribution, (iii) D/o Higher Education, (iv) D/o Health and Family Welfare, (v) M/o Social Justice and Empowerment, (vi) D/o Empowerment of Persons with Disabilities (vii) M/o Tribal Affairs, (viii) M/o Mines, (ix) D/o Science and Technology, (x) D/o Scientific and Industrial Research, (xi) M/o New and Renewable Energy (xii) D/o Bio-Technology (xiii) M/o Development of North Eastern Region (xiv) M/o Micro, Small and Medium Enterprises.
- III. Workshop for the Nodal Officers of Ministries/ Departments dealing with Disaster Management was organized on 2nd March, 2022

at Vigyan Bhawan, New Delhi to facilitate Ministries/ Departments in preparation of their DMP. The workshop was inaugurated by Shri Ajay Kumar Bhalla, Union Home Secretary, Govt. of India and experts from relevant fields were invited to make presentations on the various disaster related issues. The intent of the workshop was to chart a roadmap for generating awareness towards any and every kind of disaster and to encourage Ministries/Departments to prepare their Disaster Management Plans and help them mainstream disaster risk reduction in their programmes and projects.

Technical sessions were held on:

- (i) Overview of Disaster Management in India,
- (ii) Disaster Management Planning in India and
- (iii) Hands on Group Exercise by Ministries / Departments of Govt. of India on Preparation of DM Plans, which included active discussions and deliberations.

This was followed by Group wise presentation by Ministries/ Departments. Dr P.K Mishra, Principal Secretary to Hon'ble Prime Minister gave valedictory address for the workshop and directed nodal officers to integrate disaster management in their programmes and activities. This workshop is a step towards creating a more effective, more responsive system of disaster risk management and to work towards a safer country, safer world and more resilient communities.

- IV. First Regional Conclave of SDMAs: First Regional Conclave of State Disaster Management Authorities

(SDMAs) involving 11 coastal and island States and Union Territories of Tamil Nadu, Karnataka, Kerala, Andhra Pradesh, Odisha, West Bengal, Goa, Andaman & Nicobar Island, Dadra and Nagar Haveli and Daman & Diu, Lakshadweep and Puducherry was organized in Chennai, in collaboration with the Government of Tamil Nadu on 8th -9th March, 2022. The purpose of the Workshop was to ensure effective coordination between NDMA and SDMA and to promote collective learning between different SDMAs. This platform shall strengthen linkages among SDMAs and also between SDMA-NDMA for effective and efficient Disaster Risk Reduction (DRR) initiatives. The workshop provided a platform to SDMAs/ Institutions to share their best practices, lessons learnt and to discuss other issues / challenges pertaining to disaster management in their States/UTs. States / UTs and other specialised agencies also shared their scientific and technological innovations, which can be replicated by other SDMAs This will result in enhanced capacity of States, cross learning between SDMAs and efficient SDMA-NDMA coordination.

- V. National Webinar on Heat Wave 2022: In order to prepare for the Heat wave in the year 2022, National Disaster Management Authority (NDMA) organised National Webinar on Heat Wave 2022 in collaboration with Bihar State Disaster Management Authority (BSDMA), Government of Bihar on 15th March 2022. The broad objectives of workshop included information sharing by experts, experiences sharing and lessons learnt for sustainable long

term mitigation measures and future course of action on heat wave.

### 3.9 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.

### 3.10 Disaster Management Plan of Ministries/ Departments of Government of India:

(a) 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 Gol' and circulated the same to all concerned. This is available on NDMA's web site [www.ndma.gov.in](http://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.

(b) 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

(c) 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.

(d) (As on 31.03.2022) 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

(e) (As on 31.03.2022) 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

### 3.11. Schemes under implementation:

#### (i) Implementation of the Sendai Framework for Disaster Risk Reduction:

The Scheme - Implementation of the Sendai Framework for Disaster Risk Reduction - has been approved 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 2025-26 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 :

- (i) Hiring of one Sr. Consultant at the rate of Rs. One Lakh per month.

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

The details of amount released to States / UTs under the Scheme (as on 31.03.2022) are as under:

Financial Year	No. of States / UTs to whom fund released	Total amount released
2018-19	31 (29 States and 2 UTs)	Rs.594.56 lakh
2019-20	3 (3 UTs)	Rs.22.16 lakh
2020-21	8 (7 States 1 UT)	Rs.134.90 lakh
2021-22	13 (11 States 2 UTs)	Rs.235.26042 lakh
	<b>Total</b>	<b>Rs.986.88042 lakh</b>

- (ii) **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 - has been approved 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 2025-26 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 amount released to States under the Scheme (as on 31.03.2022) are as under:

Financial Year	No. of States / UTs to whom fund released	Total amount released
2018-19	27 States	Rs. 524.30 lakh
2019-20	18 States	Rs. 315.00 lakh
2020-21	11 States	Rs. 221.20 lakh
2021-22	12 (11 States and 1 UT)	Rs.287.00 lakh
	<b>Total</b>	<b>Rs.1347.50 lakh</b>

### 3.12. Projects under implementation:

#### (i) Assessment of Vulnerability and Threshold of heat related health hazards in four Cities of India

National Disaster Management Authority (NDMA) has 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 submitted its 1st deliverable / interim report and the same was accepted by NDMA. PHFI also organized a Dissemination workshop in association with NDMA through Video Conferencing on 10.01.2022 to share the outcome of the project with concerned States and other stakeholders. PHFI has submitted its final report for the Project. 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.

## **(ii) 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:

1. Study showing relationship between Outdoor thermal comfort, Meteorological parameters and morphological parameters.
2. Heat Vulnerability map for 2 cities in Vidarbha region.
3. Heat Action Plan for a selected city.
4. Generic methodology for HV mapping.
5. Framework for model HAP.

VNIT submitted the 1st six monthly report for the project and same was accepted by NDMA. VNIT has also submitted 2nd six monthly report of the project. The report was reviewed in NDMA and comments on the report were shared with VNIT. VNIT has been suggested to integrate the study with the national policy and plans and the study should suggest the way forward or look at the changes in part and what can be recommended for future planning in the urban areas. VNIT. VNIT will furnish further progress reports on six monthly bases and next

report will be received in April, 2022. The Study is likely to be completed by December, 2023.

### **(iii) Development of Flood Early Warning System in Guwahati Town**

NDMA had awarded the project to The Energy and Resources Institute (TERI), New Delhi for Development of Flood Early Warning System in Guwahati Town at a tentative cost of Rs.49,20,664 /- in 2018-19 and work is under progress.

The deliverables of the project comprise following activities:

1. (i) Primary and secondary data collection, surveys and analysis and (ii) Setting up the Model and Model simulation and tuning.
2. (i) Analysis of Results and Validation and (ii) Graphical User Interface, GUI Training, Draft and Final Report of the study with key findings and Review of the work. The flood warning system developed by TERI, to be used by Guwahati Municipal Corporation will be run by them in the presence of TERI team before handing over the final product to NDMA / Assam SDMA.

The 1st deliverable of the Project has been received and accepted by NDMA. Report of 2nd and final deliverable of the Project has been submitted by TERI. The report was examined by NDMA and TERI was asked to submit the revised report after incorporation of NDMA's comments and inputs of other stakeholders. TERI team has been requested to work in tandem with ASDMA and give hands on training to

people who are going to use it.

### **(iv) 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:

- To collect the information on indigenous knowledge and traditional practices of forest fire prevention and control from different States.
  - 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.
  - To analyze how to mainstream traditional practices into modern fire -fighting.
2. 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.

# CHAPTER 4

## DISASTER RISK MITIGATION PROJECTS

### National Cyclone Risk Mitigation Project (NCRMP)

- 4.1 The Government of India has approved the National Cyclone Risk Mitigation Project (NCRMP) with the overall objective of minimizing vulnerability to cyclones and making people and infrastructure disaster resilient in harmony with the conservation of the coastal eco-system in the cyclone hazard prone States/Union Territories of India. 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 at an outlay of Rs.1496.71 crore, to be completed within 5 years. With frequent experience of Cyclones, the cost estimate for NCRMP Phase-I was revised to Rs. 2331.71 crore in July 2015 by including additional infrastructure and completion time was accordingly revised to 31st March 2018. After considering additional requests from the project States, the project outlay was further revised to Rs. 2541.60 crore in May 2017, with date of completion was 31st December 2018. The first phase of NCRMP has been completed.
- 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 Rs. 2361.35 crore with project completion date as 15th March 2021. The outlay for NCRMP Phase II has been revised to Rs. 2059.83 crore due to cancellation/surrendering of USD 80 million during Dec 2020, with revised date of completion as 15th September 2022.
- 4.4 Under NCRMP Phase- II, Rs. 1327.38 crore of Central Share was released to the States till 31.03.2022 and during the FY 2021-22 (upto 31st March 2022), Rs. 158.92 crore has been released to the States. Early Warning and Dissemination

System (EWDS) has been installed & commissioned in Andhra Pradesh and Odisha and same is under progress in the State of Goa, Karnataka & Kerala. Total 775 nos. of Multi-Purpose Cyclone Shelters (MPCS), 1291.52 Km of Roads, 110.03 Km of Saline embankment (SE), 1077.93 Km Underground Electric Cabling (UGC) and 34 nos. of Bridges were constructed till 31st March 2022. During 2021-22, 45 nos. of Multi-purpose cyclone shelters, 465.5 Kms of UGC and 12.96 Km Saline Embankment has been constructed upto 31st March 2022.

- 4.5 As part of reducing disaster risks and strengthens the capacity of various govt. departments and communities, training and capacity building is one among the subcomponent of the project. 15681 Govt. officials have been trained through 648 nos. of Capacity Building Trainings on various topics as well as 61099 community representatives have also got trained through 2942 Shelter Level Trainings under NCRMP Phase I & II.

- 4.6 Apart from that, 766 Cyclone Shelter Management & Maintenance Committees has also been constituted across 8 project States to effectively manage the shelter arrangements. Each committee was comprised with the participation of various govt. officials, community representatives, women & weaker section representatives etc.

- 4.7 The Cyclone Shelters constructed under NCRMP were used for various relief and rehabilitation purposes during the COVID-19 pandemic and recent cyclones. 31 such MPCS in Gujarat state have been utilized as evacuation centers when cyclone Tauktae hit Gujarat on the western coast and 4080 people from 25 villages were shifted to MPCSs. Similarly, 316 MPCSs were used as storehouse to stock relief materials and 49150 people were evacuated to different MPCSs constructed in the States of West Bengal & Odisha when cyclone Yaas hits the eastern coast.

Sr. No.	Name of Activity	Total Planned (Phase I & II)	Total Achieved (Phase I & II) (Upto March 2022)	Total During 2021- 22
1	MPCS (No.)	796	775	45
2	Road (Kms)	1291.52	1291.52	0
3	UGC (Kms)	1258.46	1077.93	465.5
4	Bridge (No.)	36	34 Completed & 75% progress achieved (Cumulative) for 2 Bridges under NCRMP Phase II	35% progress achieved for 2 Bridges under NCRMP Phase-II
5	SE (Kms)	118.18	110.03	12.96

## Photographs of Assets created under NCRMP Phase-II



Figure 1: MPCS at Zankar, Gujarat



Figure 2: MPCS at Maktupur, Gujarat



Figure 3: UGC work under progress at Alibag, Maharashtra



Figure 4: SE work under progress at Benavale, Maharashtra



Figure 5: SE work under progress at Manikatta, Karnataka



Figure 6: Bridge work under progress at Udpi, Karnataka

### Photographs of Assets created under NCRMP Phase-II



Figure 7: Road at Mangalore, Karnataka



Figure 8: MPCS at Hosebette, Karnataka



Figure 9: MPCS at Kasargude, Kerala



Figure 10: MPCS at Taranagar, West Bengal



Figure 11: UGC at Digha, West Bengal



Figure 12: MPCS at Dabolim, Goa

### Photographs of Assets created under NCRMP Phase-II



Figure 13: Mono pole tower of EWDS at MPCs, Goa



Figure 14: Spun tower of EWDS at MPCs, Goa

### Photographs of Assets created under NCRMP Phase-I



Figure 1: Bridge at Narayanapuram, Andhra Pradesh



Figure 12: MPCs at Solmon, Andhra Pradesh



Figure 3: SE at Kruthivenu, Andhra Pradesh



Figure 4: EWDS (Alert Siren) at Donuku, Andhra Pradesh

## Photographs of Assets created under NCRMP Phase-I



Figure 5: Road at Dindi, Andhra Pradesh



Figure 6: EWDS (Alert Siren) at Basudevapur, Odisha



Figure 7: MPCS at Satrusola, Odisha



Figure 8: SE at Chasisaba, Odisha

### 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:-

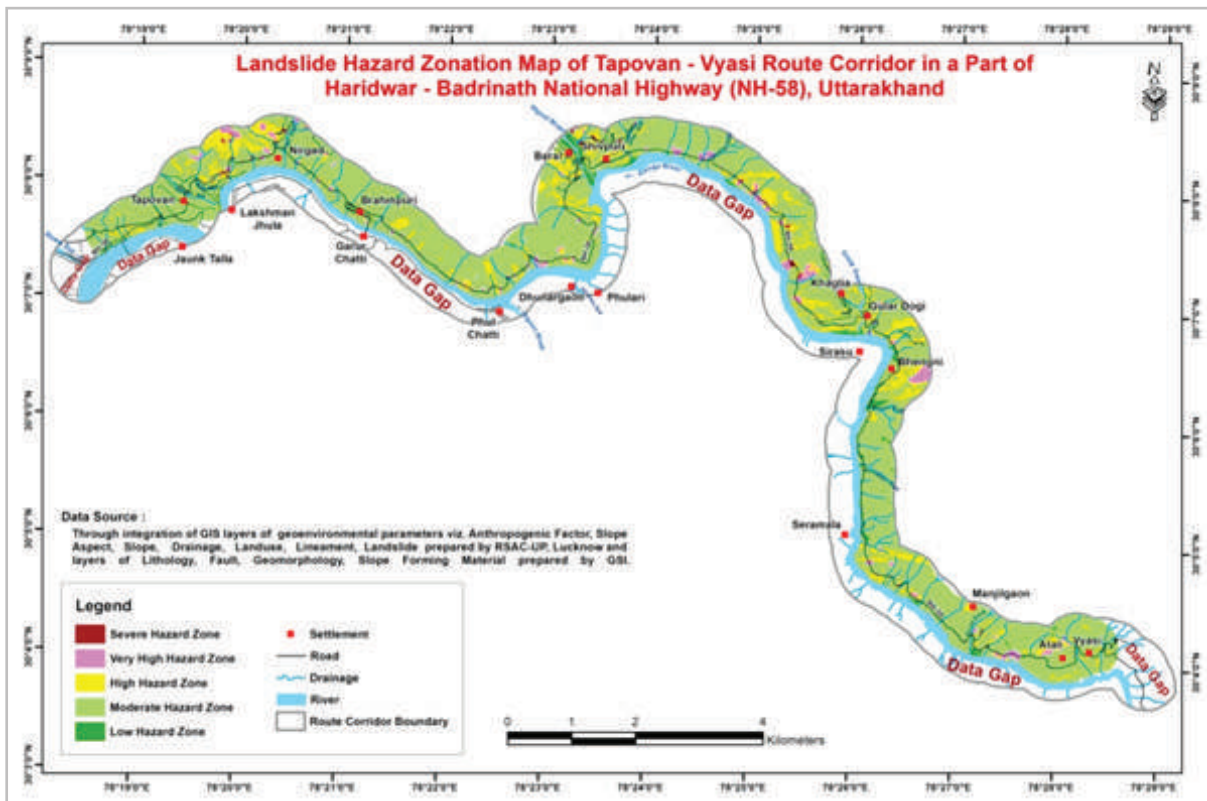
### A. Interventions- Natural Hazards

#### LANDSLIDE

#### 4.9 Pilot Project on Generation of Meso Level 1:10,000 Scale User-Friendly LHZ Maps and Landslide Inventory for Tapovan-Vyasi Corridor of Haridwar-Badrinath National Highway, Uttarakhand

NDMA approved and initiated the pilot project on "Generation of Meso Level 1:10,000 Scale User-Friendly LHZ Maps and Landslide Inventory for Tapovan-Vyasi Corridor of Haridwar - Badrinath





National Highway, Uttarakhand” in May 2018. The project is in collaboration with Remote Sensing Application Centre (RSAC), Uttar Pradesh in which Survey of India (SoI) and Geological Survey of India (GSI), IIT-Roorkee, and Uttarakhand Government are providing their technical inputs and logistical support. Landslide Hazard Zonation (LHZ) maps of 1:10,000 scale and landslide inventory of 142 landslides are created under this project through high-resolution satellite data. Deliverables has been achieved and the project is under closure.

#### 4.10 Landslide Risk Mitigation Scheme (LRMS)

- NDMA approved the ‘Landslide Risk Mitigation Scheme (LRMS)’ in July 2019 under Improving Disaster Risk Governance of SDMA’s/ DDMA’s. The scheme aims to provide financial and technical support to landslide prone states for site specific landslide mitigation.
- LRMS is a pilot scheme to demonstrate the benefits of landslide mitigation measures along with landslide monitoring, awareness generation, capacity building/ training, etc.
- MoU was signed with the State Disaster Management Authorities (SDMAs) of Sikkim, Mizoram, Nagaland, and Uttarakhand for implementation of the scheme. The project is being implemented in all four states.
- Physical work has been completed at Nagaland.
- Around 80% of physical work has also has been completed in Mizoram

and site work is under progress in Uttarakhand and Sikkim.

#### 4.11 Training programs on 'Landslide Mitigation and Detailed Project Report (DPR) Preparation'.

NDMA has approved two and five days training programmes on 'Landslide Mitigation and Detailed Project Report (DPR) Preparation' in collaboration with expert institutions like Indian Institute of Technology (IIT), Indian Institute of Science (IISc) Bangalore, North Eastern Hill University (NEHU)-Shillong, Central Building Research Institute (CBRI), Central Road Research Institute (CRRI), National Institute of Technology (NIT)-Mizoram, etc. These institutes imparted 18 trainings to the state government officials as the state governments are facing difficulties in preparing the DPR on landslide mitigation and stabilization. So far, more than 430 participants from landslide affected states/ UTs, Central Government Departments such as BRO, NHAI, GSI, etc. participated in the training programmes. During, Covid-19 period trainings were conducted through an online platform. Now, project will be closed soon.

#### 4.12 Creation, Periodic Review/ Updation of Building Codes on Landslide Resistant Features

NDMA is preparing the following three guidelines in collaboration with IIT Roorkee and Central Building Research Institute (CBRI)-Roorkee under Bureau of Indian Standards (BIS) Committee i.e., CED 48 and CED 56:

- Guidelines on 'Determination of Rock Mass Shear Strength in Bedrock of

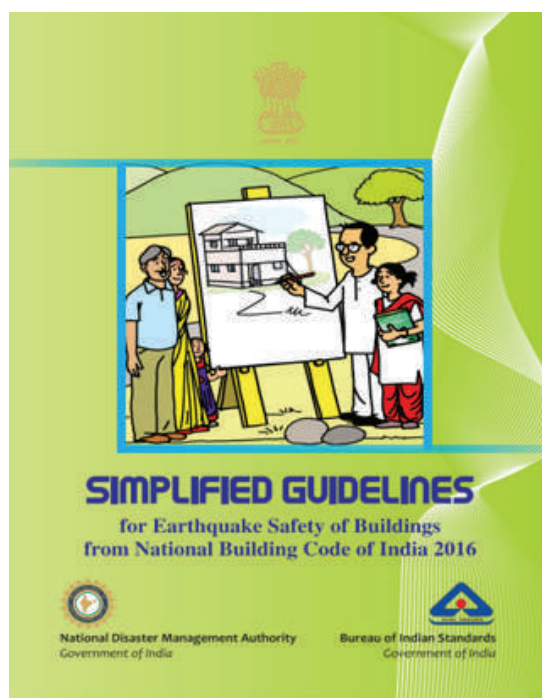
Landslide Affected Slopes'

- Safety and mitigation measures for the buildings and infrastructures in landslides affected areas
- Guidelines on micro piles for mitigation of landslide or slope stabilization ... The MoU was signed on with IIT Roorkee, CBRI-Roorkee, and the Bureau of Indian Standards (BIS) under BIS committees i.e., CED-48 & CED-56.

## EARTHQUAKE

#### 4.13 Simplified Guidelines for Earthquake Safety of Buildings from National Building Code of India 2016

NDMA in association with the Bureau of Indian Standards (BIS) and Council of Scientific and Industrial Research-Central Building Research Institute has developed a simplified guideline based upon Indian Standard codes and National Building Code-2016, explaining



the basic requirement of earthquake-resistant constructions in the interest of the common public as a whole. Simplified guideline based upon BIS codes and NBC-2016 is being developed at the cost of 10 Lakh.

This Guide focuses to address the aspiration of potential homeowners, and provides the basic information that they should have when constructing individual houses or buying flats in multi-storey buildings. It intends to generate awareness among the common people about the basis, mandatory rule that is applicable in the construction, purchase and maintenance of houses/flats. It consists of illustrative pictures/cartoons depicting salient features of BIS and NBC-2016. This Guide provides the basic information on five aspects related to the construction or purchase of a house, namely:

- About NBC 2016 - Its applicability and use,
- Site - Suitable Site to Construct a House,
- Architectural Form - Appropriate Geometry and Sizing of a House,
- Structural Safety - Quality of Materials for Constructing a House and Special Engineering Details of a House, and
- Regularity Mechanism - Competent Hands (Professionals & Artisans) to Construct a House, and Role & Responsibility of Stakeholders.

The final guideline was prepared and launched on the 17th Formation day of NDMA by Principal Secretary to Prime

Minister on 28th Sep 2021. The guideline was circulated in all the states/Ut's for its effective utilization.

#### **4.14 Earthquake Disaster Risk Index (EDRI-II) for 60 Towns**

Identification of risk for any particular hazard in an area is necessary. The starting point for reducing disaster risk lies in the knowledge of hazards and the physical, social, economic and environmental vulnerabilities. The different ways in which hazards and vulnerabilities are changing in the short and long term needs to be documented, followed by action taken on the basis of that knowledge.

To identify the impending risk in the cities with respect to earthquake in the country, earlier Phase-I study on Earthquake Disaster Risk Index of 50 towns and 1 District was carried out and was completed successfully in 2019. In continuation, the next phase of the project is planned to evaluate the risk index for new 60 cities apart from the previous 50. The work of the Phase-II has been awarded to Malaviya National Institute of Technology (MNIT), Jaipur at the cost of 116.2 lakh for a period of 24 months. The risk index will be the combination of hazard, vulnerability, and exposure to the city formulated in a single index. It will provide information about the impending seismic risk to the city and give an Inter-comparison of the risk among the cities and will help to take appropriate action for disaster preparedness and response measure to avert the impending risk. The methodology to carry out the risk assessment is under finalization. After the finalization of the methodologies, the

field survey would be carried out in 60 cities, to evaluate the risk.

#### **4.15 Development of Resource Material on Earthquake Engineering**

Engineers and architects play a major role in planning and creating a seismic resilient built environment. Educating and training the professionals about the latest technology, research and innovation in the field of earthquake engineering from the undergraduate level is seen to be necessary for fresh graduates to have ample technological knowledge about earthquake engineering, which was only available in the post-graduate levels till now.

NDMA has taken an initiative to develop the teaching resource material on Earthquake Engineering/Architecture for the undergraduate in the disciplines of Civil Engineering and Architecture through IIT Bombay with cost of 192 Lakhs. The main aim of developing the resource material is to improve the availability, and accessibility of basic concepts in earthquake engineering so as to ensure widespread knowledge dissemination about the seismic safety of the built environment. Five subjects namely Structural Dynamics, RC-Structures, Earthquake Geotechnical Engineering, Steel Structures and Architectural Studio are being developed by the lead experts. It is planned that these courses would be pilot offered in the academic session to the undergraduate students in Tier I/ II college. The development of these elaborate course material will fill the gap of non-availability of essential resource material for earthquake engineering at the undergraduate level. It will also enhance

the understanding of freshly graduating civil engineers and architects to enable them to produce earthquake-resistant infrastructure, thereby help in achieving the vision of 'disaster resilient India.'

#### **4.16 Probabilistic Seismic Hazard Mapping of India (PSHM)**

NDMA has taken an initiative with IIT Madras to update the Earthquake Hazard Map of India at the cost of Rs12.3 lakhs. The final report has been developed by the IIT Madras. Probabilistic seismic hazard analysis for PGA, and spectral accelerations at various periods have been carried out for all the grid points spread over the Indian land mass. The estimates are derived for each region using the corresponding applicable ground motion prediction equations GMPEs. The final hazard contours are arrived from three approaches, which are fault-based, circular smoothing based and elliptical smoothing. The project has been monitored cum evaluated by the Earthquake Engineering committee of CED-39 of the Bureau of Indian Standards. It has been recommended in the 32nd Meeting of the CED-39 Committee. The map will be helpful for different stakeholders in the analysis and design process and will be in line with the modern standards followed worldwide.

#### **4.17 Creation, Periodic Review & Updation/ Revision of Building Codes for Earthquake Resistant Build Environment**

Based on the deliberations of the CED-39 Committee of BIS which is a committee that looks after Code pertaining to Earthquake Engineering, NDMA decided to fund the R&D project on 'Probabilistic

Seismic Hazard Map', 'Seismic Design of Pipelines-Code of Practice', 'Performance-Based Design and Seismic Design' and 'Detailing of New Structures - Steel Buildings'. The cumulative of the respective codes is ₹ 22.98 Lakh with a completion period of around 24 months. All the payment has been released to the respective institute as the research work for the development of the code has been completed. All three codes are in process of wide circulation by the Bureau of Indian Standards.

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

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. Moreover, if built properly, they exhibit a good seismic performance. The effectiveness of these traditional technologies has been clearly brought out during recent earthquake disasters. For example, during the Bhuj earthquake in India in 2001, a large number of traditional constructions experienced low level of damage while their neighbouring modern buildings suffered extensive damage and loss of life. Similar experiences have also been repeated in the Marmara earthquakes in Turkey in 1999, the Killari earthquake in India in 1993 and several other recent earthquakes. These clearly show that the local traditional construction practice 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.

To develop a collection of these different construction practices and to study their effectiveness during earthquake, a pilot study on traditional and contemporary earthquake resistant construction practices in the Himalayan region was allotted to IIT Ropar in a consortium with IIT Roorkee and AEC Guwahati with a project cost of Rs. 25 Lakhs. The main objective of the project was to identify and document the traditional and contemporary building typologies in the Indian Himalayas, conduct seismic vulnerability assessment, and suggest safety measures for such kinds of building typologies.

#### **4.19 Resource Mapping of Earthquake Engineering Facilities in Engineering/ Architect colleges**

NDMA has undertaken a project with MNIT Jaipur to map out earthquake engineering professionals on a portal at a cost of Rs 23.5 lakh for a period of 24 months. The project's goal is to create a national database of earthquake experts and other earthquake engineering resources. A management information system (MIS) portal has been created that incorporates information about academic and non-academic professionals working in the subject of earthquake engineering across the country. These details will also be reflected on the NDMA website soon. These details might be important in identifying professionals to conduct specific research in the event of a crisis.

## Traditional Construction Practices in Indian Himalayan region



Thathara housing



Dry Stone housing



Mud Wall housing



DhajjaDewari housing



Koti-Banal housing



Tak housing



Assam Type Housing



Naga Type housing



RCC Building with masonry infill



Burnt-clay brick masonry building



RC frame buildings with concrete blocks infill





Contemporary buildings with retaining system and supported on stilts

#### 4.20 Pilot project to improve Earthquake Resiliency 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. These damaging earthquakes have exposed the high vulnerability of the existing building stock, owing primarily due to not following earthquake resistant features specified in Indian Standards and Building Codes, absence of regulatory mechanism, and lack of proper monitoring of adhering to building bye-laws. Generally in the event of an earthquake, unreinforced masonry buildings and non-engineered buildings show poor performance due to the inherent brittleness, lack of tensile strength, and lack of ductility which means the lack of properties provided by the steel reinforcements in reinforced masonry. More than 70% of the building stock is masonry construction and even a moderate earthquake can devastate these buildings, resulting in a massive

death toll.

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





One week training programme on Earthquake retrofitting strategies has been organised for engineers of Tripura with the assistance of Institute of Engineers and IIT Roorkee,



Retrofitting of Melaghar Girls H.S(+2) School, Tripura



Retrofitting of AtiPrathmicSwasthya Kendra Sabhawala, Dehradun, Uttarakhand

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

Scenario development refers to what would happen due to change in typology, population density, and development taken place if past earthquake of same magnitude struck again and improves awareness of what an earthquake can do to a community as a whole. A plausible earthquake scenario builds on current knowledge of local seismicity and geology, and incorporates characteristics of the building stock, lifelines, and other infrastructure within social, economic, and cultural context of the community at risk. Scenarios are widely used to better understand and help plan for the future. A scenario that realistically describes the earthquake risk and potential impacts, giving clear reasons for individuals, businesses, and decision and policy makers to act now to prevent devastating losses. A scenario can test strategies for response, relief, and recovery. They can project performance levels of buildings and other structures under various design codes and policies.

In past, NDMA has undertaken two earthquake scenario viz. Mw 8 Mandi earthquake Scenario Project in 2012-2013 for north-western Region and M 8.7 Shillong Earthquake Scenario Project in 2013-2015 for North-eastern Region. In view of knowledge about seismic activity in Himalayan Belt and history of catastrophic earthquakes, NDMA has taken up a Project on Bihar, Uttar Pradesh and Uttarakhand earthquake Scenario based on 1934 Bihar Nepal earthquake

(M8.4) and 1991 Uttarkashi Earthquake (M 6.6) and awareness generation in the states. This project is implemented to develop an earthquake scenario based on which a unified action plan will be made, which will help the various stakeholder in planning and coordinating emergency response and utilities. Additionally it will provide an understanding of the consequences of a large earthquake. It is being developed through IIT Roorkee at a total cost of ₹ 302 Lakh. The main objective of the scheme are as under:

- Development of two scientific earthquake Scenarios by revisiting 1934 Bihar Nepal earthquake and 1991 Uttarkashi earthquake: based 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 project envisages participation of state of Bihar, Uttar Pradesh and Uttarakhand, GSI, State geology and mining directorates, regional engineering and technical institutions, NGOs and NDMA support and guidance. Scenario Development and coordination of project activities with Bihar, Uttar Pradesh and Uttarakhand facilitated by IIT Roorkee. The development of an earthquake scenario is currently underway



## B. Interventions- Man Made Hazards

### NUCLEAR & RADIOLOGICAL

#### 4.22 Mobile Radiation Detection System (MRDS):-

NDMA has taken a pilot project under which police departments in 56 cities have been trained and equipped to tackle radiological emergencies in public places. NDMA has provided radiation detectors and imparted training, under TOT, to 430 police personnel in the cities under this project. 930 police patrol vehicles were fitted with radiation Go-NoGo instruments and 339 police stations have been provided with the radiation measurement instruments and the safety kits. The project is funded by NDMA with support for 5 years (AMC) and now MTE (Mid Term Evaluations )will be done.

#### 4.23 Training on Chemical, Biological, Radiological and Nuclear (CBRN) Emergency Management for Emergency handlers at 40 Seaports/Airports:-

Capacity building and training at the major airports and seaports being undertaken to improve the preparedness against CBRN emergency. Basically, focusing on prevention and response actions in case a CBRN situation arises. 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.

So far, 28 batches of basic training on CBRN EM 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. Each month NDMA is planning to conduct CBRN training at 2 locations. Phase -2 has seen completion of training in eight airports till now. On 5-7 April 2022 CBRN training programme was conducted in Jaipur airport.





#### 4.24 Vetting of Draft AERB Safety Code on “Management of Nuclear and Radiological Emergencies”(AERB/NRF/SC/NRE).

Draft AERB Safety Code on “Management of Nuclear and Radiological Emergencies”(AERB/NRF/SC/NRE) were submitted with comments to AERB. Proposed resolution of NDMA observations on “AERB Safety Code on Management of N&R Emergencies” received in December 21 from AERB.

#### 4.25 NDMA's action plan and prepare in Nuclear Power Plant accident for MHA.

NDMA's Action plan and preparedness in NPP presentation and a note on the same was prepared and presented to M-S, NDMA and Members of NDMA. And



the same was presented twice before finalization. A meeting was conducted through video conferencing with the District Authorities/DM/DC of the districts currently having Operating NPP to discuss their preparedness to deal with any nuclear emergency in their district and obtain feedback.

#### 4.26 Off-site emergency exercise (OSEE) for Nuclear Power Plants (NPP)

NPCIL has devised new methodology in three States (tabletop, integrated command, control & response (ICCR) and Full-fledged exercise involving Public) for conducting OSEEs for NPPs. In the month of Sep.21, Nov21, and Dec21 DAE conducted four ICCR OSEEs in Tarapur,



Narora, Kudakulam and Kalpakkam and NDMA participated in it as observers. KGS OSEE (Jan 2022) drill was conducted online because of the pandemic and report was submitted.

#### 4.27 Integration of off site Emergency plan for seven districts with Nuclear Power Plants (NPPs) in the respective DDMPs

Review of draft DDMPs has been done and revised drafts from the respective districts were received. The draft received from Palghar district was found to be well prepared as it followed the NDMA Document Preparation Profile. The same has been sent to CMG, DAE for institutional review. DAE has completed the institutional review and sent to NDMA. NDMA has given their comments and sent to DM's of all 7 districts to incorporate the comments from DAE and NDMA.

### C. Interventions- Cross- Cutting issues

#### PSYCHOSOCIAL CARE

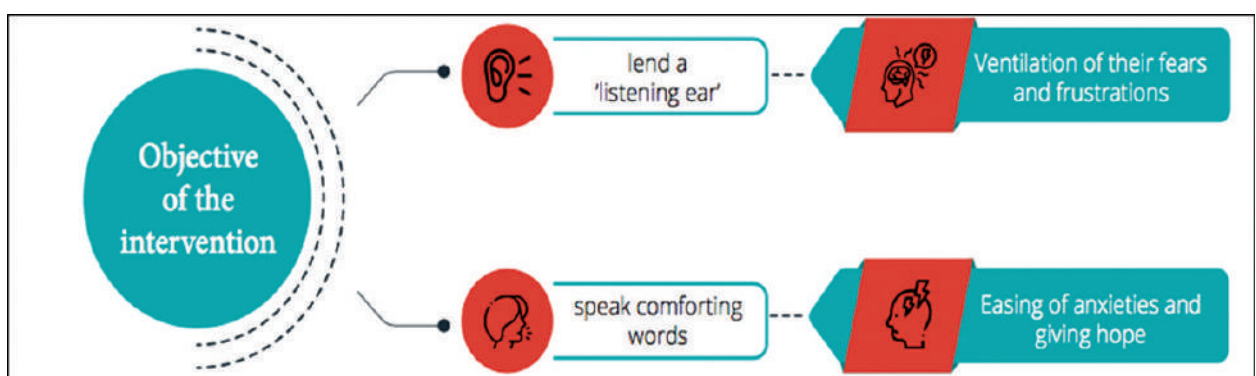
#### 4.28 Psychosocial Counselling for People Testing Positive for Covid 19

To reach counseling to COVID-19 patients who are unlikely to seek or obtain psychiatric help, NDMA initiated a helpline for people testing positive for COVID-19, whereby psychosocial

support is provided to them in the form of remote counseling. Being isolated and quarantined, COVID-19 patients face a myriad of anxieties and worries – as to the uncertainty of their recovery, their comorbidities, the health and welfare of their near and dear, financial security, etc. This often leads to feelings of loneliness, hopelessness and frustration in them.

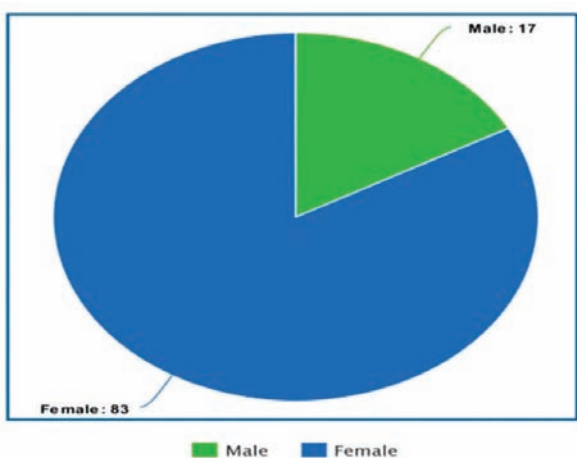
NDMA enlisted volunteer counselors and engaged their services for tele-counseling of COVID-19 patients. The objective of this intervention is to offer basic psychosocial support to people who have tested positive for COVID-19 through tele-counseling/'compassionate talking' by qualified and experienced counselors. Such compassionate talking or counseling entails specific components of PFA, such as listening non-judgementally, providing reassurance and general information, and encouraging self-help and other support strategies.

Being conducted remotely, such counseling did not entail any psychological assessment or treatment. It is not intended to fulfill the objectives of conventional psychosocial counseling, such as providing practical assistance for meeting any immediate needs, helping establish social supports, or providing linkages with referral services.



This intervention was unique and is one of its kind in the country as it is a kind of a 'reverse' helpline, whereby people testing positive for COVID-19 were not required to call up the helpline. Instead, the counselors proactively rang up the patients to check on their psychosocial state and provide them some relief in the form of counseling. The people who tested positive are relieved to get such a call, where the caller promises to hear out their problems and thought processes and keep everything confidential. In cases where the person requests for a call back or exhibits the need for further counseling, the necessary service is arranged by NDMA.

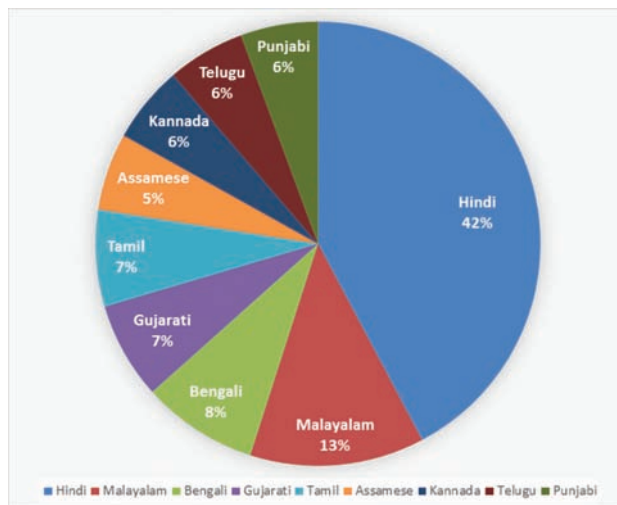
The volunteers for this counseling service were selected after a thorough screening process, which included verification of their qualifications and experience. These volunteers were mainly psychiatrists, clinical psychologists, counselors and psychiatric social workers. The counseling was conducted remotely from different locations across the country.



Gender distribution of counselors

The counselors were provided necessary guidance on the operational procedures, ethics and mental health advisories issued by NDMA as well as the Ministry of

Health and Family Welfare, which would need to be strictly adhered to in delivery of volunteer services. On completion of the service a 'Certificate of Appreciation' is provided to the volunteers. Apart from English and Hindi, a variety of languages is spoken by the volunteer counsellors, which enabled the service to reach a wider set of beneficiaries.



Major languages spoken by the counsellors

#### 4.29 Training and supervision of counselors

NDMA collaborated with 'Rahbar', Tata Institute of Social Sciences (TISS), Mumbai to provide training and supervision for counselors. The training sessions were conducted by TISS for volunteer counselors enrolled with NDMA for the psychosocial support helpline. The sessions were conducted weekly for a duration of two hours via a video-based platform. Based on the needs and challenges articulated by the counselors, and the emerging psychosocial challenges of people diagnosed with COVID-19, a training plan was designed and delivered.

The supervision sessions conducted by TISS were aimed at motivating the counselors, enhancing their professional

resilience, building their skills, and promoting reflective practice among them. Supervision sessions were conducted in a group format, which helped counselors utilise the opportunity of peer learning through experiential activities, reflective dialogue and skill-building tasks. The focus of the supervision sessions was modified as per the needs and competencies of the counselors.

#### 4.30 Mobile app for India-wide counseling

The counseling was conducted through a specially designed mobile application which is installed in the counselors' mobile phones. This mobile application ensures that neither the patient's number is visible to the counselor nor the counselor's number to the patient. NDMA collected the data of people testing positive for COVID-19 and feeds this information into the application installed in the counselor's phone. When the counselor called up a COVID-19-positive person from the application, only the basic information required for counseling of the person was revealed. This ensured confidentiality of the personal details of both patient and counselor.

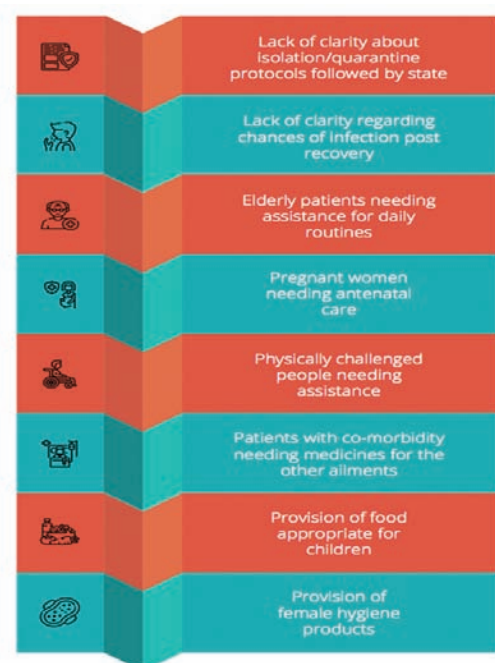
The screenshot shows a mobile application interface with a status bar at the top displaying '5:40'. Below the status bar are several icons: a play button, a person icon, a save icon, a magnifying glass, and a power button. The main content area displays the following information:

- Disposition: Answered
- Sub Disposition: (dropdown menu)
- Phone: XXXXXXXXXXX
- Name: SUDHA JK
- Age: 54
- Gender: F
- State: Kerala
- District: THIRUVANANTHAPURAM

#### 4.31 Psychosocial issues faced by COVID-19 patients

Counselors offer psychosocial support through COVID-19 education, bereavement counseling and by building a sense of optimism in patients. The various issues that came up during the counseling of COVID-19-positive people included:

- Confusion regarding prescribed duration for isolation/quarantine
- Concerns about testing
- Inability to interpret test report
- Concerns about personal health, welfare of family
- Anger at being quarantined
- Worries pertaining to the future
- Worries about social stigma and discrimination that their families may face
- Stress over senior family members who are at high risk
- Feelings of loneliness



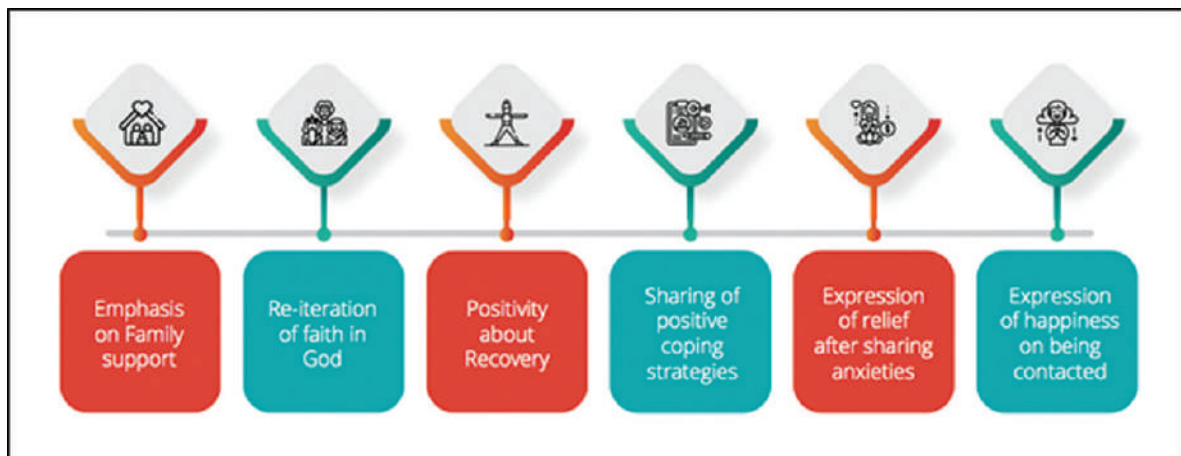
- Worries pertaining to family members not admitted to hospital
- Frontline health workers not getting to meet the family
- Lack of contact with family
- Grief due to loss of loved ones
- Worry about financial losses and debts

#### 4.32 IMPACTS/BENEFITS/OUTCOMES

In the second phase of the NDMA Psychosocial Care Helpline (April to July 2021), the counselors volunteering with NDMA had reached out to over 70,000 Covid-19 patients. The NDMA volunteer counselors intervened by providing them a space to express their feelings and be

Anger management was also used as an intervention where individuals felt very frustrated by their condition.

Additionally, counselors helped individuals to recognize what matters were under their control and what active steps they could take towards their emotional and physical well-being. Some of these steps included acknowledging their feelings by maintaining a journal, talking to others, and channelling their emotions into something creative. Following a healthy routine - like eating healthy meals, getting some form of physical exercise and good sleep - could also have a positive impact on their thoughts and feelings, they were told.



heard. The counselors also educated the patients on the various triggers that could have an impact on their mental health, providing them advice on how to normalise their mental health. Supportive psychotherapy worked well with people by reassuring them that things would get better. A few instances of anxiety among the patients were navigated by helping them with grounding techniques, mindfulness and breathing exercises.

Receiving support and care from others has a powerful effect on helping people cope with challenges. Spending time with supportive family and friends can bring a sense of comfort and stability. Talking through concerns, thoughts, and feelings with others can also help in identifying effective ways of thinking about or dealing with a stressful situation.

Most people were appreciative of the initiative and reported feeling understood



### What patients had to say.....

'My own family, relatives and friends are not contacting me in this period and you..... an unknown person.... Whom I have never met.... are spending your time in comforting and guiding me.... I never expected this

"It is so kind of your organization to check on me in this moment of distress when my near and dear ones are not available. I can't thank you enough'

### Counsellors overwhelmed by generosity of patients....

'One of the clients, towards the end of the call, wanted to know more about me and enquired about my well-being and age. On hearing that I was a senior citizen myself, he advised me to take care, and strictly stay at home to not expose myself to the virus!'

'One such case that stays with me was this elderly gentleman who just brushed off my enquiries about his well-being and advised me to call and encourage the frontline workers (police, doctors, nurses, etc.) instead. Very selflessly, he pushed his needs aside and highlighted others' needs!'

and cared for. Being in a difficult situation, they felt acknowledged and supported.

### 4.33 RESEARCH AND DOCUMENTATION OUTPUTS FROM THE PROGRAM

Research Report -" The NDMA and TISS has produced a research report to document the process and insights generated from the Psychosocial Care Helpline as outlined by counselors.



Training Manual -: NDMA has also partnered with TISS to prepare a Training Manual for Counsellors on remote Psychosocial Counselling for Covid 19 patients. The topics covered are psychological first aid during a pandemic, supporting clients in high risk and distress, mitigating social stigma, ensuring ethical practice and self-care for counsellors. Both these documents have been released on the NDMA website. The practice of proactively reaching out to Covid-19 patients and providing them initial psychosocial care has not



only benefited the patients but has also provided valuable feedback to the overall system for managing Covid-19 and taking corrective steps to mitigate its negative impact. NDMA is now working to upscale this initiative in partnership with institutions with expertise in psychosocial care and public health management systems and with technology providers.

#### 4.34 Preparation of Psychosocial Care and Preparedness Modules and IEC Materials

NDMA has taken up a project titled 'Preparation of Psychosocial Care and Preparedness Modules and IEC Materials'. The aim of the project is to develop standardized training material for capacity building of psychosocial support providers at all levels national, state, district, and block level to support the provision of psycho-social support in the community-level in India. Such training tools will be comprehensive and sensitive to the culture, language and specific disaster risks covering the respective departments, sectors and populations.

National Disaster Management Authority (NDMA) is partnering with the National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru for the preparation of these modules. NDMA is providing technical and financial resources to support the implementation of the program. NIMHANS is the technical partner involved in designing, developing and standardizing the modules and IEC materials. Four levels of the model are being developed Level 1, (National), Level 2 (State), Level 3 (District) and Level 4 (Block). The Modules are currently in the process of being finalized by NIMHANS and NDMA.

#### D. Interventions- Technological

##### GEOGRAPHIC INFORMATION SYSTEM (GIS)

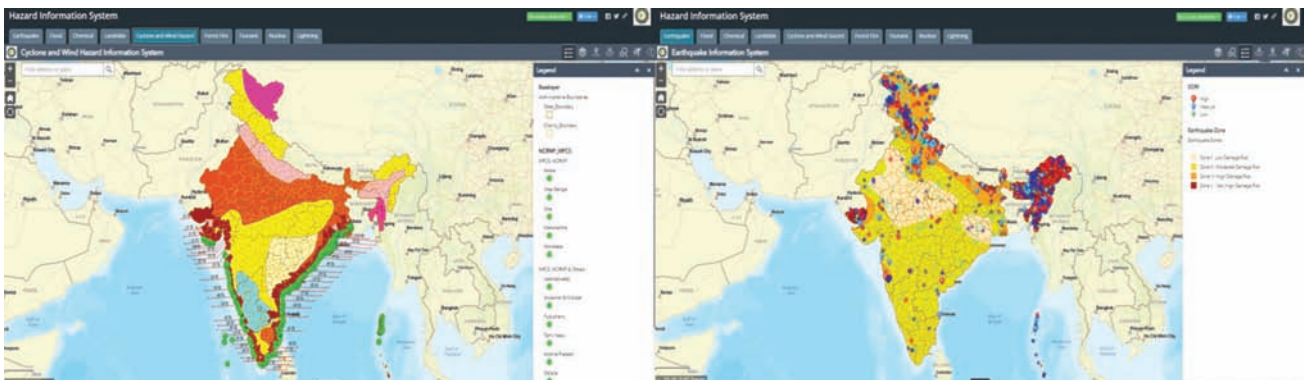
Development of cloud-based application information System Project:

#### 4.35 Developed COVID-19 Operational Dashboard:

NDMA has developed a GIS portal for managing the Covid-19 pandemic



Representing the Covid 19 Dashboard



These figures represent the Cyclone and wind hazard and Earthquake tabs (map of pan india) of the Hazard Information System

situation which 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.

#### 4.36 Developed Hazard Information System portal

NDMA developed a Hazard Information System where hazard management, assessment and prediction are developed



These figures represent the Portal of the Hazard Information System

for the prevention and mitigation of geological hazards. Data sets related to geological hazard prevention has been collected from various states. NDMA has 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 and Lightening into the hazards vulnerability maps of Pan India.

#### **4.37 Capacity Building of Stakeholders on GIS in Disaster risk Reduction Project:**

An online webinar was organized on the Geospatial Technology in DRR dated 07th January, 2022 and more than 160 professionals across the country has been participated in it.

#### **4.38 Organize training on “application of GIS in Disaster risk Reduction” with collaboration of NESAC**

NDMA has been organizing Training programs to create awareness among all

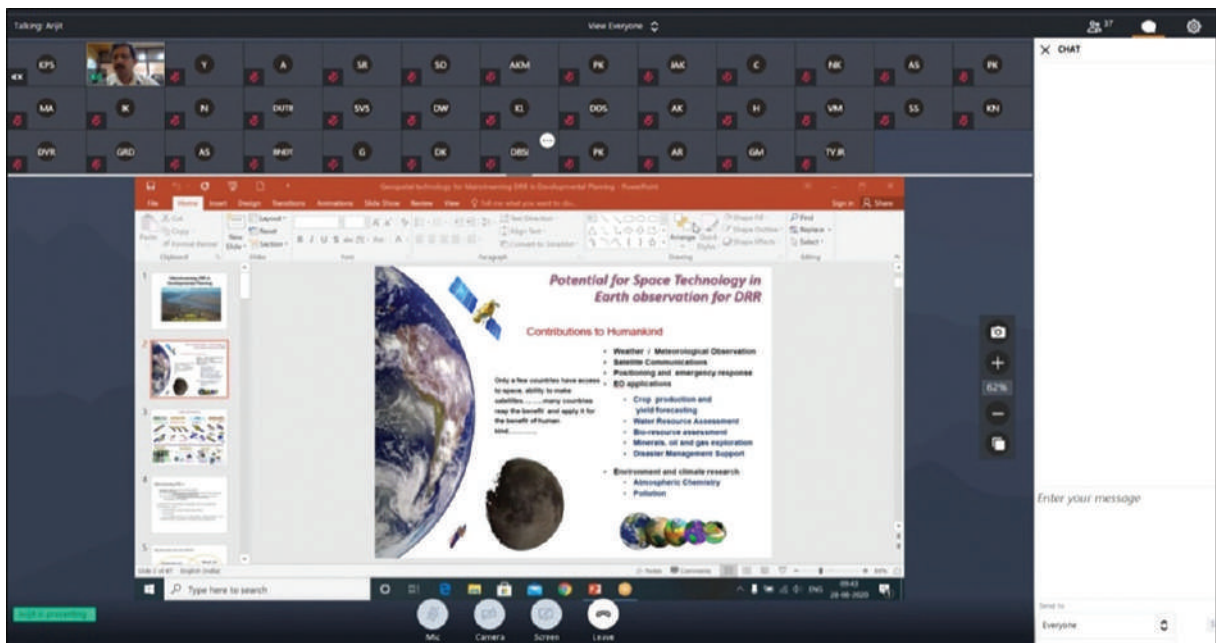
the SDMA's and stakeholders/ disaster managers on the Application of Geographic Information System in Disaster risk reduction. Two days online training was conducted by the North Eastern Space Applications Centre, Umiam. Training is being conducted through via Video conferencing which involves a number of participants from various states. This enable the participants to become aware about the GIS technology and how they can use it in making decisions at the time of occurrence of geological disaster or pandemic. During the online training program conducted in the year 2021-2022, 250 professionals have been trained from all SDMAs, Ministries and other stakeholders.

#### **4.39 Organize training on “application of GIS in Disaster risk Reduction” with collaboration of IIRS**

NDMA has organized Training programs to create awareness among all the SDMA's and stakeholders/ disaster managers



Representing the NESAC presenters conducting the training program



Representing the IIRS Dehradun presenters conducting the training program

disaster managers on the Application of Geographic Information System in Disaster risk reduction. Five days online training was conducted by the Indian Institute of Remote Sensing, Dehradun. Training is being conducted through online medium via Video conferencing which involves a number of participants of various states so that they can be

aware about the GIS technology and they can be able to use this technology in making decisions at the time of occurrence of geological disaster or pandemic. During the training program 250 professionals have been trained from all SDMAs, Ministries and other stakeholders.



# CHAPTER 5

## 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 2023.

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

5.5 All trained volunteers will be provided an Emergency Responder Kit (ERK) including an insurance covering death / permanent disablement / hospitalization. In all 350 Districts, an Emergency Essential Resource Reserve (EERR) will be distributed.

5.6 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.

### Financial Progress

1. All States/UTs except Telangana and Jharkhand have signed MoU with NDMA.
2. 3032 volunteers have been trained in Assam (201), Bihar (299), Gujarat (2112), & Uttar Pradesh (420). Training is underway in Manipur, Sikkim, & Uttarakhand.

### Physical Progress

Out of Rs.221.40 Cr. provisioned for FY 2021-22, a total amount of Rs.205.72 Cr. has been spent under the Project. The expenditure includes 1st installment (10%) to 33 States/UTs, 2nd installment (50%) to 32 States/UTs, and Salary of PMU Staff hired in NDMA.

- 5.7 Two Review Meetings with States/UTs (1st in October, 2021 and 2nd in February, 2022) was held under the chairmanship of Shri Rajendra Singh, Member, NDMA to review the progress made by States/UTs in implementation of the Scheme.

### Capacity Building of IAS and Central 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.

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 Progress	Financial Progress
489 Officers were trained	Rs.23.04 lakh

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

- 5.9 The meeting of 12th Joint Monitoring Committee was held on 31st August, 2021 to review the status of implementation of National Disaster Management Guidelines on School Safety Policy. The overall quarterly progress was shared by all the States & UTs. In the meeting, NDMA made a presentation on First Aid for Students & Teachers (FAST) modules. FAST App is available at Google Play Store (Android) and Apple Store (iOS) for the benefit of students, teachers and all concerned stakeholders.

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

- 5.10 An interactive meeting between 40 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 14th March, 2022 at NDMA Bhawan, New Delhi.

- 5.11 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.

### Coordination Meetings with NGOs/ CBOs/ CSOs

- 5.12 NDMA organized a series of coordination meetings with select NGOs and States & UTs to get feedbacks from ground level and understand the possible role of NGOs/CBOs/CSOs in COVID-19 preparedness/management. In FY 2021-22, 13 coordination meetings were conducted.
- 5.13 During the meetings, it was decided to set up an NGO Coordination Centres and appoint full-time Nodal Officers at State & District levels in order to ensure a coordinated and concerted effort in COVID-19 management. In pursuance to the decision, 22 States/UTs and 240 Districts have established their respective State/District level NGO Coordination Centres by appointing Nodal Officers.
- 5.14 The key highlights emerged during these meetings were also shared with all States/UTs to take specific actions for mitigation of the pandemic.

### Foreign Travel/ Visits undertaken

- 5.15 Shri Kamal Kishore, Member & Secretary - In charge, NDMA visited

Glasgow, Scotland, United Kingdom to attend United Nations Climate Change Conference on 26th Session of Conference of Parties (CoP-26) from 1st to 9th November, 2021.

- 5.16 Shri Kunal Satayarthi, Joint Secretary (Policy & Plan), NDMA visited Glasgow, Scotland, United Kingdom to attend United Nations Climate Change Conference on 26th Session of Conference of Parties (CoP-26) from 1st to 7th November, 2021.

### 5.17 Thunderstorm & Lightning

a) Meeting taken by Union Home Minister on 15th June, 2021 in Conference Room No.- 119 , MHA, North Block, New Delhi to review the flood preparedness measures.

- Hon'ble Union Home Minister held a meeting on 15.06.2021 and reviewed the preparedness measures to deal with flood situation in the country and formation of long-term measures for a comprehensive and overarching policy to mitigate the perennial flood problems of the country. During the meeting, Hon'ble Minister directed that a SOP on lightning alert be issued for dissemination of the warning on various media.
- Following the direction, NDMA constituted a small team of expert members to develop 'a protocol for early warning dissemination on Thunderstorm and Lightning' and the first meeting of the expert members was held on 22.06.2021. The Team developed the protocol

and submitted to NDMA. After obtaining approval, the Protocol for Early Warning Dissemination on Thunderstorm and Lightning was uploaded in NDMA website. A copy of the protocol was also shared with DM Division, MHA for information.

b) Meeting with Lightning Protection Association of India

NDMA convened a meeting with Lightning Protection Association of India (LPAI) on 11.06.2021 to understand the relevance of ESE Lightning arrestors for effectiveness of lightning protection. The Members of Expert Group on Thunderstorm & Lightning also participated in the Meeting.

c) Review meeting with States / UTs on preparation of Thunderstorm & Lightning.

A meeting to review the preparedness and mitigation measures on Thunderstorm & Lightning and Flood with all States / UTs was held on 16.06.2021 under the chairmanship of Member Secretary, NDMA.

d) Advisory and Do's and Don'ts on Thunderstorm and Lightning:

NDMA has forwarded advisory and Do's and Don'ts on Thunderstorm and Lightning to all States / UTs for wider dissemination vide letter dated 08.06.2021.

e) Meeting to discuss a broader strategy on prevention and mitigation of Lightning.

NDMA held a meeting on 03.08.2021 under the chairmanship of Member Secretary and discussed the broader strategy for prevention and mitigation of Thunderstorm & Lightning

f) Meeting to discuss the various measures needs to be taken to reduce the death caused by lightning in the country-reg.

- Union Home Secretary held a meeting on 29.09.2021 and discussed various measures needs to be taken to reduce the deaths due to lightning in the country. During the meeting Member(KSV) made a presentation on 'Lightning Deaths in India: Prevention & Mitigation'.
- Following the deliberation of the meeting of Home Secretary a webinar was held on 24.03.2022 under the chairmanship of Member (KSV) through Video Conference with IMD, IITM and the most vulnerable States and discussed various measures needs to be taken to reduce the death caused by lightning in the country. During the meeting, IMD & IITM presented their status and way forward to arrest the impact of lightning. NDMA presented the most vulnerable districts affected by lightning. Also Common Alert Protocol (CAP) was discussed to include in the lightning programme. The States participated in the meeting presented their best practices adopted to minimize the impact and loss of deaths.

### 5.18 National Guidelines for Preparation of Action Plan- Prevention and Management of Cold Wave and Frost 2021

- In recent years, occurrences of extreme low temperature in association with incursion of dry, cold winds from north into the sub-continent known as cold waves, cause of discomfort, illnesses and even loss of lives. Considering the impact of cold wave NDMA has taken a decision to formulate the Guidelines.
- NDMA followed 9 steps process and prepared the “National Guidelines for preparation of Action Plan - Prevention and Management of Cold Wave and Frost”. The aim of the Guidelines is to provide a broad framework for developing Cold Wave Action Plan (CWAPs) at the State level and District level for mitigating the impact of cold wave. The Guidelines has been released on the occasion of the 17th Formation Day of NDMA. The guidelines have been circulated to concerned stakeholders. The guidelines has also been uploaded on the website of NDMA.
- NDMA vide letter dated 29.11.2021 forwarded Advisory and Do’s and Don’ts on Cold Wave and Frost to States and UTs and concerned Ministries / Departments and requested to carry out necessary preparedness, mitigation measures and awareness generation activities among the public and all stakeholders to avoid cold wave related adverse impacts and also requested to create awareness extensively through social media, print & electronic media.

- A webinar was held on 08.12.2021 under the chairmanship of Secretary (I/C) through Video Conference with concerned Ministries and States prone to Cold Wave and reviewed the preparedness and mitigation measures for cold wave season 2021-22. During the meeting all the States were requested to aim for zero deaths for the season 2021-22 from cold wave and efforts must be targeted at appropriate provisioning of shelters for cold wave.

### 5.19 Proposal for carrying out Scoping Study on role of UAV / Drones in Disaster Management :

NDMA has initiated a proposal to carry out Scoping Study on role of UAVs / Drones in Disaster Management with an aim to increase the role of Science and Technology into various phases of disaster management. Centre for Aerospace Research (CASR), Anna University, Chennai has been awarded the work to carry out the Scoping Study and Project Agreement was signed on 1st March, 2021. An Expert Committee on Scoping Study was constituted vide O.M. dated 12.05.2021.

A meeting was held on 27.05.2021 under the chairmanship of Shri Rajendra Singh, Member, NDMA with CASR to discuss the Inception Report. CASR has forwarded Interim Report-1 and Interim Report 2 vide letters dated 31.05.2021 and 31.07.2021 respectively. Accordingly, Meetings of Expert Committee were held on 23.08.2021 and 18.11.2021 to discuss Interim Report-1 and Interim Report 2 respectively.

Further, CASR has forwarded a Draft

Final Report and Final Report on the study made on "Role of UAV / Drones in Disaster Management" on 30.09.2021 and 31.12.2021. The comments / suggestions of Members of Expert Committee on final report submitted by CASR were forwarded to CASR. CASR has been requested to submit the revised Report. To expedite the process, a follow up meeting was held by JS(PP) with CASR team on 09th March, 2022 at Chennai.

#### 5.20 Guidelines for Recovery and Reconstruction Fund:

XVth Finance Commission in its Report recommended that NDMA along with MHA will formulate "Guidelines for Recovery & Reconstruction" window under NDRF / SDRF. Accordingly, NDMA has initiated the process and made consultations with various stakeholders including Central Ministries, State Governments, International agencies as well as independent experts.

(i) During the process NDMA held meetings with concerned ministries to discuss components of draft National Guidelines for Recovery and Reconstruction.

##### (ii) Meeting with States

Meetings were held under the Chairmanship of Shri Krishna S. Vatsa, Member, NDMA with concerned State Governments on 15.02.2021 and 10.03.2021 through Video Conference to discuss the draft National Guidelines for Recovery and Reconstruction.

##### (iii) Meetings with Experts/ NGOs

Meetings were also held with Experts

/ NGOs on 16.02.2021 through Video Conference under the Chairmanship of Shri Krishna S. Vatsa, Member, NDMA.

To finalize the Draft 'Guidelines on Recovery and Reconstruction' assistance under NDRF / SDRF a meeting was held under the chairmanship of Secretary (I/C), NDMA on 07.01.2022 through Video Conference with concerned Ministries and States. During the meeting, inter-alia, all ministries and departments and States were requested to share their views/ suggestions on items norms of assistance.

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

- The XVth Finance Commission has made specific recommendations for mitigation measures to prevent Coastal and River Erosion and Resettlement of Displaced People affected by Coastal and River Erosion. To operate the fund for resettlement of people affected by Coastal and River erosion, the Commission recommended that both the Union and State Governments develop a policy to deal with extensive displacement of people caused by Coastal and River erosion.
- To understand the background for preparing the policy for resettlement of displaced people affected by River and coastal erosion NDMA held consultation with NGOs / Experts working on coastal and river erosion on 13.04.2021.

- A meeting was held on 10.08.2021 with States vulnerable to coastal erosion and NGOs/ Experts associated with Coastal Erosion. Further, a meeting was held on 18.08.2021 with States vulnerable to river erosion and NGOs/ Experts associated for River erosion. NDMA is in process of preparing the Policy.
- To understand ground level perceptions, issues and challenges that people are experiencing NDMA has initiated a household survey through local organizations in selected villages of particular districts of States prone to Coastal and River erosion.

NDMA has signed an agreement [MoU] with 8 Organizations (4 organizations each for Coastal Erosion and River Erosion) in the States of Odisha, Andhra Pradesh, Tamil Nadu, Kerala, Uttar Pradesh, Bihar, West Bengal and Assam to conduct the household survey.

#### 5.22 International Cooperation:

##### **Indo-German Virtual Meeting for Cooperation in the field of Emergency Management**

- 5.23 In pursuance to the Joint Declaration of Intent signed between the Ministry of Home Affairs, Government of India and the Federal Ministry of the Interior of the Federal Republic of Germany on cooperation in the field of Disaster Management on 5th October, 2015, an Indo - German Virtual Meeting was held 2nd June, 2021 on emergency management by sharing best practices on (i) Fire Fighting, (ii) Disaster Information and Communication Technology, and (iii) Urban Search & Rescue.

##### **3rd Meeting of BRICS Joint Task Force on Disaster Risk Management**

- 5.24 NDMA organized the 3rd Meeting of BRICS Joint Task Force on Disaster Risk Management under the chairmanship of Shri Sanjeeva Kumar, Member Secretary, NDMA, Gol virtually on 16th April, 2021. The meeting was attended by all Member Countries of BRICS. During the meeting, three themes - Multi-Hazard Early Warning System, Volunteerism in Disaster Management, and Disaster Resilient Infrastructure were discussed.
- 5.25 The Member Countries expressed satisfaction with the results of the meeting and willingness to further enhance cooperation on DRM within BRICS Countries.

##### **Signing of MoU with Italy**

- 5.26 An MoU between NDMA, Gol and the Department of Civil Protection of the Presidency of the Council of Ministers of the Italian Republic on cooperation in the field of Disaster Risk Reduction & Management was signed during a Virtual MoU Signing Ceremony held on 24th June, 2021.

##### **Study on Strengthening Disaster Risk Governance Framework in India : learning from Global Best Practices**

- 5.27 NDMA as a part of National Cyclone Risk Mitigation Project conducted a Study on "Strengthening Disaster Risk Governance Framework in India: learning from global best practices" through Indo-Japan Laboratory, Keio University, Japan; Institute for Social and Environmental Transition - International

(ISET), United States of America; and Resilience Innovation Knowledge Academy India Pvt. Ltd to understand the existing DRM governance structures (and corresponding good practices) in

the eight countries viz Australia, Canada, Germany, Indonesia, Japan, Philippines, Turkey, and the United States of America that could be adopted in Indian context.

# CHAPTER 6

## MOCK EXERCISES & AWARENESS GENERATION

**“Remember: When disaster strikes, the time to prepare has passed”**  
**“There is no harm in hoping for the best as long as you are prepared for the worst”**

### Introduction

6.1. India is vulnerable to many natural disasters - and the Incident Response System (IRS) is intended as the preferred mechanism for responding to any hazard or disaster situation. Although some States / Union Territories (UTs) have 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 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 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 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 formalize new officials and staff.

6.3 Integrated MEs are part of a robust process that commences each year with the formulation of an annual calendar, and are conducted in under mentioned sequence:-

Step	Event	Participants
Step-I	<ul style="list-style-type: none"> <li>▪ <b>Training in the Incident Response System (IRS) and associated aspects by the NDMA Coordinator:</b> <ul style="list-style-type: none"> <li>○ <b>Part-I:</b> 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.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>District-level:</b> Officials and other stakeholders - through video-conferencing</li> </ul>

	<ul style="list-style-type: none"> <li>o <b>Part-II:</b> Training on the IRS, including how to: <ul style="list-style-type: none"> <li>➤ Form IRTs.</li> <li>➤ Make an Incident Action Plan for response.</li> <li>➤ Structure strike teams / task forces / groups for response, relief and restoration tasks.</li> </ul> </li> <li>o <b>Part-III:</b> How to leverage technology in support of disaster management. This includes how to: <ul style="list-style-type: none"> <li>➤ Carry out resource mapping.</li> <li>➤ Build situational / domain awareness.</li> <li>➤ Leverage geospatial resources.</li> <li>➤ Fuse hazard-specific data, damage assessment data and core data.</li> </ul> </li> <li>▪ <b>Orientation &amp; Coordination Conference:</b> Here, the detailed modalities and preparations required for the impending mock exercise are discussed and finalized.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>State-level:</b> Officials and other stakeholders – through physical presence at the State HQ / video-conference venue</li> </ul>
Step-II	<b>Table-Top Exercise (TTEEx)</b> – conducted by the NDMA Coordinator	
Step-III	<b>Mock Exercise (ME)</b> – conducted by the NDMA Coordinator under the overall guidance of the Chief Secretary / Additional Chief Secretary / Secretary (Disaster Management) of the concerned State/UT.	Physical conduct/ participation at all levels as per charter of duties/ responsibilities
Step-IV	<ul style="list-style-type: none"> <li>▪ After-action report by NDMA coordinator to NDMA.</li> <li>▪ Final report by the State/UT to NDMA.</li> <li>▪ Intimation of 'lessons learnt' and 'best practices' to the State/UT and, where required, to other States/UTs too.</li> </ul>	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' 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 like the BHUVAN, National Database on Emergency Management (NDEM), and India Disaster Resource Network (IDRN).
- (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 multi-State, State, 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.

### The COVID-19 Pandemic and Reorientation of the Mock Exercise Programme

6.6 Step-III of the integrated ME process (Para 6.3 above refers) requires the physical presence and participation of a very large number of officials, other stakeholders, and the community / public. In March 2020, following the outbreak of COVID-19, it became evident that physical gatherings of persons would have to be avoided. Hence, in view of the recommended safety measures, the NDMA then proactively devised a short but comprehensive half-day online training package. This online training comprises the following:

- (a) A review of the State's Disaster Management Plan (SDMP), IRS notification, State Disaster Response Force (SDRF), medical plan and its preparedness to manage the primary hazard threat(s).
- (b) Presentations by the Early Warning Agencies i.e. India Meteorological Deptt(IMD), Central Water Commission (CWC), National Centre of Seismology(NCS), INCOIS (as applicable) on the primary hazard threat to the State / UT.
- (c) A presentation by line departments / other stakeholders and NDRF on their preparedness to assist in the unfortunate event of a hazard threat manifesting.
- (d) Steps I and II of the mock exercise process (i.e., brief training on the IRS and conduct of a Table-Top Exercise).

### Mode of Conduct:

6.7 This online training is conducted through video-conferencing with officials of State/ UT, district authorities, line departments, first responders like SDRF, Police, F&ES, community volunteers, NGOs and Central Agencies like Early Warning(EW) Agencies, Armed Forces, CAPFs and NDRF. Consequent to normalcy in the pandemic situation, conduct of physical Mock Exercises recommenced in March 2022 and one such exercise was conducted for Sikkim on EQ scenario.

### Online IRS Training & Table-Top Exercise during the Year 2021-2022

6.8 In order to prepare Annual Online IRS Training & Table-Top Exercise calendar, consultations were made with all the States and UTs and accordingly, schedule was finalized. During the training year Apr 2021- Mar 2022, NDMA has conducted 19 such online training sessions and two physical MEs for 21 States/UTs. Salient details of the same are given below:-

Date	State, Disaster Scenario and Event	Remarks
05/06 Apr 2021	<b>State:</b> Uttarakhand <b>Scenario:</b> Management of Maha Kumbh Mela-2021 <b>Event:</b> Physical Table-Top and Mock Exercise for Management of Maha Kumbh Mela-2021 at Hardwar	The objective was to train and prepare all concerned officials and first responders / components of the NDRF, CAPFs, Armed Forces for management of this mega pilgrimage and to deal with any unfortunate hazard event during such a national level event of mass congregation having footfall of crores of devotees. ME was conducted by Resource Person, NDMA and JA (Ops). The same was attended by Secretary (DM)& Relief Commissioner, Govt of Uttarakhand, Mela Adhikari, IG Police, and DM / Collector, Hardwar. Functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts, representatives of the Armed Forces, CAPFs, NSG and NDRF along with all other stakeholders participated.





Date	State, Disaster Scenario and Event	Remarks
16 Jul 2021	<p><b>State:</b> Uttar Pradesh</p> <p><b>Scenario:</b> Floods</p> <p><b>Event:</b> State-level Online IRS Training &amp; Table-Top Exercise for State HQ and 40 District.</p>	<p>Floods are one of the primary hazards the State of Uttar Pradesh faces periodically. Therefore, an online IRS Training &amp; TTE was conducted just prior to the flood season.</p> <p>Event was jointly chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and Lt Gen R.P. Sahi (Retd), Vice-Chairman UPSDMA and conducted by Consultant (ME &amp; IRS), NDMA. Secretary (DM) &amp; 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
02Sep 2021	<b>State:</b> Tamil Nadu <b>Scenario:</b> Floods <b>Event:</b> State-level Online IRS Training & Table-Top Exercise for State HQ and 16 District.	<p>Floods are one of the primary hazards the State of Tamil Nadu faces periodically. Therefore, an online IRS Training &amp; TTEx was conducted on Flood Scenario.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and conducted by Consultant (ME &amp; IRS), NDMA. Addl Chief Secretary / Commissioner of Revenue, Govt of Tamil Nadu, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMAs, 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
30Sep 2021	<b>State:</b> Gujarat <b>Scenario:</b> Chemical (Industrial) Disaster <b>Event:</b> State-level Online IRS Training & Table-Top Exercise for State HQ and 07 District.	<p>Gujarat is one of the most industrialized state 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, an online IRS Training&amp; Table-Top Exercise was conducted for the State.</p> <p>Event was chaired by Shri Rajendra Singh, Member, NDMA and was conducted by Consultant (ME &amp; IRS), NDMA. Additional Chief Secretary/Relief Commissioner, Govt. of Gujarat,important functionaries of the State/District Incident Response Teams (IRTs), officials of the SDMA and DDMAs, Line Deptts, 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
21 Oct 2021	<b>State:</b> Himachal Pradesh <b>Scenario:</b> Glacial Lake Outburst Flood (GLOF) <b>Event:</b> State-level Online IRS Training & Table-Top Exercise for State HQ & 12 District	<p>Glacial Lake Outburst Flood (GLOF), as a hazard and disaster scenario, is gaining prominence driven by climate change. Himachal Pradesh has 1239 glaciers and 212 glacial lakes. There is hence an ever present danger of flash floods caused by the outburst of glacial lakes or GLOF. To enhance preparedness of Himachal Pradesh for such a disaster situation, an online IRS Training &amp; Table-Top Exercise was conducted on a GLOF scenario. This was the first ever exercise conducted by NDMA or any other agency on GLOF. Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and conducted by Consultant (ME &amp; IRS) NDMA. Principal Secretary (Revenue/DM), Govt of Himachal Pradesh, IIT Roorkee, HIMCOSTE and important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of EW Agencies/ IMD, DGRE, Armed Forces, CAPFs and NDRF, along with all other stakeholders, participated.</p>

Date	State, Disaster Scenario and Event	Remarks
03 Nov 2021	<b>State:</b> Mizoram <b>Scenario:</b> Earthquake <b>Event:</b> State-level Online IRS Training & Table-Top Exercise for State HQ & 11 District	<p>Mizoram, located in Seismic Zone V, has two faults running through it. Refresher training on the IRS, followed by a Table-Top Exercise depicting a scenario of an earthquake of magnitude 8.5, was conducted by NDMA for officials and stakeholders down to District level. Event was co-chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and Chief Secretary, Govt of Mizoram which was conducted by Consultant (ME &amp; IRS), NDMA. Secretary (Home &amp; DM) Govt of Mizoram, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of National Center for Seismology (NCS), Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>

Date	State, Disaster Scenario and Event	Remarks
26 Nov 2021	<b>State:</b> Goa <b>Scenario:</b> Cyclone <b>Event:</b> State-level Online IRS Training & Table-Top Exercise for State HQ & 02 District	<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, an online IRS Training &amp; TTEx was conducted on Cyclone Scenario.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and conducted by Consultant (ME &amp; IRS). Secretary (DM/Revenue), Govt of Goa, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of EW Agencies / IMD, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>



Date	State, Disaster Scenario and Event	Remarks
03 Dec 2021	<b>State:</b> Tripura <b>Scenario:</b> Earthquake <b>Event:</b> State-level Online IRS Training & Table-Top Exercise for State HQ & 08 District	<p>The State of Tripura is in Seismic Zone-V. Besides, the North-East (NE) region of India has a history of earthquakes. 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. An online IRS Training &amp; Table-Top exercise was therefore conducted for the State. 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 conducted by Consultant (ME &amp; 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 representatives of NCS, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>

Date	State, Disaster Scenario and Event	Remarks
10 Dec 2021	<b>State:</b> UT of Andaman & Nicobar Islands <b>Scenario:</b> Earthquake <b>Event:</b> State-level Online IRS Training & Table-Top Exercise for State HQ & 03 District	<p>The Union Territory of Andaman &amp; Nicobar Islands is in Seismic Zone-V. The UT has three Districts viz. South Andaman, North and Middle Andaman and Nicobar. The UT is vulnerable to many types of hazards/ disasters such as Earthquake, Cyclone, Flood, Tsunami, Drought, Land Slide, Volcanic activity in Barren Island. A Table-Top Exercise, depicting a scenario of an earthquake of magnitude 8.7, was thus conducted for the UT and all its districts.</p> <p>Event was chaired by Shri Rajendra Singh, Member, NDMA and conducted by Consultant (ME &amp; IRS), NDMA. Commissioner-cum-Secretary (DM), UT of A&amp;N Islands, important functionaries of the UT/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of NCS, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>

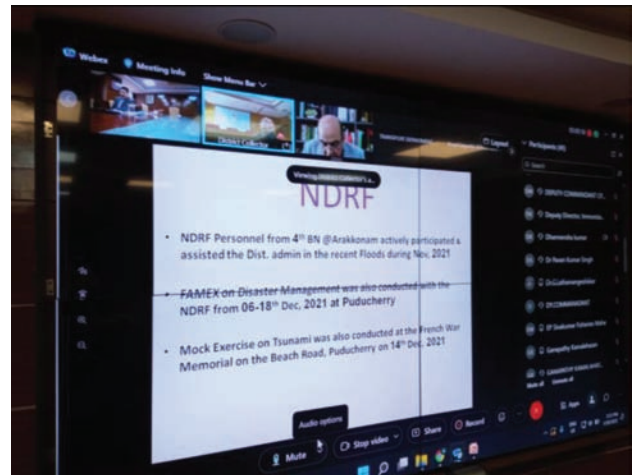


Date	State, Disaster Scenario and Event	Remarks
04 Jan 2022	<p><b>State:</b> UT of Jammu &amp; Kashmir</p> <p><b>Scenario:</b> Earthquake</p> <p><b>Event:</b> UT-level Online IRS Training &amp; Table-Top Exercise for UTHQ &amp; 20 District</p>	<p>Owing to its unique geographical and geo-climatic setting, the UT of J&amp;K is a multi-hazard prone region and has witnessed many natural and manmade disasters. One of the biggest vulnerabilities of this region is the earthquake and poses a colossal threat to progress and development. The UT of J&amp;K falls in Seismic Zones IV &amp; V. An online IRS Training&amp;Table-Top Exercise, depicting a scenario of an earthquake of magnitude 7.6 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 &amp; IRS). Secretary, Department of Disaster Management, Relief, Rehabilitation&amp; Reconstruction (DM RRR), UT of J&amp;K, important functionaries of the UT/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of NCS, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>

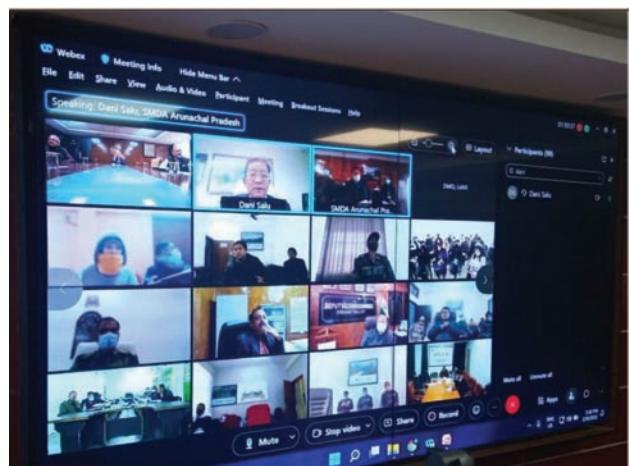




Date	State, Disaster Scenario and Event	Remarks
20Jan 2022	<p><b>State:</b> UT of Puducherry</p> <p><b>Scenario:</b> Cyclone</p> <p><b>Event:</b> UT-level Online IRS Training &amp; Table-Top Exercise for UTHQ &amp; its District</p>	<p>The UT of Puducherry lies in the southern part of the Indian Peninsula and consists of four small unconnected districts. Puducherry, Karaikal, and Yanam district on the Bay of Bengal and Mahe district on the Arabian sea. The major portion of the UT is prone to many natural hazards like floods, cyclones and earthquakes and is mainly influenced by North East monsoon. Online training on the Incident Response System, and a Table-Top Exercise was set for the month of January which coincides with the high probability of cyclones striking during this period in the coastal region of the UT.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), NDMA and conducted by Consultant (ME &amp; 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 representatives of EW Agencies / IMD, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>



Date	State, Disaster Scenario and Event	Remarks
10 Feb 2022	<p><b>State:</b> Arunachal Pradesh</p> <p><b>Scenario:</b> Earthquake</p> <p><b>Event:</b> State-level Online IRS Training &amp; Table-Top Exercise for State HQ &amp; 25 District</p>	<p>Arunachal Pradesh, a frontline State of India, is situated in Seismic Zone-V, and has a history of major earthquakes and occasional quakes of lesser intensity. High mountains, mighty rivers and dense forests have typically hampered inter-communication between people living in different river valleys. This isolation gets aggravated by a natural hazard such as an earthquake. These aspects therefore reinforce the imperative for greater involvement/integration of Central forces for response in the unfortunate event of a major disaster. An online IRS Training &amp; Table-Top was therefore conducted for the State.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and conducted by Consultant (ME &amp; IRS). Secretary, (DM), Govt of Arunachal Pradesh along with important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of NCS, BRO, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>



Date	State, Disaster Scenario and Event	Remarks
16 Feb 2022	<p><b>State:</b> Lakshadweep</p> <p><b>Scenario:</b> Cyclone</p> <p><b>Event:</b> UT-level Online IRS Training &amp; Table-Top Exercise for UT HQ &amp; 01 District plus 10 Islands</p>	<p>The Union Territory of Lakshadweep comprises of 27 islands, 3 reefs and 6 submerged sandbanks. Only 10 islands are inhabited (Agatti, Amini, Andrott, Bitra, Chetlat, Kadmat, Kalpeni, Kavaratti, Kiltan and Minicoy) and one island Bangaram has a tourist resort only. Surrounded by the vast ocean, islands of Lakshadweep are open to storm</p>

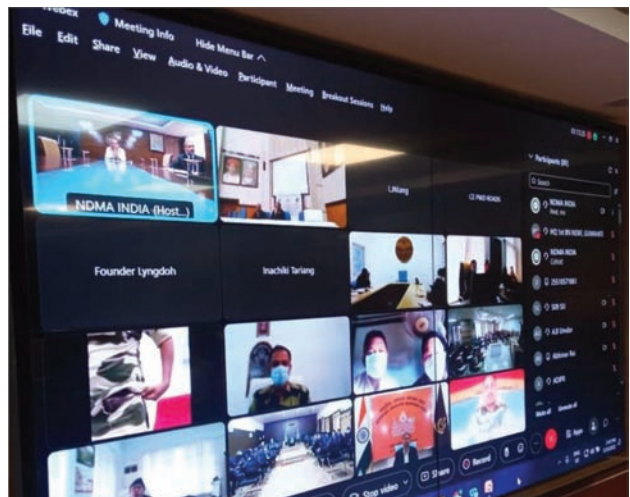
		<p>cyclones and heavy rains. The Chetlet, Kiltan, Kadmat, Amini, Bitra and Andrott sub-districts of Lakshadweep are more vulnerable to cyclonic wind hazard. Being an island UT vulnerable to Tropical Cyclones, an online IRS Training &amp; TEx was conducted on Cyclone Scenario.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and conducted by Consultant (ME &amp; IRS), Secretary (DM)&amp; Relief Commissioner, UT of Lakshadweep along with important functionaries of the UT/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of EW Agencies / IMD, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>
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Date	State, Disaster Scenario and Event	Remarks
22 Feb 2022	<p><b>State:</b> Bihar</p> <p><b>Scenario:</b> Floods</p> <p><b>Event:</b> State-level Online IRS Training &amp; Table-Top Exercise for State HQ &amp; 38 District.</p>	<p>Out of 38 districts, 28 districts are vulnerable to floods. 15 of which are highly vulnerable and 13 are partially affected. Therefore, an online IRS Training &amp; TEx was conducted on Flood Scenario.</p> <p>Event was co-chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and Sh PN Rai, IPS (Retd), Member, Bihar SDMA which was conducted by Consultant (ME &amp; IRS), NDMA. Secretary, (DM), Govt of Bihar along with 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
23 Feb 2022	<p><b>State:</b> Meghalaya</p> <p><b>Scenario:</b> Earthquake</p> <p><b>Event:</b> State-level Online IRS Training &amp; Table-Top Exercise for State HQ &amp; 12 districts.</p>	<p>The State of Meghalaya is located in Seismic Zone-V and has a history of quakes of varying intensity, including the magnitude 8.7 Shillong earthquake of 1897. An online IRS Training &amp; Table-Top Exercise was conducted based around a scenario that simulated the 1897 earthquake, with the State's districts experiencing shaking of intensity VII to IX. Event was chaired by Lt General S.A. Hasnain (Retd), Member, NDMA which was conducted by Consultant (ME &amp; IRS), NDMA. Commissioner &amp; Secretary (Rev &amp; DM), Govt of Meghalaya, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of National Center for Seismology (NCS), Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>



Date	State, Disaster Scenario and Event	Remarks
25 Feb 2022	<b>State:</b> Nagaland <b>Scenario:</b> Earthquake <b>Event:</b> State-level Online IRS Training & Table-Top Exercise for State HQ & 12 districts.	<p>The State of Nagaland lies under Seismic Zone-V, and notably, the epicenter of the 1950 Earthquake was located off Mon district of Nagaland. Thus, for Nagaland, an earthquake is a 'medium probability-high impact' event. An online IRS Training &amp; Table-Top Exercise, simulating a magnitude 8.7 earthquake, was therefore conducted for State and District level officials.</p> <p>Event was chaired by Lt General S.A. Hasnain (Retd), Member, NDMA which was conducted by Consultant (ME &amp; IRS), NDMA. Principal Secretary (Home &amp; DM), Govt of Nagaland, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of National Center for Seismology (NCS), Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>



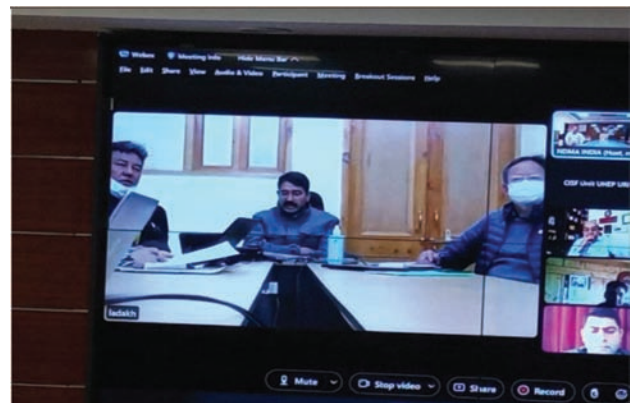
Date	State, Disaster Scenario and Event	Remarks
01, 08 & 10 Mar 2022	<b>State:</b> Sikkim <b>Scenario:</b> Earthquake <b>Event:</b> State-level Physical Mock Exercise for State HQ & all districts.	<p>The State of Sikkim, majority of which is in Seismic Zone IV, has a long history of earthquakes in/around it (18 Sept 2011 - it witnessed a major earthquake (6.8), which had caused widespread damage). A physical Mock Exercise was therefore conducted for the State.</p> <p>Event was co-chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and Shri SC Gupta, Chief Secretary, Govt of Sikkim which was conducted by Consultant (ME &amp; IRS), NDMA. Important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of National Center for Seismology (NCS), Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>



Date	State, Disaster Scenario and Event	Remarks
10 Mar 2022	<p><b>State:</b> Kerala</p> <p><b>Scenario:</b> Floods</p> <p><b>Event:</b> State-level Online IRS Training &amp; Table-Top Exercise for State HQ &amp;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, an online IRS Training &amp; 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 &amp; IRS), NDMA. Member Secretary, Kerala SDMA, 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
16 Mar 2022	<b>State:</b> UT of Ladakh <b>Scenario:</b> Earthquake <b>Event:</b> UT-level Online IRS Training & Table-Top Exercise for UT HQ and its 02 districts	<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, training on the IRS, followed by a Table-Top Exercise on an earthquake scenario was conducted online by NDMA. This training saw participation of officials of the UT of Ladakh down to District level along with other stakeholders.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and conducted by Consultant (ME &amp; IRS), NDMA. Divisional Commissioner &amp; Secretary (Revenue &amp; DM) UT of Ladakh, important functionaries of the UT/ District Incident Response Teams (IRTs), officials of the SDMA and DDMAs, Line Deptts and representatives of NCS, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>

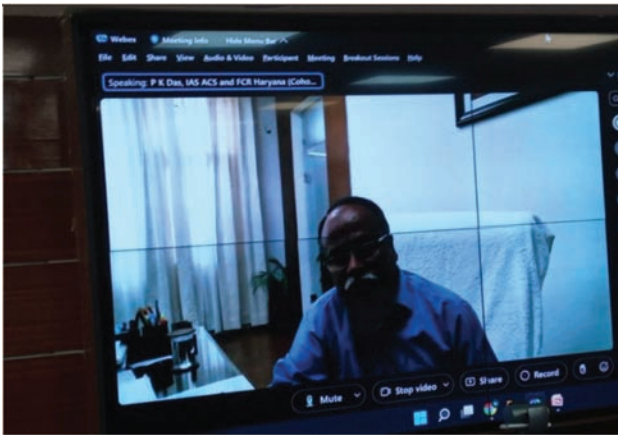


Date	State, Disaster Scenario and Event	Remarks
24 Mar 2022	<p><b>State:</b> Karnataka</p> <p><b>Scenario:</b> Chemical (Industrial) Disaster</p> <p><b>Event:</b> State-level Online IRS Training &amp; Table-Top Exercise for State HQ &amp; 31 districts</p>	<p>Karnataka is one of the most industrialized state 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, an online IRS Training &amp; Table-Top 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 and was conducted by Consultant (ME &amp; IRS), NDMA. Principal Secretary (Revenue &amp; DM), Govt. of Karnataka, 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.</p>



Date	State, Disaster Scenario and Event	Remarks
25 Mar 2022	<p><b>State:</b> Haryana</p> <p><b>Scenario:</b> Earthquake</p> <p><b>Event:</b> State-level Online IRS Training &amp; Table-Top Exercise for State HQ &amp; 22 districts.</p>	<p>The eastern parts of the State of Haryana lie in Seismic Zone-IV. Besides, a major earthquake in the Himalayas holds the potential to inflict damage in parts of the State. A Table-Top exercise was therefore conducted for the State.</p> <p>Event was chaired by Lt General Syed Ata Hasnain (Retd), Member, NDMA and conducted by Consultant (ME &amp; IRS), NDMA. Addl Chief Secretary, Government of Haryana, important functionaries of the State/ District Incident Response Teams (IRTs), officials of the SDMA and DDMA, Line Deptts and representatives of NCS, Armed Forces, CAPFs and NDRF, along with all other stakeholders participated.</p>





### Sharing of Feedback of Online IRS Training&TTEx:

6.9 After successful conduct of each online IRS Training&TTEx, 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 our country disaster resilient.

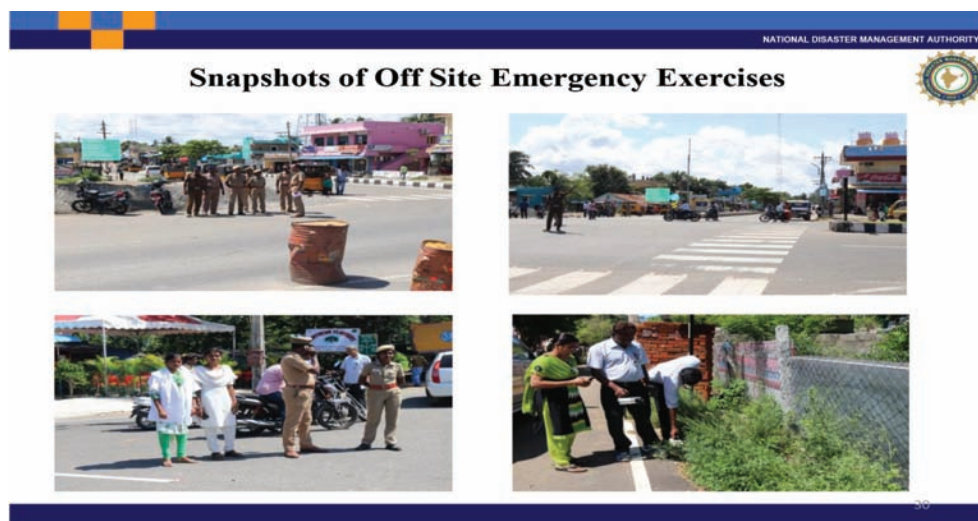
### Resumption of the Integrated Mock Exercise Process

6.10 Owing to mass vaccination and easing of the pandemic situation after third wave, NDMA resumed conducting integrated mock exercises physically as hitherto fore.



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

6.11 NDMA participated in the Radiological Off-Site Emergency Exercises (OSEE) in "Integrated Command Control and Response" mode scheduled at NPP Tarapur (Distt.- Palghar, Maharashtra) on 03 Sep 2021, at NPP Narora (Distt: Bulandshahr, Uttar Pradesh) on 08 Sep 2021, at NPP Kudankulam ( Distt: Tirunelveli, Tamil Nadu) on 23 Nov, 2021, at NPP Kalpakkam (Distt: Chengalpattu, Tamil Nadu) on 14 Dec, 2021 and online debriefing in respect of NPP Kaiga on 12 Jan 2022. Detailed feedback has been shared with State Authorities and Deptt. of Atomic Energy(DAE).



## PANEX-21: Multi-National Humanitarian Aid and Disaster Relief Exercise for BIMSTEC countries

6.12 BIMSTEC Countries are prone to a variety of natural disasters of varying magnitude. Disaster Management has therefore been a focus area for regional cooperation amongst Member States. NDMA participated in PANEX-21 conducted by Indian Army (MoD) with BIMSTEC Nations wef 20-22 Dec 2021 at Pune. The aim of the exercise was to foster joint planning and preparation to institutionalize regional co-operation and Inter-Governmental efforts amongst Member States during pandemic situations. PANEX-21 was a unique exercise in that not only was it based on simulation of a live disaster threat but also included participation of BIMSTEC Armed Forces who would invariably be co-opted in Disaster Management. The exercise scenario was set in the backdrop of an ongoing pandemic wherein a primary disaster of earthquake was painted and floods occurred as a secondary effect.

The main event comprised of three major events i.e Seminar, a Table-Top Exercise (TTE) and Multi Agency Exercise (MAE). All BIMSTEC Member States sent sizeable delegations reflecting the commitment of all Member States to strengthen the regional BIMSTEC DM framework. A galaxy of eminent personalities also attended the event, to include Hon'ble

Defence Minister, Chief of Army Staff, Member NITI Aayog and Chief Scientist WHO. In addition, representatives from all important national agencies involved in Disaster Management were present.

## District-level Mock Exercise Programme by NDRF

### 6.13 Review by Hon'ble Home Minister

On 30 June 2020, the Hon'ble Home Minister of India, Shri Amit Shah, 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.

6.14 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.

Phase	FY	Districts covered
Phase-I	2020-21	98
Phase-II	2021-22	239
Phase-III	2022-23	Annual Calendar of Distt Level MEs covering 298 Districts has been circulated to all States/UTs

6.15 In accordance with the directions, the NDRF has been tasked with conducting mock exercises at the district level. This training is being implemented in phases, as indicated below:

Members of NDMA held review meeting with NDRF on conduct of District Level Mock Exercise on 16 Sep 2021 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 ongoing COVID-19 pandemic. Therefore, the requisite target of conducting MEs in all the districts of the country within a span of three years appeared difficult. However, all out efforts are being taken to achieve the desired target within the shortest period in the near future.

### **Greater Involvement and Leadership of Women in Disaster Risk Management**

6.16 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 178 GD Mahila personnel have joined NDRF.

### **Encourage Public / Private Sector Industries for Procurement of Specialized Machines / Equipment to fight disasters and update the inventory of resources on IDRN portal**

6.17 The India Disaster Resource Network (IDRN), is a web based platform for managing the inventory of equipment, skilled human resources and critical supplies to enable the decision makers to access equipment and human resources required to combat any emergency

situation. IDRN is being hosted on NIC and managed by National Institute of Disaster Management (NIDM). As follow up, NDMA has conducted series of meetings with the concerned Central Ministries/Departments and requested for appropriate steps to encourage PSUs / Pvt. Sector industries under their administrative control to procure specialized Machinery / equipment for dual use i.e. for their own use as well as for use during disaster situations and list of such items / machinery / equipment be shared with District Authorities for updation of resource inventory on IDRN portal. Necessary provisions to procure such specialized Machinery / Equipment from CSR fund have been made. Training Session for IDRN portal have been organized by NIDM. States and UTs have also been requested by NIDM and NDMA for necessary updation the resource inventory on IDRN portal by District Authorities on regular intervals. Resulting, number of entries (Govt/ PSUs/Pvt) on IDRN portal has been increased considerably.

### **Study/analysis on utilization of local resources/appliances/equipment by various District Administrations / State Governments during disasters**

6.18 NDMA adopted normalization methodology of analysis and undertaking the study of a variety of 05 major recent disasters covering 12 districts in different regions of the country in order to get precise information in its true spirit regarding utilization of the local resources available with PSUs / Private Sector Industries by various District Administrations / State Governments during the time of emergencies / disaster

situations and also the use of IDRN portal. Suggestions of District Magistrates/Collectors have been taken into account by the study teams consisting of NIDM and NDMA officials. First draft Study Report and recommendations were discussed and deliberated upon in order to arrive at a final conclusion.

#### 6.19 Activities for Management of COVID-19

- (a) NDMA had worked out a list of 26 health related items / resources and got the same included on the list of items on India Disaster Resource Network (IDRN) portal by NIDM under the category 'Health Services' so as to facilitate the Disaster Management Authorities in accessing the desired resources for containment and management of COVID-19.
- (b) In order to manage the demand of oxygen, NDMA had requested all the States / UTs / District Magistrates / Collectors to update the availability of Oxygen Cylinders with various line departments/ agencies / hospitals on the IDRN web portal.
- (c) Considering the importance of IDRN Portal in managing the COVID 19 pandemic and to make optimum use of this facility, NDMA had requested all the States / UTs to update the resource inventories with special attention on inventories related to Health Sector.

#### 6.20 Control Room Activities

- (a) NDMA was involved in tabulating and compiling data on Lockdown/Weekend Lockdown/Curfew/Night Curfew order imposed by the states/

UTs in view of pandemic COVID-19 in the month of April and May 2021, in view of COVID-19 pandemic.

- (b) Comprehensive instructions were issued on 22 Apr 2021 to all States/UTs regarding review of preparedness for the South West Monsoon Season/ Tropical Cyclones, 24x7 Functioning of State Emergency Operation Centers (SEOCs), Raising and Strengthening of State Disaster Response Force (SDRF) along with combating second wave of COVID-19 Pandemic.
- (c) On 12 May 2021, a mail was sent to likely affected States/UTs regarding sharing preparedness measures taken by the States/UTs for the impending Cyclone 'Tauktae'
- (d) 02 meetings through VC were conducted with likely affected States/UTs and other stakeholders to review preparedness measures for Cyclone 'Tauktae' (13 May 2021) and 'Yaas' (21 May 2021) emphasizing the need of additional infrastructure, human and material resource, revision of preparedness and response plans for managing cyclone with concurrent COVID- 19 pandemic Situation.
- (e) On 23 May 2021, a meeting through VC reg issuing of Warning/Alert messages to coastal Communities/ Fishermen on impending Cyclone 'Yaas' was conducted with likely affected States/UTs, IMD and Department of Telecommunications. NDMA also shared SMS content for Cyclone warning, Do's and Don'ts and video links on Cyclone Do's and Don'ts for further contextualizing

locally and translated in vernacular languages for wider dissemination.

- (f) On 07 June 2021, a debriefing session through, Video Conference regarding

Cyclone 'Tauktae' and 'Yaas' was conducted which included brief by IMD on Early Warning & tracking, Feedbacks by HQ IDS, NDRF, ICG and DoT.

### Additional Activities

6.21 In FY2021-2022, 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
07 Apr 2021	NDMA took part in the meeting on 'Establishment of Public Health EOC (PHEOC)' along with representatives from National Centre for Disease Control (NCDC) and MoH& FW at NCDC, New Delhi.
29 Apr 2021	NDMA participated in the 16th ASEAN Defence Minister's Meeting (ADMM) & Expert Working Group (EWG) on 'HADR during pandemic'. The event was attended by representatives from HQ Integrated Defence Staff, Ministry of External Affairs, Ministry of Home Affairs as well as Foreign delegates
02 Jun 2021	On behalf of Govt of India, NDMA chaired the Indo-German Virtual Meeting on Cooperation in the field of Emergency Management held on 02 June 2021. The event was attended by Indian representatives from Ministry of External Affairs, Ministry of Home Affairs, DG (FS, CD & HG), NDRF as well as 06 delegates from Germany
26 Jul 2021	Interaction and Brainstorming by NDMA with NDRF:
16 Sep 2021	<ul style="list-style-type: none"> <li>Review/Upgradation of DM Equipment authorized to NDRF to meet operational requirements. All the issues / observations in the NDRF proposal were deliberated in detail and accordingly resolved.</li> <li>Review meeting with NDRF on Conduct of District Level Mock Exercises and took stock of the issues in respect of upcoming NDRF Academy, Nagpur.</li> </ul>
07 Feb 2022	<ul style="list-style-type: none"> <li>Discussed proposal of NDRF for establishing 28 new RRCs of NDRF and Training Needs Analysis (TNA) in NDRF under the chairmanship of Member &amp; Secretary I/C. Members and Senior Officers of NDMA alongwith DG, NDRF and his team of officers participated in the said meeting. After detailed deliberations, the fresh proposal of 28 additional RRCs in NDRF was recommended.</li> </ul>
23-24 Nov 2021	NDMA took part in online intercessional meeting of the ICG OTWMS conducted by INCOIS.
24 Nov 2021	NDMA participated in 17th EWG in HADR for ADMM Plus Countries which is a multilateral grouping of 10 ASEAN countries organized by Ministry of Defence and Ministry of External Affairs. Joint Advisor (Ops), Consultant (Medical Preparedness and Biological Disasters) and Consultant (Operations) attended the event as Moderators for Civil Military Coordination Mechanism and Disaster Relief Mechanism during pandemic.

25 Nov 2021	NDMA has participated in the 19th National Maritime Search and Rescue (NMSAR) Board Meeting held conducted by Coast Guard Headquarters, New Delhi.
30 Nov 2021	NDMA has participated in the initial VC meeting organized by Ministry of Civil Aviation (MoCA) regarding Heli Sewa Portal.
21 Dec 2021	Online meeting held with District Authorities having Nuclear Power Plants to discuss preparedness to deal with any nuclear emergency. Member & Secretary I/C, Member (RS), and Consultant (Ops) and Consultant (Nuclear & Radiological), NDMA participated in the said meeting alongwith other officers from DAE and DMs/Collectors of 07 districts.
20-24 Dec, 2021	"Safety & Disaster Management" Course for in-service Railway Officers conducted by Indian Railway Institute of Training Management (IRITM), Lucknow. NDMA delivered the lectures on topic "Crowd Management", "Institutional Mechanism for Disaster Management" and on "Chemical, Biological, Radiological and Nuclear Disaster".
19 Jan 2022	NDMA delivered presentation on DM Act, National Policy and Institutional Mechanism of Disaster Management and also on 'Role of Armed Forces' in Disaster Management for Joint Services Disaster Management Course-21 at College of Military Engineering (CME), Pune.
02 Feb 2022	NDMA participated in the online Integrated User Integration Workshop (UIW) conducted by Indian National Centre for Ocean Information Services (INCOIS), Hyderabad

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

### Background

1. There is a need for speedy dissemination of disaster alerts to maximum persons in order to ensure preparedness, both by the common person as well as the responding agencies. The components of this cycle are the Alert Generating Agencies (IMD, CWC, FSI, DGRE, INCOIS etc), the warning/alert disseminating agencies (cellular network, radio, television, Internet etc) and the recipients of this warning (general public and the responders). The efficient workflow of this chain is monitored by the Disaster Management Authorities at the National as well as State level.

2. Presently in India the dissemination of alerts is being done autonomously by the alert generating agencies by various methods like fax, emails, telephones etc. However, most of the developed nations have adopted Common Alerting Protocol (CAP) based integrated Alert dissemination platforms.

3. 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 workability 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 a suitable interoperability converting device.

### Project Brief

6.23 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 a successful Pilot Project implemented in Tamil Nadu, Pan India implementation of Phase I of the CAP Project has been sanctioned by the Government. The Project will automate flow of Alerts between Stake Holders 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 Centre for Ocean Information Services (INCOIS).
  - iv. Defence Geo-Informatics Research Establishment (DGRE).
  - v. Geological Survey of India (GSI).
  - vi. 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 software applications.
- iv. Public address systems on railway stations.
- v. Coastal sirens and other legacy community warning systems.
- vi. GAGAN and NavIC satellite channels

### Project Scope

6.24 The Project is being implemented by Center for Development of Telematics (C-DOT) in two phases as under: -

- a) MoU for CAP Project (Phase I) has been signed and Work Order issued on 23 Aug 2021. The Project is to be completed in 18 months (by 22 Aug 2023) 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.
  - iv. Development and Publishing of Internet Browser clients for notifications.
  - v. Integration with Google Alert and Publishing of RSS feed.
  - vi. Integration with GAGAN and NavIC Satellite terminals

## Releasing of CAP document by Hon'ble HM on 28.09.2021 on the eve of 17th Formation Day of NDMA



- vii. Proof of Concept (PoC) for TV, coastal Sirens, IR Railway Station, AIR Radio Station and CB for all TSPs.
- b) Phase II of the Project will comprise implementation of PoC's on Pan India basis.
- c) Project is under progress.

### Impact of the Project

- 6.25. Seamless web based integration of all Stakeholders for speedy notification, approval and dissemination of Alerts.
- 6.26. Near real time dissemination of Alerts to citizens and responders thereby ensuring preparedness mitigating loss to life and property.
- 6.27. Geo targeted Alerts in regional vernacular for speedy dissemination.

- 6.28. Web based dashboard to Disaster managers for approving/editing alerts and choosing media for dissemination.
- 6.29. Powerful GIS based Analytic tools for Disaster managers.
- 6.30. Extension of Emergency Response Support System (ERSS) (Dial 112) for Disaster Emergencies

### Background

- 6.31. Emergency Response Support System (ERSS) 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. The project initiated by MHA (WS Div), has been implemented in all 36 States/UTs (In 28 States/UTs by CDAC and in 08 States/UTs by vendors other than CDAC).

6.32 Currently ERSS does not support emergency calls related to Disasters. ERSS is also not integrated with the SEOCs and Disaster Responders.

### Project Brief

6.33 In order to implement the vision of 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 proposed Project shall extend the existing ERSS system to cater for Disaster Emergencies. Salient features of the proposed 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 at 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.

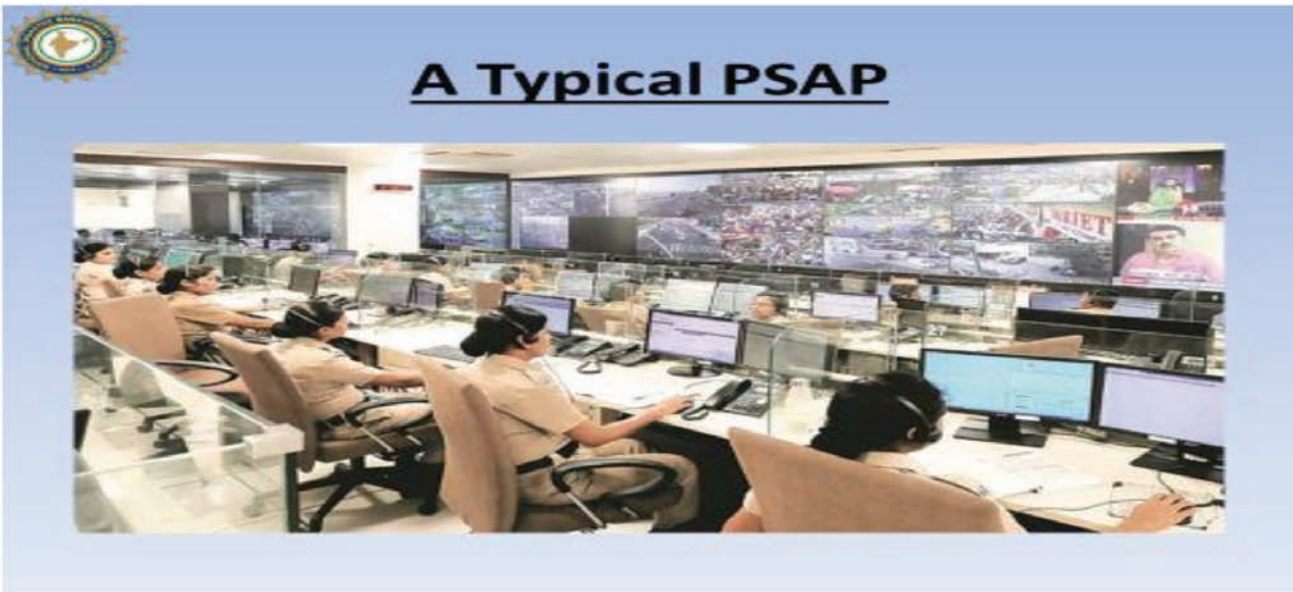
6.34. CDAC, based on their experience of implementing the existing ERSS system in 28 States/UTs, has been nominated to implement the Scheme.

6.35. 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 - 02 Feb 2023.
- c. Sustenance by NDMA and Warranty Period - Three years from the date of taking over for each State/UT.

6.36. 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

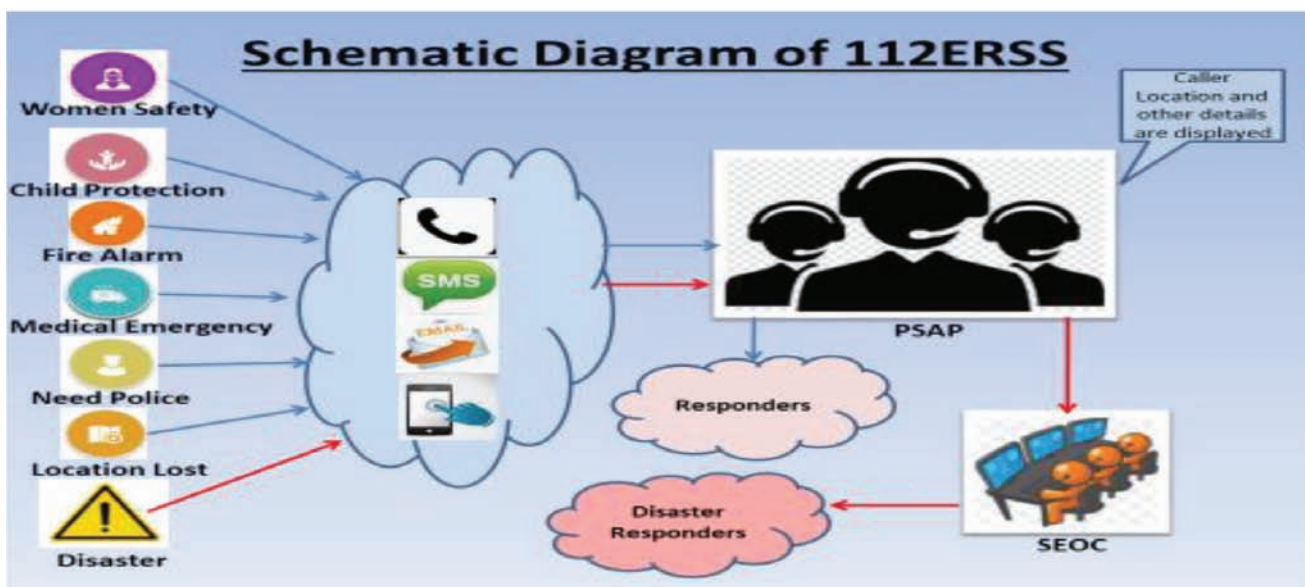


PMU for the duration of the Project (18 months' implementation period and 36 months' sustenance period).

6.37. 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 under progress.

6.38 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. Although the Award had been announced every year since its inception; the investiture ceremony was not held. The award ceremony of Subhash Chandra Bose Aapda Prabandhan Puraskar was held first time on 23.01.2022 at India Gate, the birth anniversary of Netaji Subhash Chandra Bose, wherein Hon'ble Prime Minister presented the awards to awardees of previous years and the awardees of 2021-22, which are as under:

extensively in view of Covid-19 pandemic. The awareness campaigns have two prime objectives:

- a) Preparing citizens for any impending disasters (earthquake, cyclone, floods, landslides, pandemic etc.)
- b) Informing and educating people on various preventive and mitigating measures to reduce losses to the maximum extent.

Sl.No.	Awardee	Year	Category
1.	8th Battalion NDRF, Ghaziabad	2019	Institutional
2.	Disaster Mitigation & Management Centre (DMMC) of Uttarkhand	2020	Institutional
3.	Shri Kumar Munnan Singh, IPS (Retd) Former Member, NDMA	2020	Individual
4.	Dr. Rajendra Kumar Bhandari, Chairman Indian National Academy of Engineering Forum on Disaster Mitigation	2021	Individual
5.	Sustainable Environment and Ecological Development Society (SEEDS)	2021	Institutional
6.	Prof. Vinod Kumar Sharma,	2022	Individual
7.	Gujarat Institution of Disaster Management (GIDM)	2022	Institutional

### Awareness Generation

6.39 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. This year, awareness campaigns were run through TV, Radio and Social Media

6.40 The following awareness campaigns were carried out during 2021-22 (upto 31/03/2022)

#### Audio-Visual Campaigns

6.41 Doordarshan/All India Radio/Lok Sabha TV: Audio-Videospots 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	Lok Sabha TV
Cyclone	5 days from 09/04/2021 to 13/04/2021		
Cyclone- 'Tauktae'	5 days from 15/05/2021 to 19/05/2021	5 days from 15/05/2021 to 19/05/2021	
Cyclone-'Yaas'	5 days from 22/05/2021 to 26/05/2021	5 days from 22/05/2021 to 26/05/2021	
Cyclone Pre-Monsoon	7 days from 27/10/2021 to 02/11/2021		
Thunderstorm & Lightning	5 days from 15/04/2021 to 19/04/2021	5 days from 12/04/2021 to 16/04/2021	
	5 days from 10/06/2021 to 14/06/2021	5 days from 10/06/2021 to 14/06/2021	
Flood	7 days from 07/06/2021 to 12/06/2021	7 days from 22/06/2021 to 28/06/2021	
	7 days from 22/06/2021 to 28/06/2021		
Urban Flood	7 days from 07/06/2021 to 12/06/2021	7 days from 22/06/2021 to 28/06/2021	
	7 days from 22/06/2021 to 28/06/2021		
Earthquake	7 days from 22/07/2021 to 28/07/2021	7 days from 22/07/2021 to 28/07/2021	26 days from 19/07/2021 to 13/08/2021
	6 days from 04/03/2022 to 09/03/2022		
Landslide	7 days from 28/07/2021 to 03/08/2021	7 days from 28/07/2021 to 03/08/2021	
Cold Wave	7 days from 20/12/2021 to 26/12/2021	7 days from 05/01/2022 to 11/01/2022	
Avalanche	7 days from 30/01/2022 to 05/02/2022		
Heat Wave	18 days from 25/02/2022 to 14/03/2022		
Subhash Chandra Bose Aapda Prabandhan Puraskar		7 days from 07/09/2021 to 13/09/2021	

Cyclone, Cold Wave, Earthquake, Thunderstorm & Lightning (During ICC T-20 Men's World Cup, 2021)		During 8 matches on 24/10, 31/10, 03/11, 05/11, 08/11, 10/11, 11/11, 14/11	
Earthquake & Landslide (During New Year Celebration Programme 'AUM-Soul Connect)	3 days from 31/12/2021, 01/01/2022 & 02/01/2022		

#### 6.42 **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 01/07/2021 in newspapers for inviting nominations and through a special one week campaign on All India Radio. The award ceremony of Subhash Chandra Bose Aapda Prabandhan Puraskar was held first time on 23/01/2022 at India Gate wherein Hon'ble Prime Minister presented the awards to the awardees of previous years and the awardees of 2021-22. Short Videos/podcasts were produced containing interviews of the previous year's awardees. These videos were widely disseminated through social media and on the website of NDMA.

#### 6.43 **"Aapda Ka Saamna" a special programme of Panel Discussion/Talk Show on Doordarshan:**

For creating awareness amongst public, NDMA has organized a programme of panel discussion/talk show "Aapda Ka Saamna" on DD News. Two episodes on Coastal Hazards and River

& Coastal Erosion have been telecast through DD News on 13/03/2022 and 27/03/2022 (Sunday), respectively, with repeat telecast of the same episodes on Saturday.

#### **NDMA E-Newsletter and blog**

6.44 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. Similarly, the blog is updated regularly. Their reach is also optimized using various techniques on social media.

#### **Social Media Campaigns**

6.45 In addition to awareness campaigns on TV and Radio, awareness campaigns related to prevention, mitigation and preparedness of disasters, before, during and after disasters were also carried out through social media platforms using hashtags like #heatwaveawareness, #earthquakesafety, #floodsafety, #urbanflood, #lightningsafety, #coldwave,

#avalanche, #covid-19, #WearYourMask, etc., throughout the year. Social media creatives and short films highlighting do's and don'ts were also shared on social media platforms of NDMA from time to time.

### Twitter Report

6.46 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 31<sup>st</sup> March, 2022 : 3,33,410
- Followers as on 31<sup>st</sup> March, 2021 : 2,51,306
- Number of followers increased : 82,104

### Celebration of 17th Formation Day of NDMA

6.47 17th Formation Day of NDMA was celebrated on 28/09/2021 at Sushma Swaraj Bhawan, New Delhi with the theme "Cascading effects of disaster events in Himalayan region". Sh. Amit Shah, Hon'ble Union Minister of Home Affairs and Minister of Cooperation, graced the occasion as the Chief Guest alongwith Minister of State for Home Sh. Nityanand Rai, Sh. Ajay Kumar Mishra, & Sh. Nisith Pramanik, as Special Guests. 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 five important documents were also released on the occasion:

- i. Aapda Mitra Scheme Document
- ii. Aapda Mitra Training Manual

- iii. Common Alerting Protocol (CAP) Scheme Document
- iv. Guidelines for Earthquake Resistant Built Environment
- v. Guidelines on Cold Wave and Frost

While Ministries/Depts, Resident Commissioners, DGs of CAPFs participated in the Formation Day physically, States/UTs, SDMAs, related organizations and trained Aapda Mitra volunteers participated in the event virtually.

6.48 Communication with States/UTs: NDMA has produced 39 Animation 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.

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.

6.49 IEC material: NDMA has various short video spots, animation films, sign language videos for awareness generation. These materials are available on NDMA's

The following posts were done live at the time of event:

- Inaugural Address by Hon'ble Home Minister Shri Amit Shah:



- Launch of Schemes Documents by Hon'ble Home Minister Shri Amit Shah:



- Launch of Guidelines by Dr. PK Mishra, Principal Secretary to the Hon'ble Prime Minister:



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.

6.50 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 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 7

## 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 is a 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 21, comprising one Joint Secretary, one Director, two Under Secretaries, one Assistant Director (OL), 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, etc. 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 the PAO, NDMA under the supervision of CCA, Ministry of Home Affairs.

### Finance and Budget:

The Scheme wise Budget Estimate, Revised Estimate & Expenditure for the period April 2021 to March, 2022 is as follows:

(Rs. in Crores)

Name of the project	B.E 2021-22	RE 2021-22	FE 2021-22 / Re-app. From MHA	Exp. up to 31.03.2022
National Cyclone Risk Mitigation Project (NCRMP) with World Bank Assistance	296.27	185.12	171.27	169.99
Other Disaster Management Projects - (ODMP)	50.32	15.79	18.59	16.00
Establishment Charges	51.72	48.69	45.48	42.83

**Note: Inclusive of figures of I&B Ministry- DAVP.**

(Rs. in Crores)

Grant No. 48 MHA					
MH	Scheme	B.E. 21-22	RE 21-22	FE 21-22 /RE appropriation from MHA	Exp. up to 31.3.2021
2245	ODMP	23.68	5.69	3.99	2.49
3601	ODMP (Release to State Govt.	26.00	10.00	14.25	13.16
3602	Release to UT w/o Legis)	0.64	0.10	0.35	0.35
	Total a)	50.32	15.79	18.59	16.00
2245	NCRMP (Est. Charges)	26.27	15.12	12.57	11.07
3601	NCRMP (GIA)	270.00	170.00	158.70	158.92
	Total b)	296.27	185.12	171.27	169.99
2245	Establishment Charges	51.72	48.69	45.48	42.83
	Total (c)	51.72	48.69	45.48	42.83
2245	CDRI	50.00	15.00	15.00	15.00
	Total (d)	50.00	15.00	15.00	15.00
	Grand Total NDMA	448.31	264.60	250.34	243.82

# 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.	Shri Sanjeeva Kumar	Member Secretary (27.01.2021 to 30.09.2021)
4.	Lt Gen (Retd) Syed Ata Hasnain, PVSM, UYSM, AVSM, SM, VSM & BAR	Member (Since 21.02.2020)
5.	Shri Rajendra Singh	Member (Since 20.02.2020)
6.	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	Sh. 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

1.	Shri Sanjeeva Kumar, Member Secretary (upto 30.09.2021)
2.	Sh. Ravinesh Kumar, Financial Advisor
3.	Dr. V. Thiruppugazh, Additional Secretary (Policy & Planning) (upto 30.06.2021)
4.	Shri Ramesh Kumar Ganta, Joint Secretary (Admn.) (upto 01.06.2021)
5.	Brig Ajay Gangwar, Advisor (Ops. & Comn.) (upto 31.10.2021)
6.	Ms Sreyasi Chaudhuri, Project Director, NCRMP
7.	Shri Kunal Satyarthi, Advisor (Policy & Planning)



