



ANNUAL REPORT 2020-21



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

Contents

		Page No.
	Abbreviations	iii
Chapter 1	Introduction	1
Chapter 2	Functions and Objectives	5
Chapter 3	Policy, Plans and Guidelines	7
Chapter 4	Disaster Risk Mitigation Projects	19
Chapter 5	Capacity Development	55
Chapter 6	Mock Exercises & Awareness Generation	63
Chapter 7	Administration and Finance	105
	Annexure - I	108
	Annexure - II	110

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 the 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 towards disaster management from a relief-centric to a holistic and integrated approach covering the entire gamut of disaster management (prevention, mitigation, preparedness, response, relief, reconstruction and

rehabilitation). The approach is based on the conviction that development cannot be sustainable unless disaster mitigation is built in the development process.

- 1.5 The Government of India (Gol), 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 Gol 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.	Shri Sanjeeva Kumar	Member Secretary (Since 27.01.2021)
2.	Shri G. V. V. Sarma	Member Secretary (Upto 27.01.2021)
3.	Shri Kamal Kishore	Member (Since 16.02.2015)
4.	Lt Gen Syed Ata Hasnain, PVSM, UYSM, AVSM, SM, VSM & BAR (Retd)	Member (Since 21.02.2020)
5.	Shri Rajendra Singh	Member (Since 02.02.2020)
6.	Shri Krishna Swaroop Vatsa	Member (Since 04.05.2020)

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

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

Constitution of NDMA

- 1.7 NDMA was constituted on 30th May, 2005 by an Executive Order of the Gol. 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 in Annexure I. The current members and their dates of joining the Authority are given below:

- 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 to integrate 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 their 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) besides the supporting staff. The organization is also supported by many Senior Research Officers. Disaster being a specialized subject, it has also been ensured that the expertise of Specialists is available on a 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 in 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 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 the 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 for the preparation of plans. Preparation of these Guidelines takes a minimum of 12 to 18 months, depending upon the complexity of the subject. The approach to the 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.

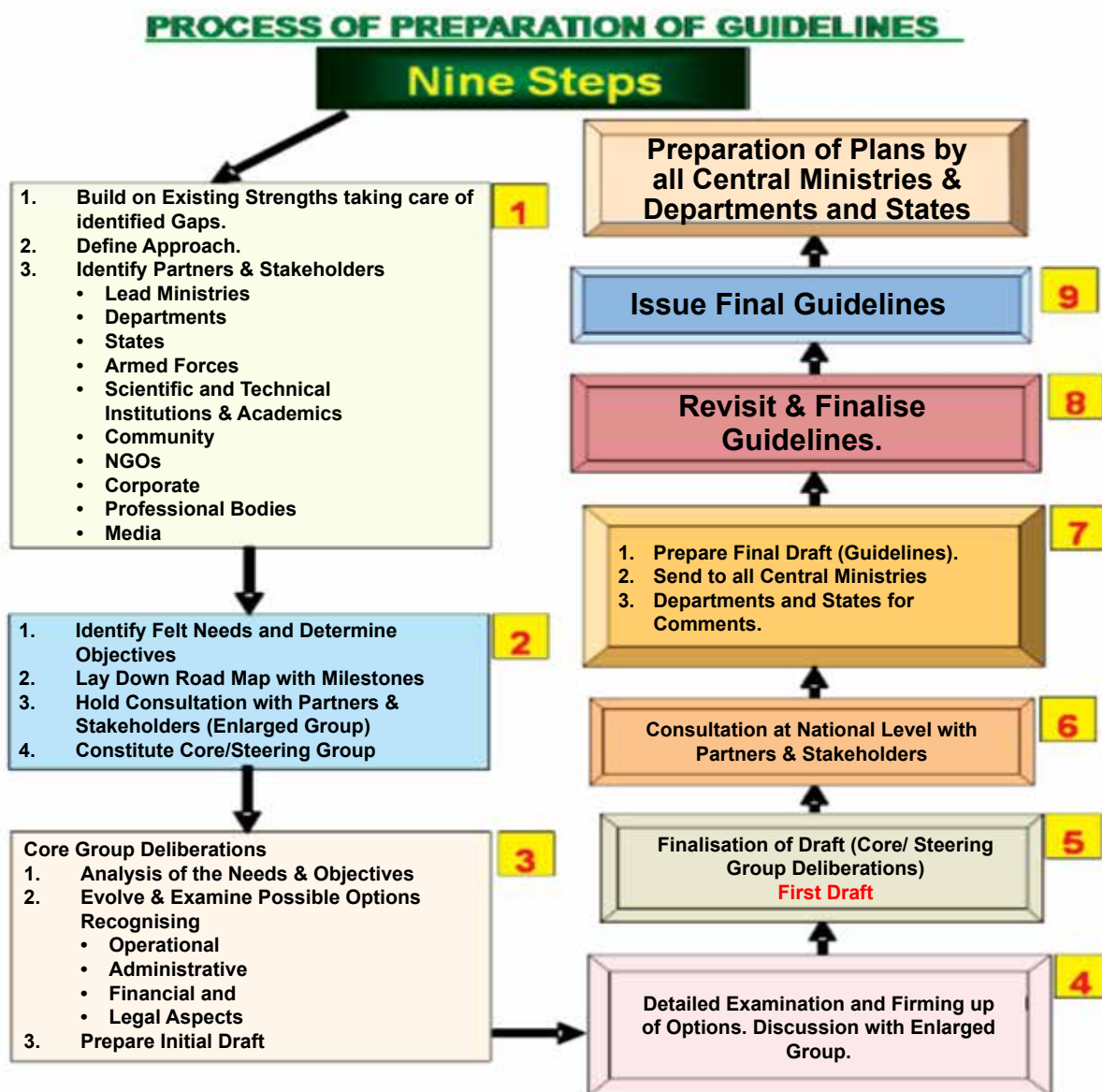


Figure 4.1

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 & Lightening / 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

(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 Panchayat 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

3.6 Guidelines/ Reports released during 2020-21:

(i) Management of Glacial Lake Outburst Floods (GLOFs):

Global warming and climate change are among the major challenges the world faces today. The hazards associated with glacial formations in the Indian Himalayan Region (IHR) require an integrated strategy to minimize disaster risks. NDMA has partnered with the Swiss Agency for Development and Cooperation (SDC) along with national experts from concerned Indian institutions for the development of the National Guidelines on Management of Glacial Lake Outburst Floods (GLOFs). These guidelines aim to enable concerned ministries or departments of State/UT, central governments and other stakeholders to take concerted action for preparedness, prevention, mitigation, and response to GLOFs.

These Guidelines also emphasize awareness and capacity building of the relevant stakeholders.

(ii) Report highlighting Global best practices in Forest Fire Management.

After a scientific review, a compilation of global best practices for forest fire management was completed by the division. The document covers state-of-art practices across the world that have a practical implication for India. Further, the desktop review also includes some of the community-based and traditional best practices across the world. The document will add to the already existing efforts in forest fire management.

(iii) Standard Operating Procedure (SOP) on accepting International Assistance for Disaster Relief and Recovery

An Inter-Ministerial working group was constituted in NDMA for formulating

policy on accepting International Assistance for Disaster Relief and Recovery. The Standard Operating Procedure (SOP) for accepting International Assistance for Disaster Relief was formulated by NDMA and sent to MHA for further action. The SOP delineates certain modalities, which may be useful for operationalizing the existing policy of Government of India on the issue.

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 :

NDMA organised a national webinar on heat wave risk reduction (Theme: Early Planning for Heat wave Risk Reduction), aimed to sensitise States to the need of preparing and implementing Heat Action Plans in line with NDMA's National Guidelines on Heat Wave 2019.

The objectives of Workshop include sharing of experiences and lessons learnt for sustainable long term mitigation and future course of action on heat wave. Important deliberations on a range of topics were carried out in three technical sessions during the workshop. These are as follows:

- (i) Technical Session I: Early warning, forecasting and communication strategy
- (ii) Technical Session II: Preparedness planning for heat wave risk reduction
- (iii) Technical Session III: Sharing of state experiences and Capacity Building

Members of NDMA and senior officials from central Ministries/Departments, experts on heat wave, early warning and forecasting agencies, State governments, Administrative

Training Institutes, research institutions and NGOs participated in the workshop.

With this webinar, the National Disaster Management Authority has initiated efforts well in advance for managing the Heat wave season 2021.

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 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 31.03.2021) 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

(e) (As on 31.03.2021) 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. Ministry of Coal
5. Department of Commerce
6. Department for Promotion of Industry and Internal Trade
7. Department of Telecommunications
8. Ministry of Culture
9. Department of Defence Production
10. Ministry of Earth Sciences
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. Department of Justice
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 Rural Development
33. Ministry of Electronics and Information Technology
34. Ministry of Panchayati Raj
35. Department of Public Enterprises

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 from 2018-19. 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 31.03.2021) 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 and 1 UT)	Rs. 134.90 lakh
	Total	Rs. 751.62 lakh

(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 has been identified for three years since 2018-19. 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 are as under:

Financial Year	No. of States 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
	Total	Rs.1060.50 lakh

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 first deliverable / interim report and the same was accepted by NDMA.

(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 has submitted the 1st report (first six monthly report) for the project. The same has been accepted.

(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.

3.13 Work done for COVID - 19:

- (i) Prepared template for State level and district level plan for COVID-19 management.
- (ii) Awareness materials including Audio Visuals, Dos & Don'ts and FAQs etc. for different stakeholders regarding prevention and preparedness of COVID - 19, steps to be taken regarding Corona Virus.
- (iii) Advisories issued by NDMA to States/UTs regarding prevention and preparedness of COVID - 19, steps to be taken regarding Corona Virus and tracking of people who have arrived from specified Countries, in the context of Coronavirus: before the revised instructions (prior to start of lockdown phases) - issued on 04 Feb, 5 Mar and 17 Mar, 2020
- (iv) NDMA issued orders for imposition and extension of Lockdown for containment of COVID - 19 and later issued orders for phased reopening of prohibited activities.
- (v) NDMA Advisory to SDMAs dated 28.03.2020, regarding coordination of response activities, including situation awareness and resource awareness.
- (vi) NDMA Letter dated 31.03.20 to all SDMAs about Coordination with Civil Society Organisations / NGOs to mitigate the spread of COVID - 19.
- (vii) Reviewed various documents, SOPs and Advisories prepared by WHO, SPHERE, other organizations and provided comments.
- (viii) NDMA produced a documentation of the Indian Experience covering (1st January to 31st May, 2020) and also produced case studies of good practices at the state and local level.

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 Governments 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 the experience of Cyclone Phase -I in 2013, the cost estimate for NCRMP Phase-I was revised to Rs.2331.71 crores in July 2015 with inclusion of additional infrastructure and the completion target was revised to 31.03.2018. After considering additional requests from the project States, the project cost has further been revised to Rs. 2541.60 crores in May 2017, with date of completion as 31.12.2018. 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 crores with 15.03.2021 as project completion date. However, the project cost has further been revised to Rs. 2691.00 Cr in Jan 2020, with date of completion remained as 15 March 2021. The outlay has been further 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. 1187.68 crore of Central Share was released to the States till 31.03.2021 and during the

year FY 2020-21, Rs. 74.12 crore has been released to the States.

- 4.5 In both phases, 730 nos. of Multi-purpose cyclone shelters, 1291.52 Km of Roads, 88.12 Km of Saline embankment, 612.43 Km Underground Cabling (UGC) and 34 nos. of bridges were constructed till 31st March 2021. During FY 2020-21, 17 nos. of Multi-purpose cyclone shelters, 1.00 Kms of Roads and 198.609 Kms UGC

were constructed upto 31st March 2021.

Sr. No.	Name of Activity	Total of Phase I & II	Total During FY 2020-21
1	MPCS (No.)	730	17
2	Road (Kms)	1291.52	1
3	UGC (Kms)	612.43	198.609
4	Bridge (No.)	34	0
5	SE (Kms)	88.12	0

Photographs of Assets created under NCRMP Phase-II



Figure 1 MPCS at Maktupur, Junagadh (Gujarat)



Figure 2: MPCS at Mararikullam, Alappuzha district (Kerala)



Figure 3: MPCS at Gorsar, Porbandar district (Gujarat)



Figure 4: Kumbla, Kasargode district (Kerala)



Figure 5: MPCS at Manaki-Kumta (Karnataka)



Figure 6: MPCS at Thekkatte, Udupi District (Karnataka)

Photographs of Assets created under NCRMP Phase-II



Figure 7: MPCS at Krishnapur, Navsari district (Gujarat)



Figure 8: MPCS at Delwada, GirSomnath district (Gujarat)



Figure 9: MPCS at Sagardistrict (West Bengal)



Figure 10: MPCS at Basanti district (West Bengal)



Figure 11: MPCS at Visanvel, Junagadh district (Gujarat)



Figure 12: MPCS at Debolin (Goa)

Initiatives by Mitigation Division, NDMA

4.7 Mitigation Division takes up pilot projects and studies on the 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:-

EARTHQUAKE :

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

4.8 In continuation to Phase-I, the project further extends to 60 more cities apart from the earlier studied 50 cities. The work of the Phase-II has been awarded to Malaviya National Institute of Technology (MNIT), Jaipur at the cost 116.2 lakhs for a period of 24 months. These 60 towns will be selected on the basis of population, density and housing threat factor. The risk obtained from the study will mainly be the composition of the hazard, vulnerability, and exposure. The study would assimilate the risk associated with the city and will also provide an inter-comparative statement of the different cities.

Primer on Rapid Visual Screening (RVS)

4.9 A uniform methodology for Rapid Visual Screening for Indian building typologies was prepared by NDMA through International Institute of Information Technology (IIIT). Pre- Earthquake and Post-Earthquake Level 1 Assessment form for 7 different building typologies were developed. The forms are developed to tag the building in terms of Red, Yellow

and Green based on the assessment conducted. It also encapsulates building type, seismic zone, soil conditions, horizontal, and vertical irregularities, apparent quality in buildings and short column etc. that affects the seismic performance of the building. Apart from these, it also gathers information about the occupancy of the building and the presence of non-structural falling hazards which can also cause destruction during an earthquake. The document was released on 13th October on International Day for Disaster Risk Reduction.

Development of Simplified Guidelines/ Manual for Earthquake Resistant Built Environment

4.10 For better understanding of different measures related to resilient housing, NDMA has been developing guidelines for the interest of people. In this series, a simplified guideline based upon BIS codes and NBC-2016 is being developed at the cost of ₹ 10 Lakhs.

This guideline illustrates the code provision related to construction of houses in a simplified manner. The work of preparing the guideline has been awarded to CBRI Roorkee. A draft of the guideline has been prepared and submitted to NDMA. The guideline would be useful for the common man in the process of construction, purchase and maintenance of houses/flats.

Development of Resource Materials of Earthquake Engineering

4.11 NDMA has taken an initiative to develop the resource material on Earthquake Engineering/Architecture for the undergraduates in the disciplines of Civil Engineering and Architecture. The main

aim of developing the resource material is to improve availability, accessibility of basic concepts in earthquake engineering so as to ensure widespread knowledge dissemination about seismic safety the built environment. A core group has been formed to develop the content. Five subjects have been finalized and the development of content is under progress.

PSHM

- 4.12 NDMA has taken an initiative with IIT Madras to update Earthquake Hazard Map of India at the cost of Rs12.3 lakhs. The map is in final stage and draft of the same has been submitted to BIS and NDMA. The Map is under discussion and consideration in the CED-39 sub-committees. The map will be helpful for different stakeholders in analysis and design process and will be in line with the modern standards followed worldwide.

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

- 4.13 Based on the deliberations of CED-39 Committee of BIS which is committee that look after Code pertaining to Earthquake Engineering, NDMA decided to fund for 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 Lakhs with a completion period of around 12 months. Out of which ₹21.26 lakhs was released to the Institute. The tri-partite MoUs among

NDMA, BIS, and concerned IITs. R&D work has been commenced towards the development of the respective codes. The first draft of the work has been submitted by IIT Roorkee, IIT Bhubaneshwar and IIT Madras respectively.

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

- 4.14 A compendium of traditional earthquake resilient construction has been under preparation by NDMA through IIT Ropar at the cost of ₹ 25 Lakh with completion period of 24 months. The main objective of the project is to identify and document the building typologies in Indian Himalayas, seismic vulnerability assessment, and suggesting safety measures for such kind of building typologies. The work has been commenced by IIT Ropar, and has made significant progress and subsequent filed visit for the study are also being undertaken.

Resource mapping of Earthquake Engineering Faculties in Engineering/Architect Colleges

- 4.15 An initiative to map out the earthquake engineering professional on a portal has been undertaken by NDMA through MNIT Jaipur at the cost of ₹ 23.5 lakhs for the period of 12 months. The project aims to develop a database of earthquake experts and other relevant resources across the country and the development of the MIS platform to host the earthquake resource database. This portal will be used as a tool to identify the seismic expert and other relevant fields.

Pilot project to improve Earthquake Resiliency of Masonry Lifeline Structures and upcoming constructions

4.16 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 the technology demonstration units and capacity building of engineers, bar benders, and carpenters. The total cost of the Project is ₹ 950 Lakhs. Out of which ₹ 273 lakhs was released.

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

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

4.17 The total cost of the Project is ₹ 410 Lakh. The project is awarded to IIT Roorkee to develop the earthquake scenario.

The main objectives of the Scheme are: -

- ✓ Develop a science based earthquake scenario for repeat of Magnitude 8.4 Bihar 1934 earthquake. Generate large scale awareness about its impact in the regions.
- ✓ Disseminate earthquake scenario

information to stakeholders for improved planning for disaster preparedness and response.

- ✓ Sensitize local population and motivate them for participation in mega mock exercise.

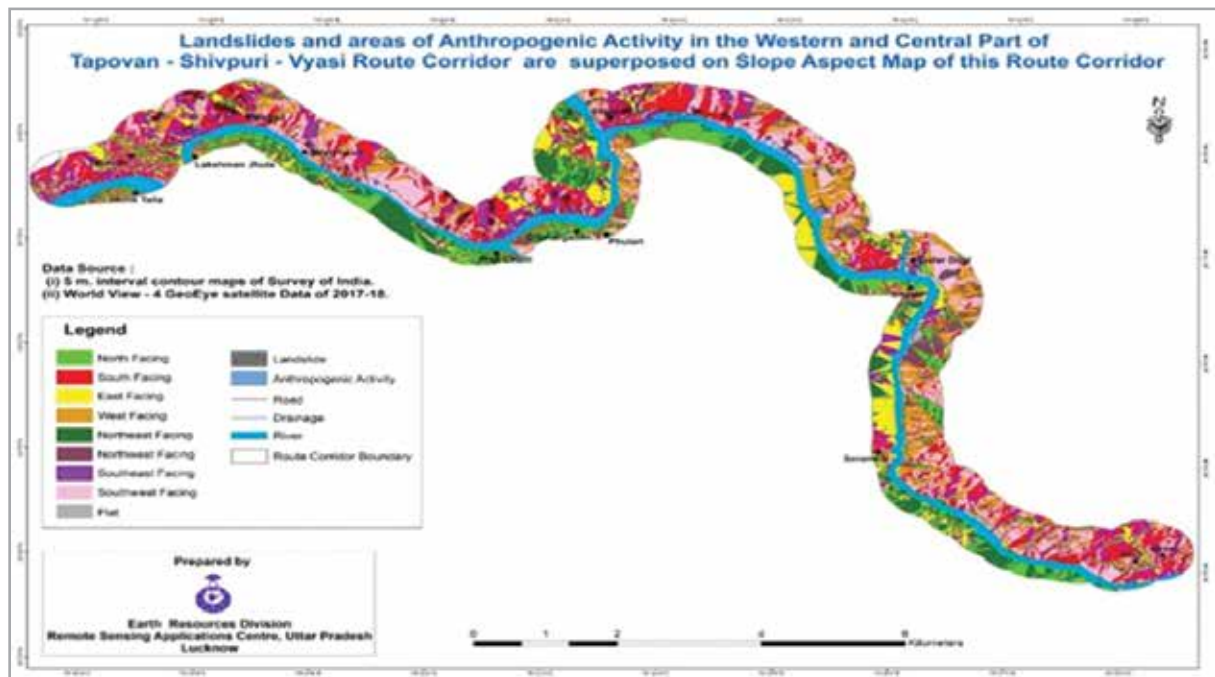
The project envisages participation of state of Bihar, Uttar Pradesh and Uttarakhand, GSI, State geology and mining directorates, regional engineering and technical institutions, NGOs and NDMA's support and guidance. Scenario Development and coordination of project activities with Bihar, Uttar Pradesh and Uttarakhand facilitated by IIT Roorkee.

LANDSLIDE :

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.

4.18 NDMA has approved 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" on 21.05.2018 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 inputs. Creation of Landslide Hazard Zonation (LHZ) maps of 1:10,000 Scale and landslide inventory is in progress through high resolution satellite data.

4.19 The total estimated cost of the project is ₹35.13 lakhs; out of which ₹25.52 lakh were released to RSAC-UP and IIT-Roorkee. The present status of the project is as under:



- Survey of India (SoI) provided the base data of 1:10,000 scale and 5m contour interval of 27.3km road stretch with 0.5km buffer along Tapovan to Vyasi route corridor.
- Thematic layers of road, settlements, drainage, active slides etc. from high resolution satellite data is completed.
- Team of RSAC-UP & GSI (Uttarakhand State Unit) visited the site in the month of December, 2018 and October, 2019. GSI along with researchers of IIT-Roorkee completed the site visit in February 2020 and June, 2020.
- Integration of GIS thematic layers and hard copy of maps were received from RSAC-UP.
- Final report under part project for geotechnical investigation of samples was received from IIT Roorkee.

Development and Evaluation of Low-Cost Landslide Monitoring Solutions

4.20 A pilot project on the “Development and Evaluation of Low-cost Landslide

Monitoring Solutions” in collaboration with IIT Mandi for the development of low cost sensors and other instruments for landslide monitoring through Micro Electro Mechanical Systems (MEMS) based sensors technology was approved by NDMA on 04.12.2017.



4.21 The total estimated cost of the project is ₹27.85 lakh; out of which ₹27.85 lakh was released to IIT Mandi. The present status of the project is as under:-

- Development of Prototypical low cost MEMS based landslide monitoring solutions (LMS) completed.

- (b) Performing lab scale simulation on the LMS completed.
- (c) Siteselectionwithsurficialdeployment of equipment was completed and sub-surface deployment of equipment at Gharpa hill site is completed.
- (d) Machine learning algorithms and calibrations-validation of sensors is completed.
- (e) Project is successfully completed and closed in December 2020.

4.22 **Landslide Risk Mitigation Scheme (LRMS)**

- NDMA has approved “Landslide Risk Mitigation Scheme (LRMS)” under Improving Disaster Risk Governance of SDMA’s / DDMA’s in July, 2019 to provide financial and technical support to landslide prone States for site specific landslide mitigation.
- LRMS is a pilot scheme to demonstrate benefits of landslide mitigation measures along with landslide monitoring, awareness generation, capacity building / training etc.
- MoU were signed with State Disaster Management Authorities (SDMA’s) of Sikkim, Mizoram, Nagaland and Uttarakhand for implementation of scheme.
- The total cost of the scheme is ₹43.92 crore; out of which ₹29.60 crore were released to Sikkim, Mizoram, Nagaland and Uttarakhand for execution of landslide mitigation work at site.

Training Programmes on “Landslide Mitigation and Detailed Project Report (DPR) Preparation”.

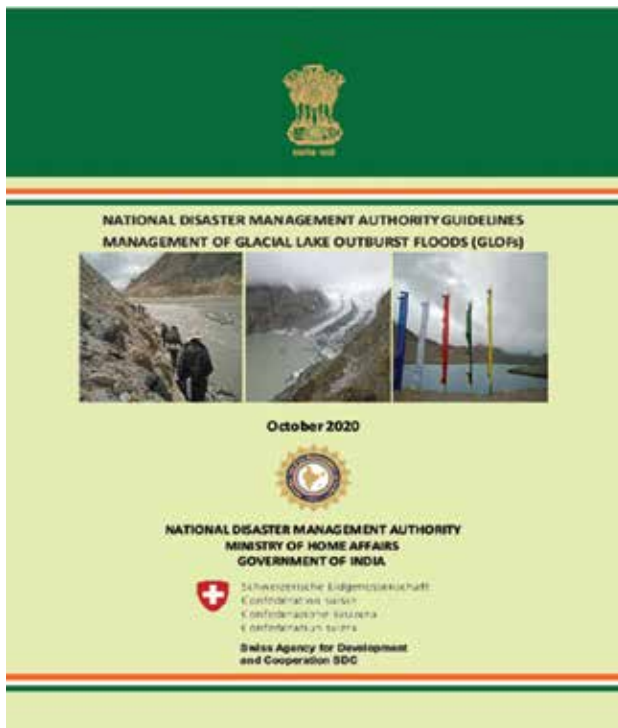
4.23 NDMA has approved the training programmes for two and five days on “Landslide Mitigation and Detailed Project Report (DPR) Preparation” in

collaboration with expert institution like Indian Institute of Technology (IIT’s), Indian Institute of Science (IISc), North Eastern Hill University (NEHU)-Shillong, Central Building Research Institute (CBRI), Central Road Research Institute (CRRI), National Institute of Technology (NIT)-Mizoram etc. to impart training to the State Governments officials since the State Governments facing difficulties in preparing the DPR on landslide mitigation and stabilization.

- 4.24 So far, six 2 days and six 5 days training programmes were conducted at CRRI-New Delhi, CBRI-Roorkee, National Institute of Disaster Management (NIDM)-New Delhi, IIT-Mandi (Himachal Pradesh); IISc, Bangalore (Karnataka) and NEHU-Shillong, NIT-Mizoram.
- 4.25 2 online training programmes of 5 half days was conducted by IIT Roorkee and NIT-Mizoram through online platform.

Preparation of Guidelines on Management of Glacial Hazards & Risks especially Glacial Lake Outburst Floods (GLOF)

- 4.26 NDMA in collaboration with Swiss Agency for Development and Cooperation (SDC), Embassy of Switzerland, India and NDMA Task Force experts prepared the Guidelines on the Management of Glacial Lake Outburst Floods along with summary and compendium on the same; which was released on 13.10.2020.
- 4.27 The Task Force has also prepared two main outcomes as:
 - i) Pilot project on Reducing Glacial Outburst and Flood Risk in Lhonak Lake & Shako-Cho Lake of North District of Sikkim
 - ii) Comprehensive Mitigation Projects

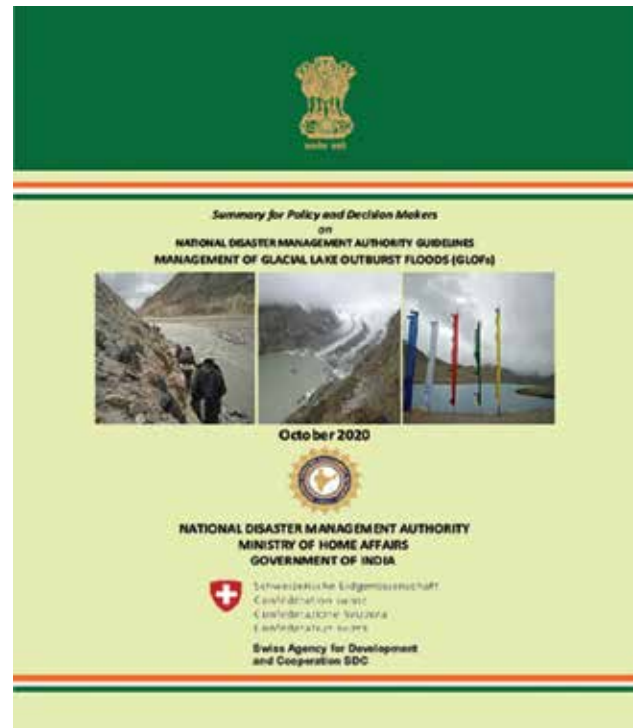


on Glacial Lake Outburst Flood (CMP-GLOF)

FLOOD

Preparation of Flood Hazard Atlas of Flood prone states

4.28 NDMA has taken the task for development of flood hazard atlas of flood prone States of India. The work is carried out by the National Remote sensing Centre (NRSC) Hyderabad with the support of CWC and the states. The Atlas was prepared in 5 vulnerable categories Very low, Low, Moderate, High and Very High. Flood hazard atlas of Assam and Orissa has been prepared and launched. Flood hazard atlas of Bihar and Andhra Pradesh is finalized and will be launched soon. For UP state, Data collection and sharing with NRSC is ongoing and expected to be completed soon. For West Bengal, ground validation has been shared with NRSC and the atlas will be finalized soon.



For less Flood-affected states aggregate map are prepared and shared with the states of Jammu and Kashmir, Gujarat, Kerala, Tamil Nadu and Karnataka for their comments and suggestions.



Chemical

Awareness programme for communities residing in nearby area of MAH/Hazardous Industries

4.29 A VC meeting was conducted on 17th July 2020, chaired by Member Secretary, NDMA in which representatives from concern ministries like Ministry of Labour & Employment; MoEF&CC; Ministry of Petroleum and Natural Gas; Ministry of Home Affairs (DM Division); DPIIT, Ministry of Commerce and Industry; Dept. of Chemical and Petrochemicals, Ministry of Chemicals and Fertilizers; Industry bodies like CII, FICCI, ASSOCHAM,

with state and districts having hazardous chemical units were organized. NDMA has identified 100 vulnerable districts and after co-ordination with states and districts, VC meeting were conducted during 24th -27th August 2020. District Collectors, Factory Inspectorate representatives, Disaster Management representatives and hazardous chemical industry representatives were present in these meeting where participants were briefed about the need to increase the awareness programme for local population residing in the nearby area of hazardous chemical units.



Indian Chemical Council, Chemicals and Petrochemicals Manufacturers' Association (CPMA); and representatives from UNICEF, UNIDO, GIZ participated and gave suggestion to way forward for enhancing the technical capabilities of industries and civil administration.

4.30 Further Video Conferencing meeting

Guidelines and Advisory

4.31 After the COVID-19 lockdown reopening accidents in chemical industries have taken place. NDMA issued guidelines for restarting the manufacturing units after lockdown on 9th May 2020. Guidelines enumerated various steps to be taken during the reopening of chemical units after lockdown so that accidents can be avoided.



Styrene gas leak at LG Polymers Pvt. Limited, Visakhapatnam

4.32 On 4 August 2020, a large amount of ammonium nitrate stored at the port of the city of Beirut, the capital of Lebanon, exploded, causing at least 200 deaths,

more than 6,500 injured and leaving an estimated 300,000 people homeless. NDMA has issued an advisory on 7th August 2020 for safety of explosives.



Ammonium Nitrate explosion at port of Beirut, Lebanon

Awareness on Disasters for general public

Chemical Disaster

4.33 NDMA has started a weekly programme on DD News to create awareness for general public about various disasters. In this regard, on 9th August 2020 a show about awareness on Chemical Disaster were telecasted. Three experts, namely

discussed about various factors which causes chemical accidents, steps to be taken for mitigating the risks and need for awareness generation among the local population. They gave an overview of the steps taken by different ministries and also emphasized steps for safety in chemical units.



Shri Sandeep Poundrik, Joint Secretary (Mitigation), NDMA; Shri KashinathJha, Joint Secretary (Petrochemicals), Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers and Dr. S. P. Garg, Ex- Executive Director, GAIL and Co-Chairman, FICCI Committee on Disaster Management participated in the discussion and gave an overview of chemical disaster. They

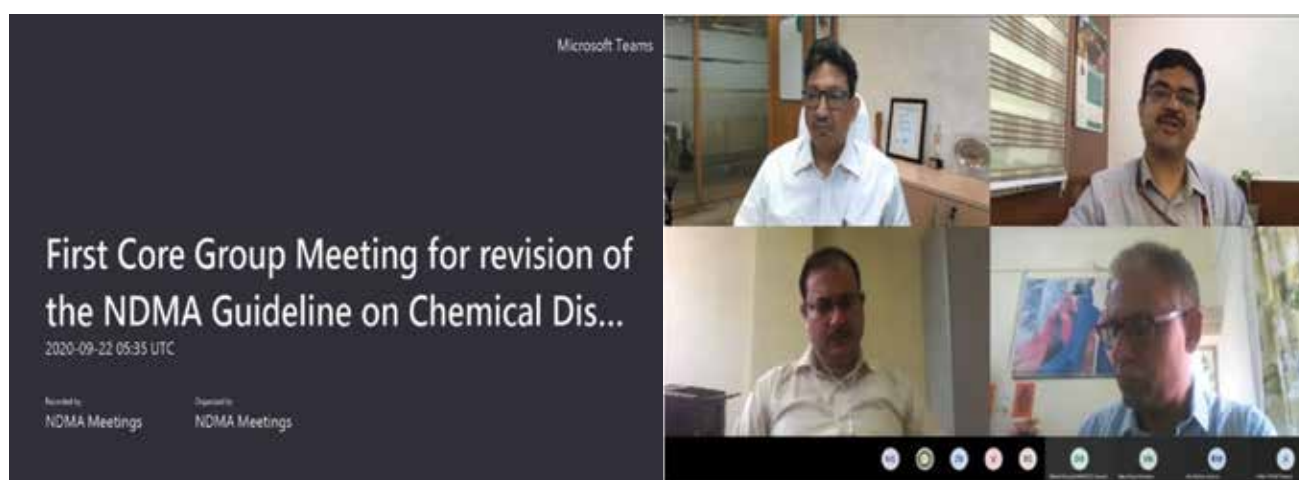
Revision of Guidelines on Chemical Disasters 2007

4.34 National Disaster Management Guidelines on Chemical Disasters was published in the year 2007. This Guideline speaks about all aspects of Disaster Management Cycle, Institutional framework with details of monitoring mechanism, Gaps in various aspects of management of chemical accidents. It provides the

institutional and regulatory framework, and details about capacity building, guidelines for installation and storages of hazardous chemicals, accident reporting, investigation and analysis checklists. It also gives action plan for implementation of plans prepared by central ministries, states and departments.

4.35 Formulation of this guidelines has given a roadmap and directions for Chemical Disaster Management initiatives in the

conducted by NDMA for Airport and Seaport Emergency Handlers. Total of 25 such training had been conducted so far. Further, SFC for conducting training on CBRN EM for entry level staff of additional 40 Airports / Sea port has been approved by competent authority. During one-day faculty meet on basic training for CBRN emergency which was held in Jan-2020, feedback from the meeting and from other stakeholders emerged that there is need to change the pattern of training



country. However, certain developments (The amendment in Motor Vehicle Act, Explosive Rules 2008, Ammonium Nitrate Rules 2012 etc) call for revision of the guideline. In view of this NDMA has started to revise this guideline. Core committee has been constituted for this and first meeting of core committee was conducted on 22nd September 2020.

CBRN Trainings for Airports and Seaports

4.36 Training programmes on CBRN emergency management had been

programmes, accordingly trainings were proposed in the following pattern:-

- 1 day CBRN EM training programme for Senior executives - 6 batches
- 5 days ToT - 9 Batches
- Basic training - 25 Batches

4.37 5 basic training on CBRN emergency management has been conducted. NDRF team also gave presentation, demonstration of equipments for emergency management, and subsequently conducted mock exercise.

Sr. No	Name of Item/Project/ Scheme	Total Project Cost (in Lakh)	Expenditure till Now 11.11.2020 (in Lakh)	Projection from 01.01.2021 to 31.03.2021 (in Lakh)
1	CBRN Trainings for Airports and Seaports	250	19.41	100

Geographic Information System (GIS)

Development of Cloud Based Application Information System

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

Developed COVID-19 Operational Dashboard:

4.39 NDMA has developed a GIS portal in managing pandemic situation Covid-19 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.



Figure -1 Representing the Covid 19 Dashboard

Developed HIS portal

4.40 Hazard management, assessment and prediction are developed for the prevention and mitigation of geological hazards. Data sets related to geological hazard prevention has been collected from various states, and also Integrated

the layers of Historical data, infrastructure and utilities for hazard specific geodatabases like Earthquake, Flood, Chemical, Landslide, Cyclone and Wind hazard, Forest fire Tsunami, Nuclear and Lightening the hazards vulnerability maps of Pan India.

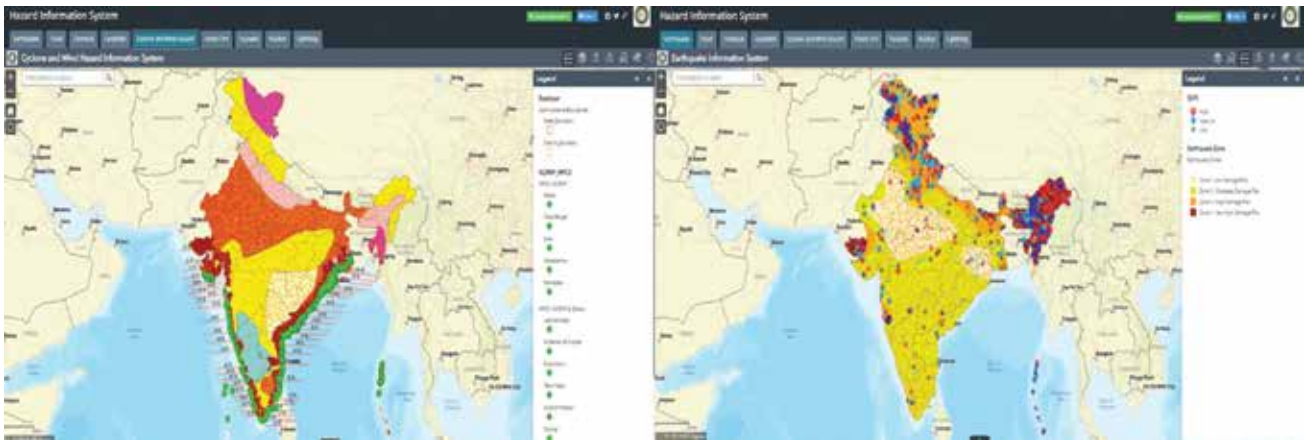


Figure2: These figures represent the Cyclone and wind hazard and Earthquake tabs (map of pan india) of the Hazard Information System

Developed Oxygen Operational Dashboard

4.41 An oxygen dashboard has been developed by the NDMA in order to monitor the availability of oxygen cylinders in various hospitals in different states of India. The hospital users are provided with the login id and passwords in order to daily update the availability status of numbers

of oxygen cylinders in the hospitals. Dashboard contains the database of all the hospitals with their addresses and geo-location. The availability of the oxygen cylinder is represented in the form of their storage capacity in Kiloliters and is categorized in Liquid oxygen tank, D type oxygen cylinders and B Type oxygen cylinders.



Figure 3: Representing the oxygen dashboard

Developed National Migration Information System (NMIS)

4.42 Integration of various GIS layers in GIS portals from available geo-databases

Hazards Information

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

Instruments and Infrastructure

Hospitals Location (Up to PHC and Private Hospitals)

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

Inventory

- Historical Landslide Point
- GLOC Locations
- Flood Events
- Earthquake epicenters
- MAH Units
- Forest Fire points
- NDRF Location

- Cyclone Shelter
- States/ District HQ
- Fire Station
- Town/Village level Population data
- Administrative boundaries (States/ Districts/ Sub District/Village)
- Heritage Buildings, and other utilities.

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

- States/ District HQ
- Fire Station
- Town/Village level Population data
- Administrative boundaries (States/ Districts/ Sub District/Village)
- Heritage Buildings
- Other Utilities

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

4.43 Organize training on “application of GIS in Disaster risk Reduction” with the collaboration of NESAC

4.44 NDMA has been Sponsoring to organize the Training programs to create awareness among all the SDMA's and stakeholders/ disaster managers on the Application of Geographic Information System in Disaster risk reduction, which is two days online training conducted by the North Eastern Space Applications Centre, Umiam. Training is being conducted through online medium via Video conferencing, which involves a number of participants from various states so that they are aware about the GIS technology, and they are able to use this technology in making decisions at the time of occurrence of geological disaster or pandemic. Total 06 training programs has been conducted during 2020-2021 and about 250 professionals have been



Figure4: Representing the NESAC presenters conducting the training program

trained from all SDMAs, Ministries and other stakeholders.

- 4.45 Organize training on “application of GIS in Disaster risk Reduction” with collaboration of IIRS
- 4.46 NDMA has been Sponsoring to organize the Training programs to create awareness

among all the SDMA's and stakeholders/ disaster managers on the Application of Geographic Information System in Disaster risk reduction, which is five days, online training conducted by the Indian Institute of Remote Sensing, Dehradun. Training is being conducted through online medium via Video conferencing which involves a

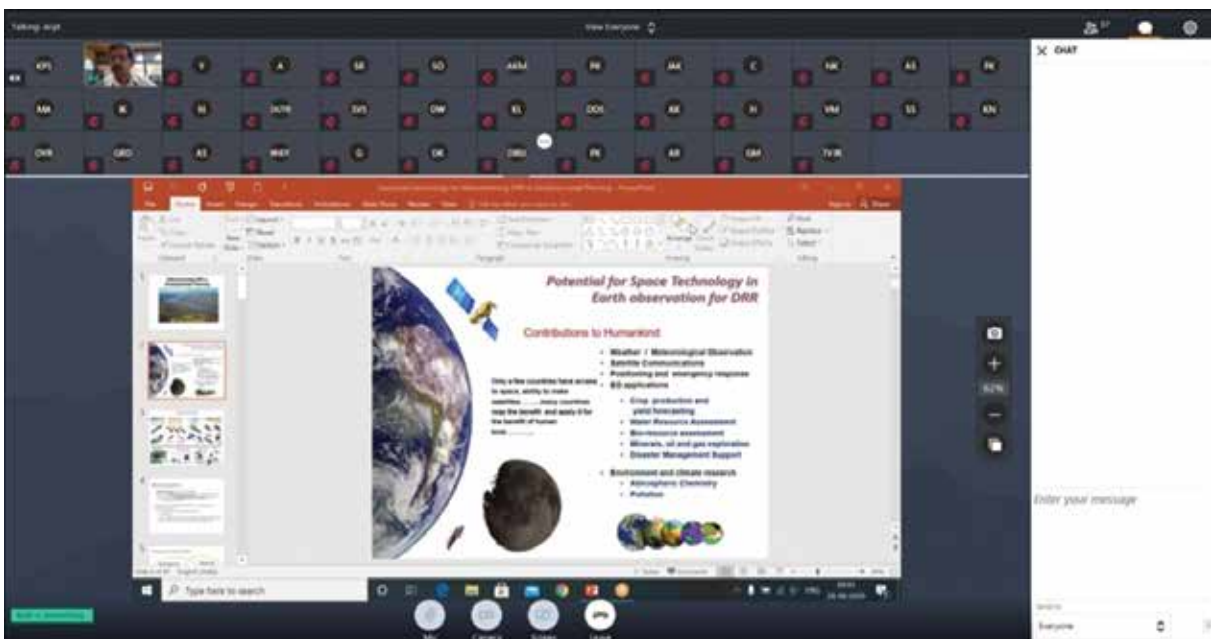


Figure 5: Representing the IIRS Dehradun presenters conducting the training program

number of participants of various states so that they can be aware about the GIS technology and they are able to use this technology in making decisions at the time of occurrence of geological disaster or pandemic. Total 03 training programme has been conducted during 2020-2021 and about 350 professionals have been trained from all SDMAs, Ministries and other stakeholders.

Nuclear and Radiological

District Management Plan (DDMP) for 7 districts having Nuclear Disaster Power Plant document was reviewed.

4.47 NDMA has given DDMPs of 7 districts having Nuclear Power Plant to Department of Atomic Energy (DAE) for review. DAE reviewed it and gave their comments to make it in line with Document Preparation profile (DPP). Comments received from DAE are to be incorporated in respective DDMPs.

4.48 NDMA has also reviewed the comments received from DAE. Review aspects given by DAE are applicable for all the district plans. Certain additional aspects needs to be addressed:

- Availability of Iodine tablets, location and numbers in Primary Health Centers, logically as time for protective action Implementation will be high, if not kept in villages.
- Data on availability shall be in document.
- Surveillance and maintenance aspects shall be fixed and mentioned in document.
- Procurement responsibility should be fixed and mentioned.

- Certain minimum Radiological measurements devices, protective equipment, dosimeters and other resources required needs to be maintained in District control center. It cannot be picked up from NPP center as otherwise time will be wasted in arranging these resources.
- Responsibility on these thing needs to be mentioned.
- Surveillance and maintenance aspects needs to be mentioned
- Training on use or these specific resources needs to be chalked out in document.
- Identification of certain medical hospitals for medical care needs to be identified as life saving actions take predominance.

Preparation of SOP for Nuclear/Radiological Emergencies -

4.49 The use of sources of radiation/ radioactive materials in different fields of practice other than in reactors is growing for a variety of applications in the fields of agriculture, medical diagnosis, therapy, non-destructive testing in industry and various research purposes. Handling of such sources/materials and its movement in public domain need to be carried out in a safe and controlled manner adhering to the provisions in the Atomic Energy Act (1962) and the rules framed therein as well as international guidelines. In view of this, SOP's for Nuclear/Radiological was needed to be prepared so that in case of any radiation event all stakeholders should be aware about their roles and responsibilities.

Mobile Radiation Detection System (MRDS) training for Police departments :-

- 4.50 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 police personnel in the cities under this project.
- 4.51 The project is funded by NDMA with support for 5 years (AMC). Warranty



period will be over in October 2021 and afterwards Annual Maintenance Contract (AMC) for next 3 years will start.

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

- 4.52 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. CBRN training program 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.

- 4.53 So far, 28 batches of basic training in 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. In Second phase, completed CBRN training for seven airports.



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

- 4.54 NPCIL has devised new methodology in three States (Table-top, integrated command, control & response (ICCR) and Full-fledged exercise involving Public) for conducting OSEEs for NPPs.
- 4.55 NDMA has requested DAE for Submission of proper document for conducting OSEEs as per new methodology.
- 4.56 AERB informed, Regulatory consent for this new methodology that was evolved after due consultation with stake holders was given as a part of approval of template for Off-site emergency planning for NPP. Further any clarity in the Off-site

Emergency, if required, can be taken up in the Joint consultation meeting of all stake holders that AERB is planning

Vetting of Atomic Energy Regulatory Board Safety Code (National Regulator) on Management of Nuclear and Radiological Emergencies:

4.57 The following are comments:

1. The draft has been prepared in a simple and concise way.
2. The draft covers all aspects.
3. A limiting value for emergency worker needs to be spelt out as an upper bound, as guidance value suggested for various condition differ based on circumstances. (Individual health risk).
4. Post event management follow up of emergency workers health surveillance frequency needs to be clearly spelt out for district officials.
5. Training of district officials frequency needs to be clearly defined as they are going to be the fulcrum of the Integrated Command and control system and they are going to be the responders now in present context.
6. Exercises in public domain by district authorities need to be spelt out in broader sense like covering all the villages for all protective actions in 10 years.

Psycho-Social

Taking counselling to the people - a unique 'reverse' call helpline

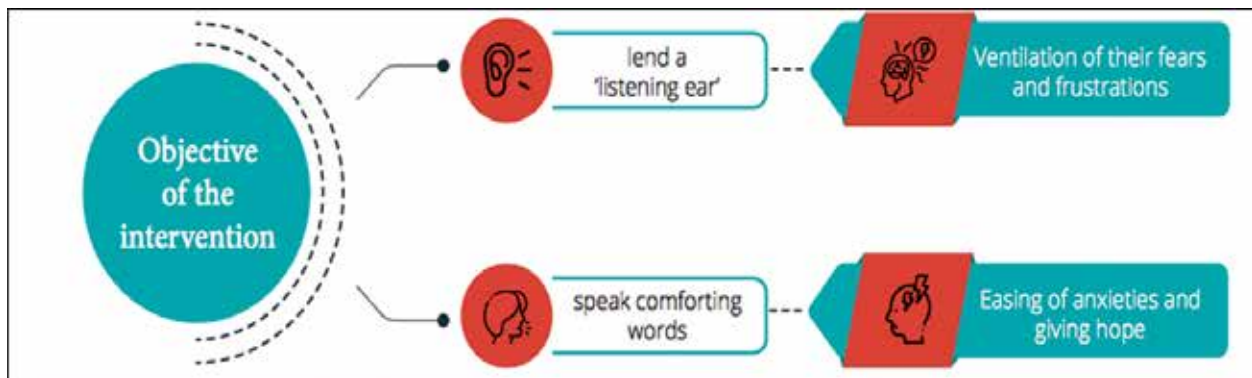
4.58 To reach counselling to COVID-19 patients who are unlikely to seek or obtain psychiatric help, NDMA initiated

a helpline for people testing positive for COVID-19, whereby psychosocial support is provided to them in the form of remote counselling. 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.

4.59 NDMA enlisted volunteer counsellors and engaged their services for tele-counselling 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-counselling/'compassionate talking' by qualified and experienced counsellors. Such compassionate talking or counselling entails specific components of PFA, such as listening non-judgementally, providing reassurance and general information, and encouraging self-help and other support strategies.

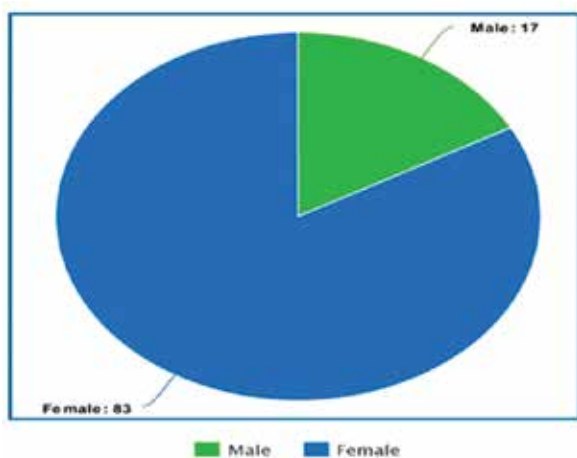
4.60 Being conducted remotely, such counselling does not entail any psychological assessment or treatment. It is not intended to fulfil the objectives of conventional psycho-social counselling, such as providing practical assistance for meeting any immediate needs, helping establish social supports, or providing linkages with referral services.

4.61 This intervention is 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 counsellors proactively rang up the patients to check on their psycho-social



state and provide them some relief in the form of counselling. 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 counselling, the necessary service is arranged by NDMA.

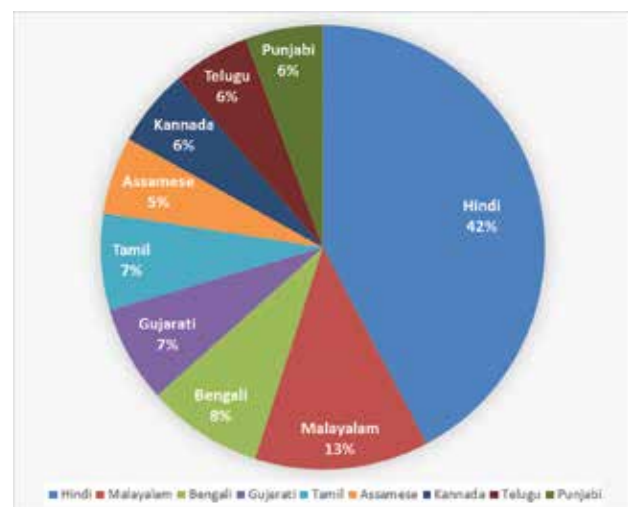
4.62 The volunteers for this counselling service have been selected after a thorough screening process, which included verification of their qualifications and experience. These volunteers are mainly psychiatrists, clinical psychologists, counsellors and psychiatric social workers. The counselling is conducted remotely from different locations across the country.



Gender distribution of counsellors

4.63 The counsellors were provided necessary guidance on the operational procedures, ethics and the 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.

4.64 Apart from English and Hindi, a variety of languages is spoken by the volunteer counsellors, which enables the service to reach a wider set of beneficiaries.



Major languages spoken by the counsellors

Training and supervision of counsellors

4.65 NDMA has collaborated with 'Rahbar', Tata Institute of Social Sciences

(TISS), Mumbai, to provide training and supervision for counsellors, both for the counselling work itself and for documentation of the initiative.

4.66 Four training sessions were conducted by TISS for volunteer counsellors 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 counsellors, and the emerging psychosocial challenges of people diagnosed with COVID-19, a training plan was designed and delivered.

4.67 The supervision sessions conducted by TISS were aimed at motivating the counsellors, enhancing their professional resilience, building their skills, and promoting reflective practice among them. Supervision sessions were conducted in a group format, which helped counsellors 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 counsellors.

Mobile app for India-wide counselling

4.68 The counselling is being conducted through a specially designed mobile application which is installed in the counsellors' mobile phones. This mobile application ensures that neither the patient's number is visible to the counsellor nor the counsellor's number to the patient. NDMA collects the data of people testing positive for COVID-19, and feeds this information into the application installed in the counsellor's phone. When the counsellor calls up a COVID-19-

positive person from the application, only the basic information required for counselling of the person is revealed. This ensures confidentiality of the personal details of both patient and counsellor.

The image shows a mobile application interface with a top navigation bar containing icons for play, people, save, search, and power. Below the navigation bar, there are several form fields:

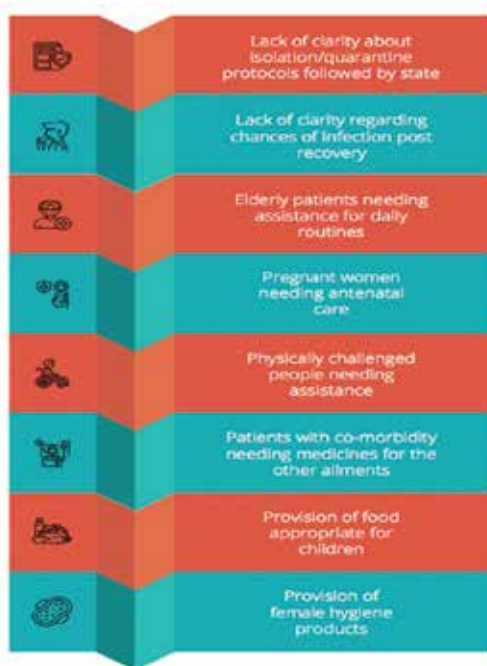
- Disposition: Answered
- Sub Disposition: (dropdown menu)
- Phone: XXXXXXXXXXXX
- Name: SUDHA JK
- Age: 54
- Gender: F
- State: Kerala
- District: THIRUVANANTHAPURAM

Psychosocial issues faced by COVID-19 patients

4.69 Counsellors offer psychosocial support through COVID-19 education, bereavement counselling and by building a sense of optimism in patients. The various issues that came up during the counselling 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 family
- Lack of contact with family
- Grief due to loss of loved ones
- Worry about financial losses and debts



Intervention for Delhi Police personnel

4.70 NDMA started a helpline initiative in mid-April to offer basic psychosocial support to people diagnosed with COVID-19 through



Felicitation programme for NDMA volunteers by Delhi Police

tele-counselling carried out by qualified and experienced counsellors. NDMA also collaborated with Delhi Police to provide psychosocial help to their personnel who were infected with COVID-19 as a result of working in the community on the frontlines.

4.71 Conversations with the police personnel revealed several particular concerns – apart from the standard logistical and social problems that are the lot of police – which were impacting their mental health. They feared infecting their families; they had health concerns; they were distressed due to their financial burdens and upset at the social stigma they faced. Some of them also said the residents of their housing societies had objected to their staying in the vicinity once they contracted the virus, making the police personnel feel alienated and hurt. It was observed that out of the concern to protect their families, the personnel did not confide in them to share their feelings. At times, the hyper-masculine culture of policing also played a role in deterring them from allowing themselves to appear vulnerable in front of anyone, including the counsellors.

4.72 Some methods to improve mental health of the police officers, as suggested by counsellors, include programmes that encourage them to positively cope with the



situation through activities such as yoga and meditation. Talking to counsellors about their mental health concerns and following the interventions recommended by them have also been beneficial. As police officers continue to deal with the stress of potentially contracting the virus, it will be important for department heads to help ease their stress as much as possible and for officers to identify positive coping strategies for themselves.

- 4.73 Following the continued success of NDMA's initiative in counselling Delhi Police personnel diagnosed with COVID-19, the authorities at Delhi Police felicitated the individuals who were involved in the exercise from the NDMA side. The felicitation programme was held on 18 August 2020.

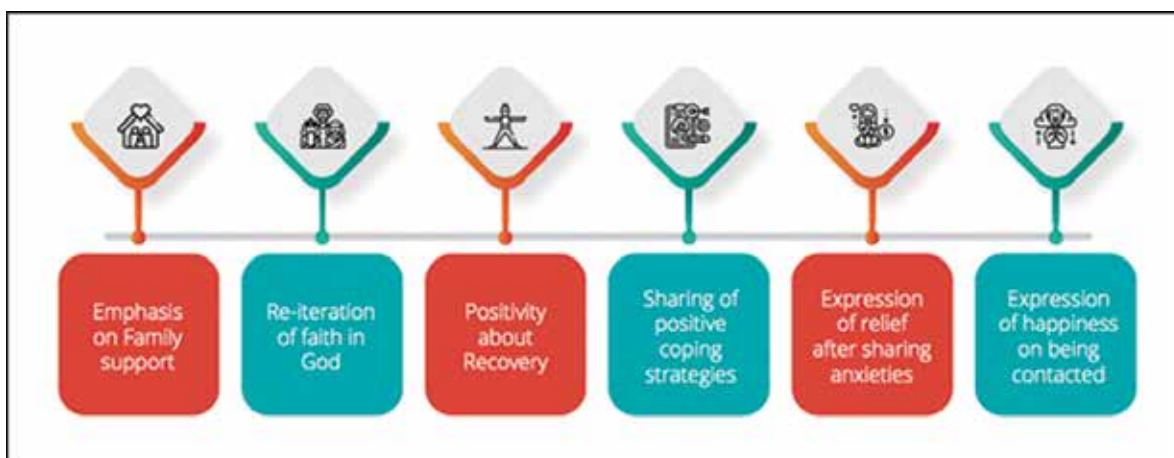
IMPACTS/BENEFITS/OUTCOMES

Over 1.5 lakh COVID-19 patients called by counsellors

- 4.74 At the end of January 2020, the counsellors volunteering with NDMA had reached out to over 1.5 lakh COVID-19 patients and had counselled more than 54,000 individuals diagnosed with the disease. The NDMA volunteer counsellors

intervened by providing them a space to express their feelings and be heard. The counsellors 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. Anger management was also used as an intervention where individuals felt very frustrated by their condition.

- 4.75 Additionally, counsellors 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.



4.76 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.

4.77 Most people were appreciative of the initiative and reported feeling understood and cared for. Being in a difficult situation, they felt acknowledged and supported.

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!'

Research and documentation

4.78 NDMA and TISS decided to produce a joint research report to document the processes and insights generated from the Psychosocial Care Helpline as outlined by counsellors. A draft report has been submitted to NDMA and is in the process of finalisation. Training modules are also in the process of being developed by TISS. The topics covered would be

- Psychological first aid during a pandemic
- Supporting clients in high risk and distress
- Mitigating social stigma
- Ensuring ethical practice and self-care for counsellors



Doordarshan News show on the initiative

4.79 On 25 October 2020, Doordarshan (DD) News aired a show on the public mental health initiative started by NDMA to support people diagnosed with COVID-19. The panelists included Shri Sandeep Poundrik (Additional Secretary, Mitigation, NDMA), Dr Chetna Duggal (Associate Professor, TISS), and Shri Jayakumar C. (Associate Professor,



Screenshots of the DD News show and the panelists

National Institute of Mental Health and Neuro Sciences). Various aspects of the psychosocial impact of the pandemic were discussed, and the work done by the helpline initiative to reduce pandemic-related stress among the public was showcased. The role of training of mental health professionals to provide counselling support in the aftermath of disasters was also highlighted.

Conclusion

4.80 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.

Medical Preparedness & Biological Disaster

Preparation of Modules on Hospital Safety as per NDMA Guidelines

4.81 With regards to the SFC revision of scenarios development of three states of

UP, Bihar and Uttarakhand (Component of Medical Preparedness and Development of Modules on Hospital Safety), preparation of 4 set of training modules was approved by the competent authority.

4.82 The four modules on Hospital safety training are as under: -

- (i) Level of training: Basic Awareness (Credit hours=8 [One Day])
Course Name: Hospital Disaster Management (HDM) BASIC
Target Group: Security , Janitors, Maintenance staff, other cadres associated in non clinical work.
- (ii) Level of training: Mid Level Awareness (Credit hours=24 [Three Days])
Course Name: Hospital Disaster Management (HDM) INTERMEDIATE
Target Group: Nurses, Junior Doctors, Pharmacists, Technicians (of Radiology, Pathology Laboratory and other specialties/super specialties, other administrative supportive and Supervisory Staff of security and other cadres.
- (iii) Level of training: Advance Level Awareness (Credit hours=48 [Six Days])

Course Name: Hospital Disaster Management (HDM) INTERMEDIATE

Target Group: Senior Doctors, Hospital Administrators, Head of Departments/Divisions, Medical superintendant.

- (iv) Level of training: HDM Assessor (Credit hours=24 [Three Days])

Course Name: Hospital Disaster Management (HDM) ASSESOR

Target Group: Assessors, accreditators and validators associated HVRA Exercise, Fire safety, Structural and Non Structural safety, NABH, JCI Accreditation, ISO Certification, BIS and NBC Code, Complex functionality and Safety of Hospitals, Hospital drills.

4.83 The lead partner for the project is Centre for Management of Health Services, Indian Institute of Management, Ahmedabad with a Budget - Rs. 35, 75, 400.00 .

4.84 Despite Covid-19 Pandemic restrictions the Project under the supervision of NDMA is progressing well. Till date IIM (A) has submitted the following:

- (i) Interim Report 3 (which also incorporates the Progress update)
- (ii) Minutes of Meeting with Expert Group (consultative meeting)
- (iii) Drafts of the Forward and Preface
- (iv) 1st Draft of the Manual

Covid-19 Specific Interventions

Development of Cloud Based Application Information System Project

4.85 Medical preparedness and Biological Disasters section of mitigation Branch

of NDMA assisted the Geographic Information System (GIS) section in development of the following Cloud Based Application Information System Project with pan India application:-

- (i) Contact Tracing for Breaking the Transmission Chain
- (ii) Development of Decision Support System (DSS) on GIS Platform
- (iii) National Migrants Information System
- (iv) Covid-19 Savdhan
- (v) Psycho-Social Support help line for Covid 19 patients
- (vi) Mobility Monitoring in 30 Major Cities
- (vii) Use of Location Base Services for quarantine surveillance

Issuance of Advisories on Covid-19 Pandemic.

4.86 On 31st December 2019, the People's Republic of China first reported to the WHO Country Office that pneumonia of unknown cause had been detected in Wuhan and thereafter a month later by 30th January 2020, 7818 total confirmed cases were reported worldwide of which only 82 cases from 18 other countries. This severity of the disease compelled the WHO to declare the novel outbreak (2019-nCoV) a Public Health Emergency of International Concern (PHEIC) which was subsequently renamed as COVID-19 on 11th February 2020. Meanwhile on 30th January 2020, Kerala reported its first case of COVID-19, which rose to three cases by 3rd February 2020 - all being students returning from Wuhan.

4.87 Appreciating the gravity of the situation, the NDMA on 4th February 2020 issued an advisory to all States/UTs by drawing their attention to the tenets of the National Disaster Management Guidelines on the Management of Biological Disasters and Chapter 7.15 of National Disaster Management Plan 2019 for preparedness activities for the management of COVID-19. This entailed need based targeted capacity building of health care workers and other stakeholders, enhance isolation facilities in all hospitals, dissemination of COVID-19 do's and don'ts in all vernacular languages via all media platforms including its non-pharmaceutical interventions. A month later with the upward trajectory of COVID-19 cases, the NDMA's advisory of 5th March 2020 drew attention of all States/UTs to the 'Containment Plan' brought out by MoHFW with particular reference to cluster containment. It again exhorted for various aspects of COVID-19 capacity building measures such as Sensitization training of all its first responders, Tabletop exercises on isolation, quarantine, infection control, surge capacity of hospitals including networking, Inter-sectoral coordination and Risk Communication for all sections of the society. In addition, psychosocial care helpline, and measures to ensure business continuity and essential services were advocated.

4.88 Protective measures against COVID-19 commenced with thermal screening of passengers arriving from China from 21st January 2020 carried out at seven airports initially, and subsequently, it was expanded to 20 airports towards the end of the month. During February 2020, the screening was extended to all passengers

from Thailand, Singapore, Hong Kong, Japan and South Korea, and thereafter, towards the end of the month, Nepal, Vietnam, Indonesia and Malaysia were added to the list.

With the backdrop that all passengers coming from specified countries since 1st January 2020 had not undergone proper entry screening, an advisory was issued on 17th March 2020 to all States/UTs to put in place a mechanism to conduct medical examination of these travellers.

4.89 The World Health Organisation declared on 11th March 2020 the COVID-19 a pandemic since its morbidity and mortality in numerous continents was galloping out of control. Likewise at the national level, deeply concerned both by the alarming levels of spread and severity of COVID-19, it was felt necessary to take effective measures to prevent its spread across the country and for mitigation of the threatening disaster situation for which Social Distancing was advocated as its solution. Accordingly, the National Disaster Management Authority in exercise of the powers vested under Section 6 (2)(i) of the Disaster Management Act, 2005 directed all Ministries/Departments of Government.

Basic Training on CBRN Emergency Management for Airport/Seaports Emergency Handlers

4.90 In the ongoing "Basic Training on CBRN Emergency Management for Airport/Seaports Emergency Handlers", conducted by NDMA following topics pertaining to Medical Management of CBRN emergencies are covered: -

- a) Basics of Biological Emergencies
 - Types of Biological Agents

- Emergencies vs Bioterrorism
- Epidemic outbreak and Pandemic
- Public Health Measures to Prevent Biological Events
- Biological Warfare

b) Biological Emergency Management

- Types of Biological Emergencies and their response modalities.
- Public Health Emergencies of International Concern
- International Health Regulations
- Disease Surveillance Mechanism in Country

Coalition for Disaster Resilient Infrastructure (CDRI)

About CDRI

On 23 September 2019 at the UN Climate Action Summit, Hon. Prime Minister Shri Narendra Modi launched the Coalition for Disaster

Resilient Infrastructure (CDRI) as a multi-stakeholder partnership of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector and knowledge institutions.

CDRI aims to address challenges and provide inputs for building resilience into infrastructure systems, particularly in the context of increasing disaster risks in the face of climate change. The coalition is working towards creating awareness about the benefits of disaster resilient infrastructure (DRI) while serving as a platform for knowledge generation and exchange on DRI. Along with its members, it is also working towards enhancing nationally and regionally appropriate codes, specifications and guidelines for planning, design, operation and maintenance of the infrastructure systems with a focus on the most vulnerable regions, and addressing the needs of the most susceptible to the negative impact of disasters and climate change events.



CDRI's 8 Thematic Areas of Work - Governance & Policy, Risk Identification & Estimation, Standards & Certifications, Capacity Development, Innovations & Emerging Technology, Recovery & Reconstruction, Finance, and Community-based approaches.

CDRI's Members: Since its inception to date, CDRI has expanded with 24 countries and 7 organizations as its members; and the number is steadily growing. The CDRI Secretariat is based in New Delhi, India.

CDRI | MEMBER COUNTRIES

	AFGHANISTAN		FRANCE		MONGOLIA
	AUSTRALIA		GERMANY		NEPAL
	ARGENTINA		INDIA		NETHERLANDS
	BHUTAN		ITALY		PERU
	BRAZIL		JAMAICA		SRI LANKA
	CANADA		JAPAN		TURKEY
	CHILE		MALDIVES		UNITED KINGDOM
	FIJI		MAURITIUS		UNITED STATES OF AMERICA

CDRI | MEMBER ORGANIZATIONS

	ASIAN DEVELOPMENT BANK (ADB)
	WORLD BANK GROUP
	UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)
	UNITED NATIONS OFFICE FOR DISASTER RISK REDUCTION (UNDRR)
	THE PRIVATE SECTOR ALLIANCE FOR DISASTER RESILIENT SOCIETIES
	COALITION FOR CLIMATE RESILIENT INVESTMENT
	EUROPEAN UNION

CDRI Programmes

The Coalition for Disaster Resilient Infrastructure (CDRI) is carrying out several programmes to inform and encourage CDRI Members Countries on the ways to strengthen and build disaster resilient infrastructure.

Power Sector Resilience Programme - Study on Power Sector Resilience

With the disruption and destruction caused by Cyclone Fani (2019) in Odisha as the backdrop,



CDRI is carrying out a study on enhancing the resilience of the power sector in the state of

Odisha, which will contribute to strengthening the resilience of power infrastructure in other geographies similar to Odisha. For the power sector stakeholders, the study will raise awareness, enhance the understanding about managing risks, and augment their capacity to take adaptive actions to mitigate these risks and cope with the impacts of future disasters.

Transport Sector Resilience Programme - Global Study on Airports Disaster Resilience

Climate change and natural hazards disrupt airport operations and services leading to direct losses as well as associated economic impacts thereby affecting lives and livelihoods of millions. Given this context, CDRI is conducting a study on critically understanding the disaster resilience of airports around the world. Phase I of the study has been launched. It will map perceptions of airport managers around disaster risk and resilience. Phase II will be a focused study of selected airports, examining both existing disaster resilience and investor outlook towards financing resilience in airport infrastructure.



Flagship Report on “Disaster and Climate Resilient Infrastructure”

CDRI’s biennial Flagship Report on ‘Disasters and Climate Resilient Infrastructure’ is based on the state of climate and disaster resilient infrastructure, with a specific focus on nature-based solutions.

The priority sectors being focused in the report are: power and energy, telecommunications, transport etc. Five thematic Pillars of the report are: (a) A Global Risk and Resilience Assessment of infrastructure systems; (b) Disaster and Climate Infrastructure Resilience Index; (c) Thematic Section on Nature Based Solutions; (d) Progress review of global goals and targets for resilient infrastructure; and (e) Financing Resilient Infrastructure.



Financing Disaster and Climate Resilient Infrastructure

CDRI intends to provide technical support to member countries in developing comprehensive Disaster Risk Financing (DRF) strategies to protect the public finances from the fiscal shocks associated with disasters and build the financial resilience of government(s). In lieu of this, CDRI will conduct a study to include a policy review and statistical analysis followed by a fiscal risk modelling exercise to examine the current and future fiscal risks posed by disasters. The study will also contribute to the identification and

implementation of suitable DRF solutions for member countries to minimize the fiscal burden of funding post-disaster losses.



Fellowship Programme

The yearly CDRI Fellowship Programme taps the best minds from CDRI member countries to come up with ideas, research, innovate, form and revolutionize the future of disaster and climate resilient infrastructure. Open to practitioners, students, researchers and community workers, the programme is meant for concentrating on solving a real-world problem related to Disaster Resilient Infrastructure (DRI). CDRI Fellowship Programme 2021 received 143 applications from 12 countries, out of which 21 were awarded the Fellowship. This constituted 60% males and 40% females.



Youth for Resilient Infrastructure

CDRI launched the ‘Youth for Resilient Infrastructure’ International Essay Competition on 15 February 2021. The competition was launched by Dr P.K. Mishra, Principal Secretary

to Prime Minister, India and Rt Hon Alok Sharma, President COP 26 at the Prime Minister Office, India. Submissions were invited on the following themes: Nature-based solutions for disaster resilient infrastructure; Innovation and emerging technologies in disaster resilient infrastructure; Indigenous practices in disaster resilient infrastructure. At the close of the competition, a total of 143 applications were received from 34 countries. After three rounds of evaluation, 5 winners and 5 runners-up were announced, and 10 were awarded certificates.



CDRI Knowledge Management

COVID-19 Case Studies

Along with documenting the workings of some of the state governments in COVID-19 prevention, CDRI, along with NDMA, documented and created an awareness of the 'Psychosocial Support for People Testing Positive for COVID-19' - a unique helpline provided by the NDMA for assisting people who had tested COVID 19 positive. NDMA enlisted volunteer counsellors and engaged them to counsel the affected patients on telephone, through Psychosocial First Aid (PFA) such as: listening non-judgmentally; giving re-assurance and general information; and encouraging self-help and other support strategies.

A poster for the 'International Essay Writing Competition' under the theme 'YOUTH FOR RESILIENT INFRASTRUCTURE'. It lists three essay themes: Nature-based Solutions for Disaster Resilient Infrastructure, Innovation and Emerging Technologies in Disaster Resilient Infrastructure, and Indigenous Practices in Disaster Resilient Infrastructure. It also specifies a word limit of 1,000, English language, eligibility for current full-time students, and a submission deadline of 1 March 2021. Prizes for top winners are listed: Top 5 winners receive cash prizes worth US\$500, certificates, and publication opportunities; Top 10 winners receive certificates and publication opportunities; Top 20 winners receive certificates. Contact information for details and queries is provided at the bottom.

CDRI DRI Connect

Marketplace

To strengthen the market for disaster and climate resilient infrastructure systems, during ICDRI 2021, CDRI showcased the Resilient Infrastructure 'Marketplace' as a virtual networking platform to match demand from





CDRI Member Countries requiring technical services and assistance with companies, universities and organizations that could provide services to meet this demand. Moving forward, CDRI's 'Marketplace' will be an online space dedicated to solution providers to showcase their various products and services while enabling disaster and climate resilient infrastructure information seekers and decision makers to engage with state-of-the-art products, solutions and service providers.

CDRI Events

Webinars

CDRI hosted two webinars in the month of November 2020 and December 2020 as precursors to the International Conference on Disaster Resilient Infrastructure (ICDRI) 2021. These webinars brought together high-level participants to explore:

1. Opportunities to reduce social vulnerability by strengthening the equity of natural resource usage by using Nature Based solutions
2. Opportunities to 'recover better together' in the wake of COVID-19, with a focus



on Healthcare Infrastructure and Supply Chains

International Conference on Disaster Resilient Infrastructure (ICDRI 2021)

ICDRI is the annual international conference of the Coalition for Disaster Resilient Infrastructure (CDRI) in partnership with member countries, organizations and institutions to strengthen the global discourse on disaster and climate resilient infrastructure. A virtual event this year, ICDRI was held from 17 - 19 March 2021. The conference brought together stakeholders from partner countries representing national disaster risk management agencies, key infrastructure sectors, multilateral development banks, UN agencies, academia and research institutions, the private sector, and policy think tanks.

The ICDRI 2021 saw 4 Prime Ministers address the conference - Shri Narendra Modi, Hon. Prime Minister of India; The Rt Hon Boris Johnson MP, Hon. Prime Minister of United Kingdom; Mr. Mario Draghi OMRI, Hon. Prime Minister of Italy; and Mr. Josaia Voreqe Bainimarama, Hon. Prime Minister of Fiji.

Other prominent speakers at the conference who shared their views were: Ms. Nirmala



Sitharaman, Minister of Finance and Corporate Affairs of India; Mr. Hardeep Singh Puri, Minister of Civil Aviation of India; Mr. Ravi Shankar Prasad, Minister of Law and Justice of India; Ms Mami Mizutori, UNDRR Chief; Mr Achim Steiner, UNDP Administrator; and Dr John Murton, COP 26 Envoy



development, governance, knowledge sharing and communications, and global collaborations for developing disaster resilient infrastructure. The speakers stressed that the private finance industry - in partnership with public institutions - can play a critical role in mobilizing private

ICDRI 2021 saw a total of 11 sessions on: Health Infrastructure Resilience, Global Risk Assessments, Situating Resilient Infrastructure in the context of International Commitments, Innovation and Emerging Technologies, Exploring Digital Infrastructure Resilience, Urban Resilience, Finance for Resilient Infrastructure, Recovery and Reconstruction, Governance and Policy, and laid out critical challenges and significant opportunities for adopting resilient pathways for infrastructure development in Small Island Developing States (SIDS) - Pacific Island Countries & Caribbean Region.

capital to advance investments in resilient infrastructure.

Masterclass

Before, during and after ICDRI, CDRI along with its partners held a four-part Masterclass on Urban Resilience. It was as an interactive platform for participants to learn critical aspects of policy, systems approaches and integrated planning approaches. The 4 sessions were:

Building Sustainable Cities that are Disaster & Climate Resilient; Urban Resilience; Using Making Cities Resilient 2030 (MCR2030)



The conference highlighted the need for creating solutions, and engagements in capacity

tools for Disaster Resilient Infrastructure; and Accelerating Urban Water Resilience in Cities.

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.

Scheme for "Training of Community Volunteers in Disaster Response in selected 30 most flood prone districts of 25 States in India (AapdaMitra)"

5.3 NDMA implemented a scheme for Training of Community Volunteers since May, 2016 which was focused on training of 6000 community volunteers (200 volunteers per district) in disaster response particularly on flood response in selected 30 most flood prone districts of 25 States/ UTs of India. The scheme was operational upto 31.03.2021.

5.4 States/UTs covered under the scheme were Assam, Andhra Pradesh, Arunachal Pradesh, Bihar, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Uttarakhand and West Bengal.

5.5 The scheme aimed to provide the

community volunteers skills required to respond to their community's immediate needs in the aftermath of a disaster thereby enabling them to undertake basic relief and rescue tasks during emergency situations such as floods, flash-floods and urban flooding.

5.6 5513 volunteers were trained. The trained volunteers have been engaged under the guidance of District Administration / State Govt. in search and rescue activities in 2018, 2019 and 2020. The activities undertaken during FY 2020-21 are as under:

(a) Aapda Mitra volunteers of Gorakhpur District of Uttar Pradesh saved lives of 35 people in Boat accident in Gola Tahsil of Gorakhpur on 20.08.2020.

(b) During the monsoon 2020, Aapda Mitra volunteers of Kottayam District of Kerala saved a life of 95 year old woman, shifted to nearest relief camp, provided medicine and food.

(c) In current situation of COVID 19 pandemic, the trained Aapda Mitra worked / is working to support the District Administration for following activities in Districts(18):

- Community Surveillance to enforce lockdown and social distancing in public places;
- Home delivery of essential items such as food, ration, medicines for women headed households, senior citizens, disabled people;
- Logistic support in running and monitoring quarantine & isolation centers and homes of suspect cases;

- Dissemination of information & awareness generation by IEC material, campaigns at public place sand at door steps to promote masses for using face mask, maintaining social distancing, and practicing hand hygiene.
- Preparation & Distribution of Food among the needy like migrants, homeless, in slum clusters & remote rural areas
- Sensitization drive at public places

The roles being played by trained volunteers is remarkable, which is reportedly appreciated by concerned States/Districts.

Up-scaling of Aapda Mitra Scheme in 350 districts of India

5.7 Based on positive feedback and strong recommendations of States/UTs, and in order to generate local capacity building across the country, NDMA is planning to upscale the Aapda Mitra scheme in all States/UTs with a view to train and create a pool of 100,000 volunteers in 350 selected highly vulnerable districts prone to flood, cyclone, landslide and earthquake across the country to provide lifesaving skills of disaster response, coordination, assistance. The scheme is expected to be launched soon after approval of the Government.

Project on Capacity Building on Disaster Management for IAS and Central Services Officers at LBSNAA, Mussoorie:

5.8 NDMA has been implementing the project since FY 2017-18 with the aim

to impart training to 950 IAS / Central Services Officers per year on Disaster Management and Disaster Risk Reduction at Centre for Disaster Management (CDM), Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie and undertake case study on disaster management related issues. The activities undertaken during 2020-21 under the project are:

- a. Trained 4167 Officers (1099 in FY 2017-18; 1077 in FY 2018-19; 1092 in FY 2019-20; and 899 in FY 2020-21) against the total target of 3800 Officers in four years through various training programmes.
- b. Conducted case studies on 1st — Kerala Flood 2018: Enquiry in to causes and Risk Mitigation Strategy, 2nd — Heat Wave in Andhra Pradesh and Telangana: Efficacy of Heat Wave Guidelines and Action Plan, and 3rd Lessons for Disaster Resilience - A case of Cyclone Titli in Andhra Pradesh, 2018.
- c. Developed course specific reading materials and training materials for various training programmes.
- d. Published books on Disaster Governance in India — Series 7, Disaster Response and Management Volume-VIII and Toolkit on Disaster Risk Reduction for CIVIL SERVICE OFFICERS OF INDIA.

Meetings with NGOs/ CBOs on COVID-19

- 5.9 NDMA coordinated series of meetings on 05.03.2020, 18.03.2020, 29.05.2020, 17.06.2020, 14.08.2020, 06.10.2020, and 06.11.2020 with NGOs/CBOs

under the Chairmanship of Member Secretary/Member, NDMA to discuss the steps required to contain the spread of CORONA Virus and possible role for Civil Society Organizations (CSOs). Major points discussed during various meetings were:

- a) Information on Migrant Labourers from CSOs/NGOs - Issues, problems & Challenges.
- b) Psycho Social support for the Migrant Laborers/Women/ Children etc.
- c) Livelihood issues for people in distress in rural and urban areas.
- d) Gender concerns — Special issues related to Women and Children.
- e) Awareness generation/ communication especially in promoting masses for using face mask, maintaining social distancing, and practicing hand hygiene
- f) Training Module/toolkits.
- g) Maintenance of relief shelters.
- h) Specific needs of other vulnerable sections.
- i) Role of volunteers.
- j) Enhancing community engagement.
- k) Coordination between SDMA/DDMA and NGOs.
- l) Guidelines/ advisories/policy interventions.
- m) Taking forward the awareness campaign related to Jan Aandolan for containing the spread of COVID-19.

CBDRR guidelines:

5.10 NDMA drafted CBDRR guidelines to understand, outline and integrate the roles and responsibilities of various stakeholders who play significant roles in disaster risk reduction (and, managing disasters as well) and dovetail all such efforts to the local and community level. This document is also intended to lay down a foundation framework to mainstream CBDRR into government policies, plans and programs. The guidelines are in line with the Disaster Management Act, 2005 and would empower communities to plan, implement programs and respond to disasters effectively. The document has also attempted to provide a framework for community engagement in pandemic management and case study for community preparedness from Assam State Disaster Management Authority taking into account the current pandemic situation. The document has been shared with various stakeholders including NITI Aayog for comments and suggestions, and is under finalization.

5.11 Preparation of Action Plan – Prevention and management of Thunderstorm & Lightning:

- NDMA vide letter dated 15.06.2020 requested to States / UTs to prepare their action plan on thunderstorm & lightning and upload the action plan on their website of State / UT Disaster Management Authority.
- NDMA organized a meeting through Video Conference on 29.06.2020 with the States most affected by thunderstorm and lightning and reviewed their preparedness measures. Representative of concerned State

Governments participated through video conference.

- A review meeting was held on 03.07.2020 through Video Conference with the States most affected by Thunderstorm and Lightning and deliberated on the preparedness measures for Thunderstorm and Lightning.
- A meeting was held on 07.07.2020 with IMD and discussed the issues relating to early warning on Thunderstorm and Lightning and way forward for better forecasting.
- NDMA constituted an Expert Group to implement the action plan envisaged in NDMA Guidelines on Thunderstorm & Lightning. First Meeting of the Expert Group was held on 20.07.2020 through video conference and discuss implementation of Action Plan identified in NDMA Guidelines on Thunderstorm & Lightning.

5.12 Meeting with Cold Wave affected States/ UTs and Ministries/ Departments on Prevention and Management of Cold Wave:

- NDMA organized a National Webinar on Cold Wave Risk Reduction on 14.10.2020. The broad objective of the webinar includes sharing of experiences / best practices and lessons learnt for preparedness & mitigation measures on Cold Wave.
- Following the National Webinar on Cold Wave, NDMA prepared the Do's and Don'ts taking into considerations of recommendations deliberated in the webinar and forwarded the

suggestive Do's and Don'ts to cold wave prone States and concerned Ministries / Departments for necessary action.

- A meeting was held with concerned Ministries and States prone to Cold Wave through video conference on 11.11.2020 and reviewed the preparedness measures for cold wave season 2020-21.
- A review meeting was held with the Representatives of cold wave affected States/UTs and representatives from concerned Ministries/ Departments on 06.01.2021 through video conferencing and reviewed the preparedness, response and mitigation measures undertaken by them.
- First Meeting of Working Group for formulation of Guidelines on preparation of Action Plan for prevention and management of Cold Wave was held on 02.02.2021 through Video Conference. Representatives of Working group participated in the Video Conference.

5.13 NDMA-IRCS Project " First Aid for Students and Teachers (FAST)"

- NDMA in collaboration with IRCS had developed First Aid Manuals and Mobile App for imparting first aid training to teachers and school children. A set of three modules for classes 8th to 10th, for classes 11th to 12th and teachers have been developed under the project "First Aid for Students and Teachers (FAST)". In addition mobile App for both Android and iOS were also prepared.

This initiative aims to ensure that emergency situations in school premises are swiftly dealt with until the arrival of professional medical help. A set of three modules for classes 8th to 10th, for classes 11th to 12th and teachers have been forwarded to Dept of School Education and Literacy for further necessary action.

- A D. O. letter dated 06.08.2020 has been sent to Secretary, Dept of School Education and Literacy with a request to implement the project in the schools on pan India basis to train the teachers and school children with the assistance of IRCS.
- Dept of School Education & Literacy vide O.M. dated 14.09.2020 has, inter-alia, informed that FAST modules have been forwarded to NCERT so that these may be incorporated as a mandatory module for elementary and secondary / senior secondary levels under NISHTHA i.e. a massive integrated Teacher Training Programme under Samagra Shiksha.
- NDMA has launched the Android mobile application in Google Play Store and iOS mobile application in Apple Store.
- A meeting was held with Department of School Education and Literacy and discussed about implementation of FAST Modules in Schools through video conferencing on 15.03.2021.

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

NDMA is carrying out Scoping Study on role of UAVs/ Drones in Disaster Management.

The study's overall aim is to increase the role of Science and Technology into various phases of disaster management by using drone as an innovation. Centre for Aerospace Research (CASR), Anna University has been awarded the work to carry out the Scoping Study on role of UAVs / Drones in Disaster Management and the Project Agreement was signed on 1st March, 2021.

5.15 The Report of XVth Finance Commission - Recommendation of Disaster Management

- XVth Finance Commission, after extensive consultation with all stakeholders has recommended creation of funds for disaster mitigation along with disaster response under National Disaster Risk Management Fund (NDRMF) and State Disaster Risk Management Fund (SDRMF). This entails allocation comprising Mitigation Fund at the National and State level (NDRMF/SDRMF) and Response Fund at the National and State level (NDRF/SDRF). The Response fund comprises the sub allocations for

Response & Relief Fund; Recovery & Reconstruction Fund and Capacity Building Fund. To operate the Recovery and Reconstruction Fund, the Commission recommended that Ministry of Home Affairs shall, in consultation with the NDMA, issue a detailed set of Guidelines for recovery and reconstruction assistance under NDRF/SDRF.

- For preparing the Guidelines on Recovery and Reconstruction assistance under NDRF/SDRF and its

items and norms of assistance, NDMA follows a nine-step process involving all relevant stakeholders through a series of interactive, reciprocal and supplementary actions. NDMA vide O.M. dated 07.04.2020 constituted the Working Group comprising relevant Ministries/Departments and States, who have undertaken major disaster reconstruction programmes. Following the constitution of the Working Group, NDMA convened several meetings with Working Group members and other stakeholders through video conference. NDMA prepared the draft Guidelines and made consultation with relevant Ministries/Departments, States and Organizations at National and International level through video conference to finalize the Guidelines.

5.16 The report of XVth Finance Commissions - Resettlement of Displaced People Affected by Coastal and River Erosion

- XVth Finance Commission in its recommendations also earmarked allocations for certain priorities such as the incidents, coastal and river erosion, urban flooding, landslides and drought through special initiatives under NDRF and NDMF. To utilize the allocated resources for coastal and river erosion under NDRF, the Finance Commission recommended that both the Union and the State Government develop a policy to deal with the extensive displacement of people caused by coastal and river erosion.
- NDMA organized a National Webinar on 'Formulation of policy for Resettlement of displaced people affected by River and Coastal Erosion' on 29th January 2021.

- NDMA vide O.M. dated 10.02.2021 constituted a Working Group comprising relevant Ministries/Departments, States and other stakeholders to prepare policy on Resettlement of Displaced People Affected by Coastal and River Erosion.
 - To formulate policy for 'Resettlement of displaced people affected by River and Coastal erosion' first meeting of the Working Group was held on 02.03.2021.
- a. Improved Early Warning System/ Multi-Hazards Early Warning System;
 - b. Volunteerism in Disaster Risk Reduction;
 - c. Community Based Disaster Risk Reduction; and
 - d. Disaster Resilient Infrastructure.

International Cooperation:

BRICS Related Matters:

5.18 Meeting of BRICS joint Task Force ETF on Disaster Management meeting held on 31.07.2020 via virtual platform on the following issues:

- a. Issue of using modern technologies as main a tool for preventing and forecasting evolution of emergencies;
- b. Issue of organization of communication at interaction of fire and rescue units.

5.19 NDMA proposes to conduct following meetings/workshops during India's BRICS Presidency 2021:

- a) 3rd Meeting of the BRICS Joint Task Force in the 1st / 2nd week of April, 2021
- b) BRICS Expert Level Workshop on Disaster Management followed by Meeting of the BRICS Ministers for Disaster Management in 2nd week of June / 1st week of July, 2021

5.20 These meetings/workshops will focus on following issues:

IORA Related Matters

5.21 In pursuance to the India's Commitment to hold the 1st Indian Ocean Rim Association (IORA) Expert Group Meeting on Disaster Risk Management (EGMDRM) in India made during the Meeting of Committee of Senior Officials (CSO) held on 15-16 December, 2020 and approved at COM Meeting, NDMA hosted 1st IORA EGMDRM virtually on 19th January, 2021.

5.22 The agenda of the meeting included decision on establishment of IORA Working Group on Disaster Risk Management (WGDRM), finalization of its Terms of Reference (ToR), finalization of Work Plan for WGDRM, and finalization of IORA Humanitarian Assistance and Disaster Relief (HADR) Guidelines.

5.23 NDMA organized following workshops/seminars:

- (a) e-Conclave on Fostering Earthquake Resilience in Industries and Development on 08 - 09 October, 2020 in partnership with FICCI.
- (b) Northeast Green Summit - 2020 on 16 - 18 November, 2020 in partnership with Vibgyor N.E. Foundation.
- (c) National Seminar on Vulnerability Assessment and Preparedness on

Dissemination Tactis for Disaster Risk Reduction on 19th February 2021 and 25-26 February 2021 in partnership with Dayananda Sagar College of Engineering, Bengaluru.

5.24 Monitoring / Review of Projects / Scheme at ground level:

- a. A team led by Shri Rajendra Singh, Member, NDMA visited Dehradun and Haridwar to review various schemes/activities of NDMA and other initiatives undertaken by Govt. of Uttarakhand from 9th to 12th August, 2020.
- b. A team led by Shri Rajendra Singh, Member, NDMA visited Lucknow and Gorakhpur to review various schemes/activities of NDMA and other initiatives undertaken by Govt. of Uttar Pradesh from 15th to 18th October, 2020.
- c. A team led by Shri Ramesh Kumar G, Joint Secretary, NDMA visited Vijayawada and Visakhapatnam to review various schemes/activities of NDMA and other initiatives undertaken by Govt. of Andhra Pradesh from 22nd to 25th November, 2020.

CHAPTER 6

MOCK EXERCISES & AWARENESS GENERATION

“By failing to prepare, you are preparing to fail”
 “Successful disaster management relies on experience and expertise”

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 and effective 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 (DM) plans 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 at the District level; and (v) identify gaps, if any, in the resources, manpower, communications, response capabilities, etc.

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"> ▪ Training in the Incident Response System (IRS) and associated aspects by the NDMA Coordinator: <ul style="list-style-type: none"> o Part-I: Reiteration of the importance of disaster management; its linkage to disaster risk reduction and sustainable development; India’s three-tier institutional disaster response mechanism, its linkage to informal categorization of disasters (L1, L2 and L3); and how these mechanisms, categorizations and cooperative working relationships allow various levels of response forces/responders (District, State and Central) to function in complimentary unison. 	<ul style="list-style-type: none"> ▪ District-level: Officials and other stakeholders – through video-conferencing

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

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

- (a) How to structure the IRS's 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 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 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.
- (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 Indian 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 too. Stand-alone training on the IRS is also conducted at the explicit request of the State/UT. Up till now, the Operations

Division of NDMA has conducted over 900 integrated MEs across India.

Financial Support

6.6 The Mock Exercise Programme is sustained by means of financial support provided to the States/UTs, with the NDMA allocating Rs. one lakh per district for conduct of a mock exercise. The scheme for financial support for conduct of MEs is demand driven. However, due to ongoing pandemic COVID-19, it was neither desirable nor advisable to conduct physical Mock Exercises and NDMA did not receive any demand of funds as financial assistance for conduct of MEs from States / UTs during FY 2020-21.

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

6.7 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 online training package. This online training comprises the following:

- (a) A review of the State's disaster management plan (SDMP), 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, Central Water Commission,

National Centre of Seismology, INCOIS (as applicable) on the primary hazard threat to the State / UT.

- (c) A presentation by the NDRF on its preparedness to assist the State/ UT 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).
- (e) COVID-19 advisories, particularly on how to manage and conduct disaster management activities during the pandemic.

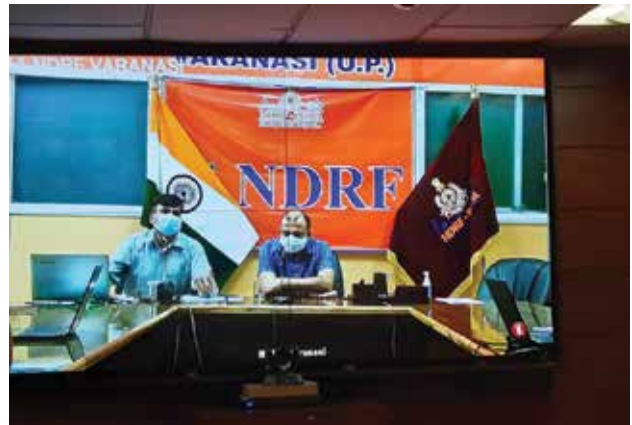
6.8 Mode of Conduct: This online training is conducted through video-conferencing with officials at the State/UT and district levels participating from their respective locations.

Table-Top Exercises in FY2020-2021

6.9 In order to prepare a training calendar, all States and UTs were approached and based on requests received, a schedule was prepared. Thus, post-relaxation of the lock-down (01 July 2020 onwards), the NDMA has conducted 33 such online training sessions for 25 States/UTs. Salient details of the same are given below:-

Date	State, Disaster Scenario and Event	Remarks
01 July 2020	State: Uttar Pradesh Scenario: Floods Event: State-level online Table-Top Exercise for State HQ and 75 districts.	Floods are one of the primary hazards the State of Uttar Pradesh faces periodically. Hence, an online Table-Top Exercise was conducted just prior to the flood season. This training, chaired by Lt General Syed Ata Hasnain (retd), Member, and Brig. Ajay Gangwar, Advisor (Ops & Comn) from the NDMA side, and by Secretary (Revenue) at the State's side, was attended by the Incident Response Teams (IRTs) at the State and District level, officials of the SDMA and DDMA, and representatives of the Armed Forces, CAPF including NDRF, along with all other stakeholders.





Date	State, Disaster Scenario and Event	Remarks
09 July 2020	<p>State: Haryana</p> <p>Scenario: Earthquake</p> <p>Event: State-level online Table-Top Exercise for State HQ and fifteen 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.</p> <p>Accordingly, a Table-Top Exercise, preceded by a brief training on the Incident Response System, was conducted for 15 Districts of the State. The training, chaired by the Addl Chief Secretary, Government of Haryana, was attended by the officials of the SDMA, DDMA's, DCs of concerned districts along with their Incident Response Teams and other stakeholders.</p>



Date	State, Disaster Scenario and Event	Remarks
14 July 2020	<p>State: Meghalaya</p> <p>Training on: Hazard Early Warning System and Last Mile Hazard Information Dissemination</p> <p>Event: State-level training</p>	<p>An online training session on 'Hazard Early Warning System & Last Mile Hazard Information Dissemination' was conducted for officials of the State of Meghalaya.</p> <p>The objective was to generate awareness on under mentioned aspects:</p> <ul style="list-style-type: none"> • How the National Early Warning System (NEWS) for Natural Hazards functions, and how to access and leverage the information put out by various agencies which are part of the NEWS. • The role, broad functions and design considerations for an Emergency Operations Centre; and what an EOC must have (manning, equipment, capabilities). • Role of Communications and Public Address/Alert Systems in Last Mile Hazard Information Dissemination, and how to configure such communications systems. • What is Situation Awareness and why is it important; how to achieve Situation Awareness in respect of a hazard event. • Importance of good SOPs and Alert Protocols.
15 July 2020	<p>State: UT of Jammu & Kashmir</p> <p>Scenario: Possible emergencies and hazards during the Shri Amarnath Ji Yatra-2020</p> <p>Event: Online Table-Top Exercise for officials of the UT of J&K, of District Ganderbal, and Shri Amarnathji Shrine Board (SASB)</p>	<p>The Shri Amarnathji Yatra (SAJY) is an annual event and the NDMA has been conducting an integrated Mock Exercise every year prior to the SAJY. The objective is to train and prepare all concerned officials, and components of the NDRF, CAPF, Armed Forces and other stakeholders on how to manage any unfortunate hazard event during the course of the SAJY.</p> <p>This training is done separately for both routes (Northern/Baltal and Southern/Pahalgam).</p> <p>However, on account of the ongoing pandemic, the Govt of the UT of J&K had decided to restrict the SAJY-2020 to the Baltal Route; it had also placed a cap on the number of Yatris permitted to proceed on the route every day.</p> <p>Consequently, an online Table-Top Exercise was conducted for the Baltal Route of the SAJY. The learning objectives of this Table-Top Exercise were:</p> <ul style="list-style-type: none"> • Highlight the roles and responsibilities of all stakeholders, particularly considering the ongoing pandemic. • Test the adequacy and efficacy of the Emergency Response Plans of UT and District Ganderbal for SAJY-2020, and evolve viable action plans.

		<ul style="list-style-type: none"> • Discern gaps, if any, in the procedures, SOPs, resources, manpower, equipment, communication and other systems. • Exercise key disaster managers in their roles and responsibilities on various emergency situations that could occur in the impending SAJY-2020. • Enhance coordination and synergize efforts of various Emergency Support Functions. • Anti-COVID measures and precautions to be instituted at every place and stage.
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Date	State, Disaster Scenario and Event	Remarks
20 July 2020	<p>State: State: UT of Jammu & Kashmir</p> <p>Scenario: Earthquake</p> <p>Event: State-level online training on the Incident Response System</p>	<p>The erstwhile State of J&K/presently UT of J&K has yet to notify the Incident Response System, which is supposed to be the preferred disaster response mechanism. Online training on the same was therefore conducted for the UT of J&K.</p> <p>The objective of this training was to generate awareness on:</p> <ul style="list-style-type: none"> • The key elements of the IRS. • How to structure IRTs. • Duties of key IRT appointments. • Composition of associated Task Forces. • The role of an Emergency Operations Centre, Situation Awareness and Resource Mapping at the UT and District levels in disaster risk management.

<p>24 July 2020</p>	<p>State: Kerala Scenario: Floods Event: State-level online Table-Top Exercise for State HQ and nine flood-prone districts</p>	<p>Nine districts of the State of Kerala are flood-prone, while five are susceptible to landslides. Two separate online training sessions, on floods and landslides, were therefore conducted for the State HQ, officials of concerned districts and other stakeholders.</p>
<p>27 July 2020</p>	<p>Scenario: Landslides Event: State-level online Table-Top Exercise for State HQ and five landslide-prone Districts</p>	<p>At the State's side, both events were chaired by Dr. Sekhar L Kuriakose, Member Secretary, KSDMA, and Dr. A Jayathilak, Principal Secretary (Revenue & Disaster Management).</p>



Date	State, Disaster Scenario and Event	Remarks
29 July 2020	State: Chhattisgarh Scenario: Floods Event: State-level online Table-Top Exercise for State HQ and floods prone districts	<p>Training on the IRS, followed by a Table-Top Exercise on floods scenario was conducted for the State HQ and flood-prone districts of Chhattisgarh.</p> <p>This training was chaired by Lt General S.A.Hasnain (Retd), Member, NDMA, and at Raipur, by the Addl Chief Secretary and Secretary (Revenue). In attendance were the IRTs of the State and flood prone districts, along with other officials and stakeholders.</p>



Date	State, Disaster Scenario and Event	Remarks
11 Aug 2020	State: Mizoram Scenario: Earthquake Event: State-level online Table-Top Exercise	<p>Mizoram, located in Seismic Zone V, has two faults running through it. A Table-Top Exercise, depicting a scenario of an earthquake of magnitude 8.5, was thus conducted for the State and all its districts. The Table-Top Exercise was preceded by training on the IRS.</p> <p>On the State side, this training was chaired by the Chief Secretary, along with the Finance Commissioner / Member SEC, Planning Secretary / Member SEC, members of SDMA, Secretary DM&R, Additional Secretary DM&R, DGP, along with other police officers, IRT appointments (State and District level); all DDMA, and representatives from NDRF, Assam Rifles, BSF, Armed Forces, etc.</p>



Date	State, Disaster Scenario and Event	Remarks
17 Aug 2020	State: UT of J&K Scenario: Floods Event: State-level online Table-Top Exercise	The UT of J&K has witnessed debilitating floods in the past. Hence, a Table-Top Exercise on floods scenario was conducted for the UT of J&K. The IRTs of the UT and all 20 districts (10 each of Jammu and Kashmir Divisions) participated in the Table-Top Exercise.



PREPARATORY ACTIVITIES

- Update DM plans.
- Update all EOCs
- Update all resource inventories availability of boats & motor boats.
- Form IRTs at UT and district level as per IRS .
- Create a stand alone Disaster Management net work
- Ensure all satellite phones are functional.
- Procure wireless sets and Loud hailers & practice on them.
- Ensure all siren systems are functional.
- Coordination with Army ,NDRF, SDRF Apda Mitr, NSS, NYK & CD.
- Awareness Campaign on Floods & promulgation of Dos & Donts.
- Pre monsoon preparatory work for mitigation and response.
- Coordination with all EW agencies and DAM management.



Date	State, Disaster Scenario and Event	Remarks
08 Sept 2020	State: Goa Scenario: Chemical (Industrial) Disaster Event: State-level online Table-Top Exercise	<p>The State of Goa, with its unique ecology, has a number of large industrial units, some of which process toxic industrial chemicals.</p> <p>Consequently, online training on the Incident Response System, and a Table-Top Exercise on Industrial-Chemical disaster was conducted for the State HQ, both Districts of Goa, representatives of Major Accident Hazard industry, and other stakeholders.</p> <p>The training was commenced with an address to participants by Lt General S.A.Hasnain (Retd), Member, NDMA, on the need to thwart accidents in industrial facilities and in the unfortunate even of an accident, to manage the incident capably.</p> <p>The training, chaired by Shri Sanjay Kumar, IAS, Secretary Revenue, Government of Goa, included presentation of both On-site and Off-Site Emergency Plans. This was followed by a Table-Top Exercise aimed at highlighting best practices to thwart / manage an industrial-chemical disaster.</p>



Date	State, Disaster Scenario and Event	Remarks
09 Sept 2020	State: Tripura Scenario: Earthquake Event: online State-level Table-Top Exercise	<p>The State of Tripura is located in Seismic Zone-V. Besides, the North-East region of India has a history of earthquakes (13 earthquakes of magnitude 5.7 and above since 1897). While there are three NDRF battalions located in / around the North-East region, in the event of a major earthquake in NE 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 initial hours using the IRS-IRT construct.</p> <p>A Table-Top exercise was hence conducted for the State. This had simulated the magnitude 8.7 Shillong earthquake of 1897.</p> <p>The event was chaired by Special Secretary Shri S Choudhuri at the State side, and by Lt General S.A.Hasnain (Retd), Member at the NDMA side.</p> <p>Additionally, Brigadier Ajay Gangwar, Advisor (Ops & Comn), NDMA, briefed all participants on under mentioned initiatives:</p> <ul style="list-style-type: none"> ▪ Common Alert Protocol and the pilot program underway in Tamil Nadu. ▪ New products available from the IMD including NowCast. ▪ 112 (NERS), Disaster Helpline 1070 and future plans. ▪ Need for the State to effectively utilize the financial support given by NDMA for EOCs.





Date	State, Disaster Scenario and Event	Remarks
10 Sept 2020	<p>State: Meghalaya</p> <p>Scenario: Earthquake</p> <p>Event: State-level online Table-Top Exercise</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.</p> <p>A 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.</p> <p>On Meghalaya's side, the training was chaired by Ms. Ripnar Lyngdoh, IAS, Addl Chief Secretary (Rev & DM). At NDMA, it was steered by Lt General S.A.Hasnain (Retd), Member, and Brigadier Ajay Gangwar, Advisor (Ops &Comn).</p> <p>The Table-Top Exercise was attended by all concerned officials at the State and District level, along with representatives of the Central forces.</p>



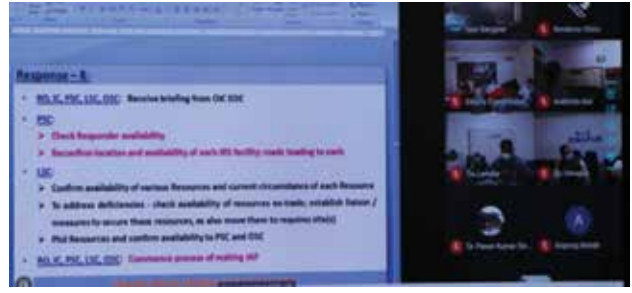


Date	State, Disaster Scenario and Event	Remarks
11 Sept 2020	<p>Organization: Haryana Institute of Public Administration (HIPA)</p> <p>Scenario:</p> <ul style="list-style-type: none"> ▪ Training on Incident Response System ▪ How to Conduct Mock Exercises <p>Event: Academy-level online training for middle-level officers of the Government of Haryana</p>	<p>Senior government officers who attend integrated Mock Exercises in a particular period often get turned over, with new officers getting appointed in their place. Although this void is addressed by NDMA by carrying out integrated MEs annually, it was felt that greater continuity could also be ensured if middle-level officers undergoing training at the State's administrative training institute are exposed to the IRS and methodologies of conducting integrated MEs. Consequently, such training was conducted online at the request of HIPA for middle-level officers of the State of Haryana undergoing a course at that institute.</p>



Date	State, Disaster Scenario and Event	Remarks
22 Sept 2020	<p>State: Nagaland</p> <p>Scenario: Earthquake</p> <p>Event: State-level</p>	<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.</p> <p>A Table-Top Exercise, simulating a magnitude 8.7 earthquake, was therefore conducted for State and District level officials. In attendance were representatives of Central forces including the NDRF, Armed Forces and other stakeholders.</p> <p>The training was commenced after Opening Remarks by Dr. Pavan Kumar Singh, Jt Advisor (Ops), and Opening Address by Lt General S.A. Hasnain (Retd), Member, NDMA. At the Nagaland side, the training was chaired by Shri Abhijit Sinha, IAS, CEO & Principal Secretary (Home & DM).</p>



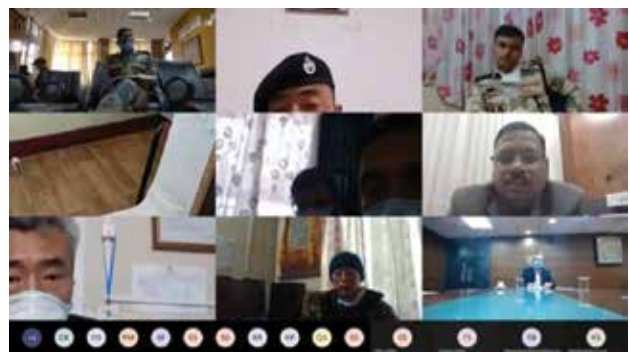


Date	State, Disaster Scenario and Event	Remarks
25 Sept 2020	State: Manipur Scenario: Earthquake Event: State-level online Table-Top Exercise	Manipur is located in Seismic Zone-V. Training on the IRS, followed by a Table-Top Exercise on an earthquake scenario was conducted by NDMA for the State of Manipur. The exercise, aimed at enhancing the disaster preparedness of the State, was chaired by Lt General S.A.Hasnain (Retd), Member, NDMA, and by Shri M H Khan, Additional Chief Secretary, Govt of Manipur.
25 Sept 2020	State: UT of Puducherry Scenario: Chemical(Industrial) disaster Event: State-level online	An online Table-Top Exercise simulating an industrial-chemical disaster, was conducted for the UT of Puducherry. The training, for the UT HQs and all four districts of the UT (Karaikal, Mahé, Puducherry and Yanam), chaired by Lt General S.A. Hasnain (Retd), Member NDMA, was attended by officials of the UT Administration and all districts.



Date	State, Disaster Scenario and Event	Remarks
12 Oct 2020	State: Himachal Pradesh Event: <ul style="list-style-type: none"> ▪ Online training on the Incident Response System for State and District level Incident Response Teams ▪ State-level online Table-Top Exercise 	<p>As a precursor to the Table-Top Exercise, training on the IRS was conducted online by NDMA. This was followed a few days later by a Table-Top Exercise.</p> <p>The programme at Himachal Pradesh side was coordinated by Shri D.C. Rana, Director-cum-Special Secretary (Revenue & DM), and initiated by Lt Gen S.A. Hasnain (Retd), Member, NDMA, in conjunction with Shri Anil Khachi, IAS, Chief Secretary, Government of HP.</p>
15 Oct 2020	Scenario: Chemical (Industrial) Disaster	<p>The Table-Top Exercise saw participation of relevant stakeholders including representatives of MAH industries in the State.</p>
10 Nov 2020	State: West Bengal Scenario: Chemical (Industrial) Disaster Event: State-level online Table-Top Exercise	<p>Training on the IRS and a Table-Top Exercise on Industrial-Chemical disasters was conducted online by NDMA for the State of West Bengal.</p> <p>The exercise was aimed at:</p> <ul style="list-style-type: none"> ▪ Generating awareness about the hazards posed by toxic industrial chemicals. ▪ The need to thwart accidents involving such chemicals. ▪ Assisting the State Government in reviewing Emergency Response Plans and SOPs. ▪ Enhancing coordination for emergency response. ▪ Identifying gaps, if any, in the resources, manpower, equipment, communications and systems with particular reference to chemical hazards. <p>Shri Dushyant Nairala, IAS, Principle Secretary (Disaster Management & Civil Defence), Government of West Bengal, took the lead to organize the exercise from the State's side. In addition to officials of the State and concerned Districts, representatives from several Major Accident Hazards units took part in the exercise. The latter particularly enriched the training with their knowledge of on-site and off-site plans.</p>
25 Nov 2020	State: Sikkim Scenario: Earthquake Event: State-level online Table-Top Exercise	<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).</p>

		<p>An online Table-Top Exercise was therefore conducted for the State. The training simulated a major earthquake with its epicenter just west of Sikkim.</p> <p>This training was commenced with an address by Shri GVV Sarma, IAS, Member Secretary, NDMA, who, inter-alia:</p> <ul style="list-style-type: none"> • Dwelt upon the importance of DM and its relevance in sustaining development particularly in the current times. • Emphasized that DM is a multi-stakeholder activity, which requires integration of the community, specialized disaster response forces, CAPFs and the Armed Forces in order to synergize the overall effort through work that is complementary. • Elucidated the role of IRS training, Table-Top Exercises and MEs in capacity building. • Highlighted the need to progressively build a SDRF and how the NDMA can facilitate its training through the NDRF.
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Date	State, Disaster Scenario and Event	Remarks
04 Dec 2020	State: Assam Scenario: Earthquake Event: State-level online Table-Top Exercise	The State of Assam, in Seismic Zone-V, is particularly vulnerable to earthquakes. Refresher training on the IRS, followed by a Table-Top Exercise on an earthquake scenario, was conducted online by NDMA for officials and stakeholders down to District level. At the States, the event was coordinated by Shri M.S. Mannivannan, IAS, CEO, ASDMA, and chaired by Shri Jishnu Baruah, IAS, Chief Secretary, Government of Assam.



Date	State, Disaster Scenario and Event	Remarks
10 Dec 2020	State: UT of Chandigarh Scenario: Earthquake Event: State-level Table-Top Exercise	Training on the IRS, followed by a Table-Top Exercise, was conducted for the UT of Chandigarh, which lies in Seismic Zone-IV. The entire programme, chaired by Lt General S.A. Hasnain (Retd), Member NDMA, and Advisor to Governor of the UT of Chandigarh, was attended by all concerned officials of the UT Administration along with their IRTs and representatives of Central organizations.



Date	State, Disaster Scenario and Event	Remarks
18 Dec 2020	State: Jharkhand Scenario: Chemical (Industrial) Disaster Event: State-level online Table-Top Exercise	<p>IRS Training, followed by a Table-Top Exercise on industrial chemical disasters, was conducted by NDMA for the State of Jharkhand.</p> <p>The event, chaired by Dr Amitabh Kaushal, IAS, Secretary, Department of Home, was attended by officials from all 24 districts along with representatives of MAH industries from the districts of East Singhbhum (Jamshedpur), Bokaro and Dhanbad.</p>

Date	State, Disaster Scenario and Event	Remarks
15 Jan 2021	State: Uttarakhand Scenario: Earthquake Event: State-level online Table-Top Exercise	<p>A Table Top Exercise, simulating a major earthquake scenario, was conducted for all districts of the State. The TTE, which was preceded by training on the IRS, was attended by officials at the State and District levels. In addition were affiliated Central organizations. The programmed was overseen by Lt General S.A Hasnain (Retd), Member NDMA, and Secretary (Revenue), Govt of Uttarakhand.</p>





Date	State, Disaster Scenario and Event	Remarks
19 Jan 2021	<p>State: Tamil Nadu</p> <p>Scenario: Chemical (Industrial) Disaster</p> <p>Event: State-level Table-Top Exercise for State HQ and 23 Districts with Major Accident Hazard Units</p>	<p>Tamil Nadu is an industrialized State with many industry units processing toxic chemicals. Presently, there are about 166 Major Accident Hazard (MAH) industries spread across 23 districts of the State.</p> <p>Some of these MAH units are in districts located inland, while others are in coastal districts, where, in addition to system failures, the industry is also vulnerable to being disrupted by natural hazards. This increases the probability of accidents in such districts.</p> <p>Tamil Nadu is also one of the most urbanized states of India, with 49% of its population living in urban areas. With industry in close proximity to living spaces, the risk from Industrial-Chemical disasters stands augmented.</p> <p>There is hence, a requirement to pro-actively thwart industrial-chemical accidents, and in the unfortunate event of one, there is a need to manage it appropriately to minimize damage to lives, infrastructure, property and environment.</p> <p>Consequently, a comprehensive Table-Top Exercise was held for the State. This training was commenced with a Welcome Address by Dr. Pavan Kumar Singh, Jt Advisor (Ops), and an Opening Address by Lt General S.A.Hasnain (Retd), Member, NDMA. In the State, the programme was overseen by Shri Thiru K Phanindra Reddy, IAS, Additional Chief Secretary.</p> <p>The training was attended by Dr. D Jagannathan, IAS, Commissioner, Disaster Management; Shri R Kannan, Additional Chief Environmental Engineer, Urbanization; Commissioner, Greater Chennai Corporation; District Collectors of concerned districts, along with IRTs, and the NDRF. In addition were representatives of the MAH industry.</p>

Emphasis was laid on the following:

- Risk and threat spectrum.
- Implications of chemical disasters.
- Use of technology, particularly geo-spatial, communications, geo-referenced data, Response Information Data Sheets (RIDS) software and modeling.
- Community preparedness (including Awareness & Preparedness for Emergencies at Local Level).
- Elements of a Chemical Disaster Management Action Plan.
- Risk reduction techniques.
- Preparation of cogent On-Site and Off-Site Plans, and Mutual Aid Schemes by the industry and districts.



Date	State, Disaster Scenario and Event	Remarks
28 Jan 2021	State: Gujarat Scenario: Earthquake Event: State-level online Table-Top Exercise	<p>A Table-Top Exercise, simulating a major earthquake, was conducted for the State of Gujarat. The TTE was preceded by IRS training.</p> <p>The training saw participation of officials of the State HQ, all 33 districts, as well as Central organization including NDRF.</p> <p>The training was chaired by Lt General S.A Hasnain (Retd), Member, NDMA and Sh Harshad R Patel, IAS, CEO, Gujarat SDMA & Secretary (Revenue & DM). Dr V Thiruppuazh, IAS, Additional Secretary (Policy & Plan), NDMA and Sh Victor Mecwan, IAS, Addl CEO Gujarat SDMA also steered the exercise.</p>



Date	State, Disaster Scenario and Event	Remarks											
11 Feb 2021	State: Arunachal Pradesh Scenario: Earthquake Event: State-level Table-Top Exercise	<p>Arunachal Pradesh, a frontline State of India, is situated in Seismic Zone-V, and has a history of major earthquakes (1906, 1908, 1941, 1947, 1950) and occasional quakes of lesser intensity. Even though it has a low population density, a 2013 study sponsored by NDMA for two districts had assessed that seismic activity whose scenario is similar to the 1897 Shillong earthquake (M 8.7) but occurs at midnight, may result in under mentioned casualties:</p> <table border="1" data-bbox="597 676 1409 849"> <thead> <tr> <th>District</th> <th>Injured</th> <th>Dead</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>Papum Pare</td> <td>24500</td> <td>3600</td> <td rowspan="2">Study limited to just these two Districts</td> </tr> <tr> <td>Lower Subansiri</td> <td>4200</td> <td>900</td> </tr> </tbody> </table> <p>High mountains, mighty rivers and dense forests have typically hampered inter-communication between people living in different river valleys. And Arunachal Pradesh, has all three. This isolation gets aggravated by a natural hazard such as an earthquake. In addition is the connectivity with, and within the State. These aspects therefore reinforce the imperative for greater involvement/integration of Central forces for response in the unfortunate event of a major disaster. Consequently, a Table-Top Exercise, which emulated the scenario of the 10 Feb 2020 mock exercise in the State, was conducted. Chaired jointly by Lt General S.A Hasnain (Retd), Member, NDMA and Shri Dani Salu, Secretary (DM), Government of Arunachal Pradesh, the training was attended, in addition to officials of the State, by components of the NDRF, CAPFs, Indian Army, Indian Air Force, the Border Roads Organization, and other Central organizations. The role of all Central forces was dovetailed into the overall response.</p>	District	Injured	Dead	Remarks	Papum Pare	24500	3600	Study limited to just these two Districts	Lower Subansiri	4200	900
District	Injured	Dead	Remarks										
Papum Pare	24500	3600	Study limited to just these two Districts										
Lower Subansiri	4200	900											



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ARUNACHAL FRONT

The People's Daily

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Required Sub-Editor having good command over English and computer knowledge. Preference shall be given to experienced persons.
- Editor
Arunachal Front

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Documentary film Black Sand qualifies for Oscars 2021 | P7

MINI-BLAD: ITANAGAR, FRIDAY, 12 FEBRUARY, 2021
MORNING: 5.00 am, Evening: 5.00 pm

State's preparedness to tackle natural disasters assessed NDMA conducts online table top exercise

By Our Reporter

ITANAGAR, Feb 11: An online table top exercise on Incident Response System (IRS) in the eventuality of a mega earthquake was conducted today by the National Disaster Management Authority (NDMA), Ministry of Home Affairs, Government of India and the Department of Disaster Management, Government of Arunachal Pradesh.

The participants included members of National Disaster Management Authority (NDMA), State Disaster Management Authority, Deputy Commissioners of all the Districts, District Disaster Management Authority (DDMA), SDRF, NDRF, BRO, CRPF, ITBP and other stakeholders. The table top exercise was conducted to assess the capabilities and preparedness of the state to endure any major disaster, find gaps and to address them.

The opening address was delivered by Member of NDMA, Lt. Gen Syed Ata Hasnain (Retd), PVSM, UYSM, AVSM, SM, VSM. He remarked that despite the ongoing pandemic, it was necessary to conduct training on preparedness

regularly as disasters won't wait for the pandemic to subside which is evident from the recent case of the avalanche disaster at Uttarakhand. He emphasized on the role of BRO during disasters.

The Secretary, Disaster Management, Dani Salu presented an overview of the State Disaster Management Plan and state's preparedness on earthquakes. He informed that the state had notified Incident Response Team (IRT) to respond to major disasters, which were automatically activated during the event of a disaster. He also commended

NDMA for conducting the State level mega mock exercises last year which enabled the State to face the Covid-19 pandemic crisis effectively.

It was followed by a presentation on the status and preparedness of State Disaster Management Force (SDRF) from Sanjay Bhatia, Nodal Officer, SDRF cum SP, Fire and Emergency Services. Dr Lobsang Jampa, state epidemiologist delivered a brief presentation on medical preparedness for earthquake and Covid-19 information for first responders.

The table top exercise was conducted and moderated by Brig. Kuldip Singh (retd.), NDMA. He gave an elaborate presentation on the step-by-step actions to be taken by every stakeholder during the event of an earthquake. He stressed on the roles and responsibilities of each member and the importance of having a dedicated emergency operation centre (EOC) equipped with a robust communication system to efficiently tackle any disaster.



Date	State, Disaster Scenario and Event	Remarks
22 Feb 2021	State: Telangana Scenario: Floods Event: State-level online Table-Top Exercise	This online Table-Top Exercise (TTE) on a flood scenario was the first training interaction between the NDMA and the State of Telangana since establishment of the State.

		<p>The State, located neither in a high seismic zone (a north-eastern strip of the State is in Zone-3; rest is in Zone-2) nor on the coast, is however drained by two major rivers, Krishna (in the north) and Godavari (in the south). About 68% of Krishna's, and about 79% of Godavari's river catchment areas lie in Telangana.</p> <p>The State, vulnerable to both drought and floods, is now increasingly being affected by climate change.</p> <p>The training, chaired by Shri Rahul Bojja, IAS, Commissioner (Revenue & DM), State of Telangana, was also attended by representatives from the NDRF, CAPFs and Armed Forces.</p>
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Date	State, Disaster Scenario and Event	Remarks
04 March 2021	<p>State: Uttarakhand</p> <p>Scenario: Mass gathering Event -Maha Kumbh Mela 2021 at Haridwar</p> <p>Event: online Orientation & Coordination Conference</p>	<p>In order to assist the State of Uttarakhand to prepare for the mass-gathering events related to the Shahi Snans of April 2021, a Table-Top Exercise and a Mock Exercise were scheduled on 05 and 06 April 2021, respectively.</p> <p>An Orientation & Coordination Conference related to these training events was held under the chairmanship of Lt General Syed Ata Hasnain (Retd), Member, NDMA.</p>





Date	State, Disaster Scenario and Event	Remarks
10 March 2021	<p>State: UT of J&K Scenario: Earthquake Event: Training on the Incident Response System, followed by a Table-Top Exercise for ten districts of Srinagar Division of the UT of J&K</p>	<p>The UT of J&K, occupying a strategic position in India, is located in Seismic Zone-IV, with a few parts in Zone-V. It also has a history of major earthquakes, and of late, has been experiencing seismic activity.</p> <p>Hence, training on the IRS, followed by a Table-Top Exercise, was conducted for the Kashmir Division of the UT.</p> <p>At Srinagar, the session was presided by Lt General Syed Ata Hasnain (Retd), Member, NDMA. Shri Pandurang K Pole, IAS, Commissioner, Kashmir Division, chaired the training on behalf of the Govt of J&K.</p> <p>The event, attended by all stakeholders including the Armed Forces, also included a brief but enlightening talk by Lt General DS Hooda (Retd), former GOC-in-C, Northern Command, on his experience of handling the 2005 earthquake.</p>





Resumption of the Integrated Mock Exercise Process

6.10 Given the availability of the anti-COVID vaccines, the NDMA plans to resume conducting integrated mock exercises as hitherto fore as soon as conditions permit. In this regard, NDMA conducted video-conferencing with all States/ UTs under the chairmanship of Lt General S.A Hasnain (Retd), Member, NDMA on 16 March 2021 and delivered a presentation on modalities of conduct of mock exercises and brief of the schemes

i.e scheme for financial support to States/ UTs for conduct of MEs and capacity building of Emergency Operation Centres (EOCs). Further, the deliberations on the dates and disaster scenario of proposed annual mock exercise calendar for the year 2021-22 were made.

District-level Mock Exercise Programme by NDRF

6.11 Review by Hon'ble Home Minister: On 30 June 2020m, 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 and 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.

6.12 It was also directed that on the day of a district's mock exercise, the fire & emergency services of the concerned district and of the State/UT shall also visit schools in their jurisdiction and conduct mock drills in 10 to 20 pre-identified schools in the district.

6.13 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:

Phase	FY	Districts covered
Phase-I	2020-21 (from 1 October 2020 to 31 March 2021)	87
Phase-II	2021-22	Annual Calendar of distt level MEs covering 355 Districts has been circulated to all States/UTs
Phase-III	2022-23	Remaining districts

Additional Activities

6.14 In the FY2020-2021, 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
02 June 2020 14 Oct 2020 15 Jan 2021	The National Centre for Disease Control (NCDC), Ministry of Health & Family Welfare, had requested NDMA for assistance in "Designing, Building and Operating an Emergency Operations Centre" at its Strategic Health Operations Centre (SHOC). As a sequel to earlier interactions in 2019, further meetings were held on 02 June 2020, 14 Oct 2020 and 15 Jan 2021. Brig. Kuldip Singh (Retd), Sr. Consultant, NDMA, rendered necessary assistance.
19 Sept 2020	Online presentation by Brigadier Kuldip Singh (retd), Sr Consultant, NDMA, on "Fire, and Other Recurring and Emergent Disasters - Causation, Mitigation, Preparedness & Response", to national and international participants of the webinar entitled "Disaster Risk Reduction with special reference to Earthquake, Flood, Landslide, Fire and other Emergent Hazards" at the Rajiv Gandhi University, Arunachal Pradesh

27 Sept 2020	Online presentation by Brigadier Kuldeep Singh (retd), Sr Consultant, NDMA, on "Unmanned Aerial Systems in Disaster Management" to participants of webinar entitled "Unmanned Aerial Systems 2020 - Civil and Military", conducted by the Centre for Joint Warfare Studies (CENJOWS).
29 Sept 2020	Online session by Brigadier Ajay Gangwar, Advisor (Ops & Comn), NDMA, on "Bringing About Greater Cohesion in Response to International Disasters".
25 Nov 20	Online session on 'Management of CBRN Issues, Fire Safety and Search & Rescue' for Government officials undergoing training at the Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie, Uttarakhand.
01 Dec 2020	Online talk by Lt General S.A. Hasnain (Retd), Member NDMA, entitled "Challenges of Disaster Management and Disaster Risk Reduction in India" to officers of the Indian Armed Forces attending Higher Command Course at Army War College.
05 Jan 2021	Interaction and Brainstorming by NDMA with NDRF: <ul style="list-style-type: none"> ▪ Feedback / lessons learnt in various recent operations during South-West Monsoon 2020 & North East Monsoon 2020 particularly on Cyclones. ▪ Feedback / lessons - Styrene gas leakage.
03 Feb 2021	Online session on 'Fire Safety and Search & Rescue' for government officials undergoing training at the Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie, Uttarakhand.
24 March 2021	Brig, Ajay Gangwar, Advisor (Ops & Comn), NDMA, participated in the FRANZ Initiative / "Sharing of HADR Experience", and delivered a talk to the Armed Forces of India, France, Australia and New Zealand. The event was held at HQ Integrated Defence Staff, Ministry of Defence, New Delhi.

6.15 Control Room Activities

- (a) NDMA was also involved in tabulating and compiling data on support provided to stranded migrants and other needy persons during the lockdown prompted by the COVID-19 pandemic. This data, encompassing all States and UTs, covered various aspects like relief camps and shelters; number of persons housed in relief camps and shelters, provided with free food by the State and by employers/industry; number of food camps, etc.
- (b) Data on number of Dignity Kits provided to women/girls in relief camps and quarantine centers as part of maintaining minimum anti-

COVID-19 hygiene and sanitation standards was compiled.

- (c) Data on Public Health Response to COVID-19 was tabulated.
- (d) Provided actionable inputs for setting-up of Integrated Control Room for Emergency Response (ICR-ER) in MHA.
- (e) Comprehensive instructions were issued on 12.05.2020 to all States / UTs regarding review of preparedness of monsoon season amidst our fight against COVID-19 pandemic (containment, preparedness and management etc).
- (f) Instructions regarding preparatory

activities prior to the formation of Super Cyclonic storm "AMPHAN" were issued on 13.05.2020 to affected States / UTs emphasizing the need of additional infrastructure, human and material resources, revision of preparedness and response plans for managing cyclone with concurrent COVID-19 pandemic situation.

Capacity Building of NDRF / CAPF / SDRF / SDMA

6.16 NDMA conducted series of video conferencing with all States/UTs regarding non-medical and non-pharmaceutical measures for containment of COVID-19 on following issues :

- Overview of COVID-19 containment measures
- Preparedness of concurrent disasters
- Social protection issues
- Allocation and expenditure from SDRF

6.17 Guidelines for raising and operationalization of State Disaster Response Force (SDRF) by States / UTs were prepared and issued on 18.09.2020.

6.18 It would however be recalled from above that during the online training conducted for various States / UTs, their State Disaster Management Plan (SDMP) and State Disaster Response Force (SDRF) were also reviewed. The NDMA, in conjunction with the concerned State/UT, jointly identified the voids in the SDRF, and has rendered advice to the State/UT on the same.

6.19 **International Search and Rescue Advisory Group (INSARAG) External Classification (IEC) of NDRF**

Teams: Two Battalions of NDRF i.e. 8th Bn Ghaziabad and 2nd Bn Haringhata (Kolkata) are earmarked for providing assistance in International Urban Search and Rescue (USAR) Operations as per International Search and Rescue Advisory Group (INSARAG) Guidelines. INSARAG guidelines state that the team should be capable of getting airborne for deployment within 8 to 10 hours of requisition for deployment of the USAR team has to deploy abroad and rescue people within the golden hours. Consequently, for ensuring proper procedures and system in place for prompt, well coordinated and swift international deployment of highly specialized USAR/SAR teams of NDRF to the countries requesting such assistance from Gol and which has been agreed to by Gol, there was a need for framing a "Standard Operating Procedure" (SOP). After having deliberations on the checklists for action on part of various Ministries / Deptts of Gol viz MEA, MoCA, MoH&FW, MoD, MoAH, CBIT & Customs, NDRF and MHA, there felt a need to revise the draft SOP and draft Policy Proposal for deployment of IEC NDRF teams abroad. Accordingly, Draft Policy Proposal and Standing Operating Procedure (SOP) for IEC and deployment of NDRF teams abroad has been formulated, delineating the roles and responsibilities of concerned Ministries / Departments and forwarded to MHA for obtaining approval of Govt of India for implementation.

6.20 **Development of in-house capabilities regarding Disaster Management by all CAPFs:** All the Central Armed Police Forces (CAPFs) have been issued following directions to develop their in-house capabilities through training and joint exercises:-

- (a) All the CAPFs should have disaster response units whose in-house capabilities should be developed with training and joint exercises.
- (b) Despite transfer of the sanctioned post of 36 instructors (09 posts each from respective DM Training Wings of BSF, CRPF, CISF and ITBP) at NDRA, Nagpur, these existing disaster management training institutions of CAPFs should continue functioning. CAPFs may utilize the repatriated manpower of NDRF for conducting of disaster management training to their personnel. They may also train additional instructors at NDRF Academy, Nagpur to augment the shortfall.
- (c) All the CAPFs should incorporate elementary disaster management module in the basic training of their personnel and a more comprehensive Disaster Management Capsule in Advance Courses.
- (d) CAPFs need to procure DM equipments and protective gears for their personnel engaging in DM related activities as well as training.
- (e) CAPFs have to provide women personnel for NDRF battalions to fill the prescribed vacancies.
- (f) The following 03 courses have been designed keeping in view of CAPFs anticipated role in Disaster Management:
- (i) Basic Disaster Management & Response course (8 Weeks)
 - (ii) ToT in Medical First Responder (02 Weeks)

(iii) Master Training Course (01 Week)

The Block and Detailed Syllabus for the above training modules on 3 courses has been approved by NDMA with the direction to NDRF to seek demand from CAPFs and to commence the course.

- 6.21 **Uniform dress code/ Jacket for Response Forces for International Operations:** For international Operations, design of the uniform jacket was finalized after due consultations with all stakeholders and proto type samples have been procured by Ops Division and shared with the Department of Military Affairs and NDRF for implementation by the Armed Forces as well as NDRF. The requisite directions have been passed by Chief of Defence Staff and DG NDRF to field formations for compliance.
- 6.22 **Branding & packaging of relief material to promote brand 'INDIA' during India's HADR operations:** Guidelines on branding & packaging of relief material during International HADR operations were issued to all concerned Ministries / Departments including MEA and NDRF for necessary compliance. Sample stickers having 'TRICOLOR' and message "WITH BEST COMPLIMENTS FROM PEOPLE OF REPUBLIC OF INDIA" had also been circulated with the guidelines. Besides approved Jackets and Stickers, instructions for labeling of all assets being transported for HADR like vehicles, equipment and machinery with 'INDIA' and the 'TRICOLOR' had been issued. These instructions are being complied with as evident from the photographs shared by NDRF regarding recent HADR support sent to Nepal, Lebanon,

Cambodia, Vietnam and Fiji by Govt. of India.

6.23 Exploring New Technology of Generation of water from Air for availability of Safe drinking water to disaster hit areas: M/S

Watergen, Israel had offered one Gen-M Machine (Water from Air Technology Machine) on 'No Cost No Commitment' (NCNC) basis. NDMA had examined and accepted the firm's offer and get the machine installed at RRC NDRF Ajmer being low humid arid zone.

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

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). NDMA had requested Ministry of Petroleum & Natural Gas, Ministry of Chemical & Fertilizer, Ministry of Commerce & Industry, Ministry of Food Processing Industries, Ministry of Corporate Affairs, Ministry of Heavy Industries, Department of Public Enterprises, Ministry of Steel, Ministry of Textile, BPCL, HPCL and IOCL to take requisite steps to encourage PSUs /Private industries to acquire specialized equipments for fighting industry related disasters and to share list of such specialized machinery/equipment already existing or being procured with respective District administration for timely updation on India Disaster Resource Network

(IDRN) portal . Since the issue is of dynamic nature, therefore, periodic review is being undertaken by NDMA.

6.25 Common Alerting Protocol (CAP) Pilot Project

This Project has been implemented in the State of Tamil Nadu by CDoT at a cost of Rs 13.75 Cr. The project would facilitate dissemination of alerts/warnings through SMS to the population in a geographical area in English, Hindi and the Regional language. The Project is completed now.

6.26 Capacity Building - Emergency Operation Centers (EOCs)

The project proposes to improve Emergency Operation centers (EOCs) of the States by providing one time financial assistance for procurement of equipment and imparting training related to EOC. The project cost is Rs. 5 Crore. Funds have been transferred to 22 States based on their requisition for implementation of the Project. Project is likely to be completed by 31.03.2021.

6.27 Web Based Training

The project aims at capacity building of citizens in disaster management through web based training modules and courses. Jawahar Lal Nehru University, New Delhi and Odisha State Open University are implementing the project at a total cost of Rs 98 Lakh. JNU has shown inability to complete the Project due to Covid situation. OSOU has completed the Project in March 2021.

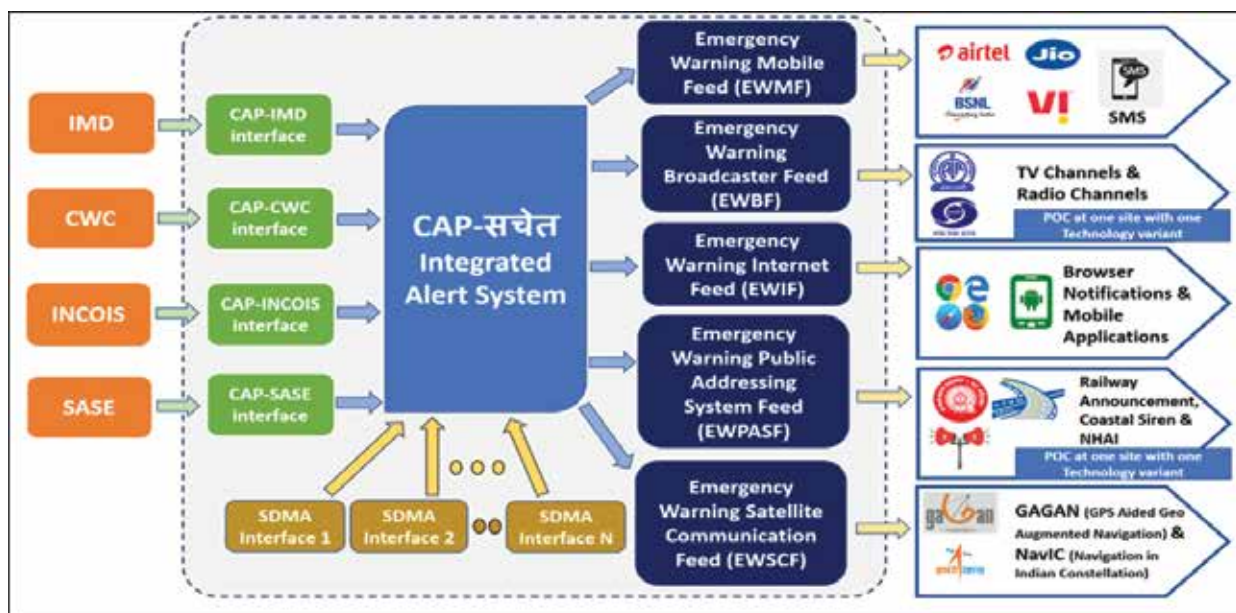
6.28 Common Alerting Protocol (CAP) PAN India Project

Common Alerting Protocol (CAP) is an ITU standard for Alerts. The Project which

is based on CAP Standards will facilitate dissemination of warnings/alerts about impending hazards to geographically referenced population, in vernacular language, over various communication media viz telephone, mobile, radio, TV, Internet, social media, signages, sirens etc. These Alerts will be generated by the alert generating agencies viz IMD, CWC, SASE, INCOIS, etc, and approved by SDMA for dissemination over various media. SDMA would moderate the alert received from Alert Generating Agencies and disseminate it to the targeted audience through CAP Platform. The audience would get to know about the alert through any of the media available to him/her and take timely preventive measure. The Project will enable more reaction time thus greatly reducing loss to life and property. The Project has been conceived by NDMA and is being implemented with the help of Department of Telecommunication (DoT) and Centre for Development of

Telematics (C-DOT). The cost of Phase -I of the Project which will be completed in 18 months is Rs 354.83 Cr. Approval of competent authority has been received on 04.03.2021 for implementation of the Phase - I of the Project. The scope of work for Phase - I is as under :-

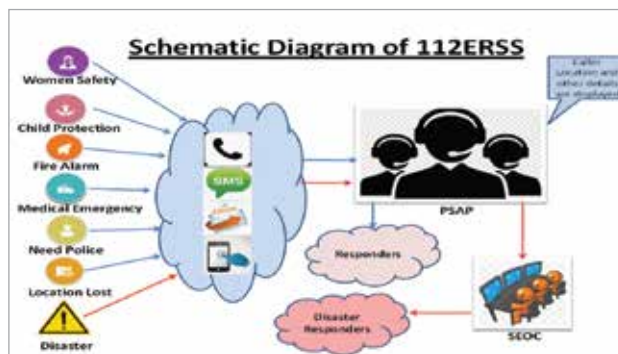
- i. Integration with Alert Disseminating Agencies
 - a) All TSPs for SMS
 - b) Mobile Application , browser notification and RSS feed
 - c) GAGAN and NavIC
- ii. Proof of Concept (One variant per technology).
 - a) AIR, Doordarshan
 - b) Railway Station Announcement System
 - c) Coastal Sirens
 - d) Cell Broadcast



CAP based Integrated Alert System

6.29 Extension of Emergency Response Support System (112ERSS)

It is the vision of Govt of India to launch an integrated emergency response system with a single emergency number 112 and web portal, to address different emergencies of citizens. Presently, Emergency Response Support System (ERSS) is designed to address all emergency signals received from citizens through voice call, SMS, e-mail, panic SOS signal, ERSS web portal etc. Presently, ERSS caters for emergencies pertaining to Woman safety, Child protection, Police, Fire and Medical assistance. NDMA has conceived a Project "Extension of ERSS (112 ERSS) to cater the Disaster Emergencies". By implementation of this Project, disaster related emergencies would also be addressed by 112 ERSS. Disaster related emergency call will be routed by the Police control center to the State Emergency Operation Centers (SEOCs) which would further direct the call to appropriate responder. The Project proposal has been submitted to MHA for approval.



6.30 Subhas Chandra Bose Aapda Prabandhan Puraskaar

The award "Subhas Chandra Bose Aapda Prabandhan Puraskar (SCBAPP)" was conceived by Govt. of India in the year 2018-19. This award is given annually to 'Individuals/Institutions' to recognize outstanding contribution by individuals and Institutions in the field of Disaster Management. The fields encompass Prevention, Mitigation, Preparedness, Rescue, Response, Relief, Rehabilitation, Research/ Innovations and Early Warning. The award for the year 2021 was declared on 23.01.2021, the birth anniversary of Netaji Subhas Chandra Bose. The SCBAPP-2021 has been awarded to Dr



Rajendra Kumar Bhandari in Individual Category and “Sustainable Environment and Ecological Development Society (SEEDS)” in Institution Category

Awareness Generation

6.31 In its endeavour to spread awareness amongst the masses, Public Relations & Awareness Generation (PR&AG) Division, National Disaster Management Authority (NDMA), takes various public awareness initiatives through electronic and print 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 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.

6.32 The following awareness campaigns were carried out during 2020-21

Audio-Visual and Print Campaigns

6.33 **Doordarshan/All India Radio/Lok Sabha TV** - Audio-Video spots on natural disasters such as earthquake, flood, urban flood, landslide, heat wave, cold wave and cyclone were telecast/broadcast on Doordarshan (National Network and Regional Kendras of Doordarshan) and All India Radio. Multiple spots of 30/40/50/60 seconds each on do's and dont's of various disasters were run in respective disaster prone regions. Details of the campaigns run during this year are as under:

Sl.	Details of various Awareness Campaigns run during 2020-21
1	“Heat-wave” Campaign through DD for 7 Days from 2/5/2020 to 8/5/2020
2	“Heat-wave” Campaign through AIR for 06 days from 2/5/2020 to 7/5/2020
3	“Cyclone” Campaign through DD for 05 days from 18/5/2020 to 22/5/2020
4	“Cyclone” Campaign through AIR for 05 days from 18/5/2020 to 22/5/2020
5	“Heat-wave” Campaign through DD for 10 Days from 27/5/2020 to 5/6/2020
6	“Heat-wave” Campaign through AIR for 7 days from 27/5/2020 to 2/6/2020
7	“Flood” Campaign through DD for 10 Days from 27/6/2020 to 6/7/2020
8	“Flood” Campaign through AIR for 7 days from 27/6/2020 to 3/7/2020
9	“Urban Flood” Campaign through DD for 10 Days from 27/6/2020 to 6/7/2020
10	“Urban Flood” Campaign through AIR for 13 days from 27/6/2020 to 9/7/2020
11	“Earthquake” Campaign through DD for 10 days from 17/7/2020 to 26/7/2020
12	“Lightning & Thunderstorm” Campaign through DD for 10 days from 8/7/2020 to 17/7/2020
13	“Landslide” Campaign through DD for 10 days from 23/7/2020 to 1/8/2020

14	"Landslide" Campaign through AIR for 7 days from 23/7/2020 to 29/7/2020
15	"Earthquake" Campaign through Lok Sabha TV for 30 days from 14/9/2020 to 13/10/2020 for Monsoon Session.
16	"Cold Wave" Campaign through AIR for 10 days from 27/10/2020 to 5/11/2020
17	"Cold Wave" Campaign through DD for 10 days on payment & 6 days through earned bonus together from 30/11/2020 to 09/12/2020
18	"Earthquake" Campaign through DD for 10 days on payment & 6 days through earned Bonus together from 10/12/2020 to 19/12/2020
19	"Earthquake" Campaign through AIR for 10 days from 10/12/2020 to 9/12/2020
20	"Cold Wave" Campaign through DD for 10 days from 22/12/2020 to 31/12/2020 Bonus Plan
21	"Heat Wave" Campaign through AIR for 5 days from 13/3/2021 to 17/3/2021
22	"Heat Wave" Campaign through AIR for 5 days during India-England Cricket Series (Five T-20 Matches) held at Ahmedabad on 12/3, 14/3, 16/3, 18/3, and 20/3/2021.
23	"Heat Wave" Campaign through DD for 5 days from 16/3/2021 to 20/3/2021

"AAPDA KA SAAMNA" A Special Programme Series of Panel Discussion on various Disasters

6.34 For creating awareness amongst public, a special programme of panel discussion/talk show titled Aapda Ka Saamna was produced and aired through DD News and regional channels on every Sunday at 7:00PM to 7:30PM (repeat telecast on Wednesday at 3.00PM to 3.30PM) on different disasters from 28.06.2020 to 27.12.2020. The programme included discussion with two-three subject experts of different disasters. The details of the topics run through DD are as under:

"Aapda Ka Saamna"

S.No	Topic of Discussion/Talk Show	Date of Discussion/Talk Show
1	Earthquake	28 th June, 2020
2	Flood	5 th July, 2020
3	Lightning	12 th July, 2020
4	Urban Floods	19 th July, 2020
5	Landslides	25 th July, 2020
6	Fire Safety	2 nd August, 2020
7	Chemical (Industrial)	9 th August, 2020
8	Forest Fire	16 th August, 2020
9	Tsunami	23 rd August, 2020
10	Floods (NE Monsoon)	30 th August, 2020
11	Drought	6 th September, 2020
12	Avalanche	13 th September, 2020
13	Cold wave	20 th September, 2020

14	Cyclone	27 th September, 2020
15	Boat Safety-Preventing Boat related disaster (Boat Capsizing)	11 th October, 2020
16	Inclusive DRR	18 th October, 2020
17	Psycho Social Support	25 th October, 2020
18	School Safety	1 st November, 2020
19	House owners role in disaster safety	8 th November, 2020
20	Earthquake (Repeat as tremors are happening)	15 th November, 2020
21	Mock Drills and Preparedness	22 nd November, 2020
22	Glacial Lake Outburst Flood (GLOF)	29 th November, 2020
23	Climate Change and Extreme Events	6 th December, 2020
24	Understanding Weather Warnings	13 th December, 2020
25	CBDM	20 th December, 2020
26	Going beyond Response: the need for mitigation	27 th December, 2020

6.35 Awareness about COVID-19

i) In view of Covid-19 pandemic, NDMA produced various short films based on specific insights about issues on Covid-19 and uploaded on the social media platforms and NDMA's website from time to time, for creating awareness. These films were also shared with States/UTs for dissemination in local regions. The details of films produced are as under:

- Film on Home Isolation: providing important guidelines for the patient and care giver.
- 'मास्क नहीं पहनना बहादुरी नहीं बेवकूफी है': conveying the Importance of wearing mask.
- 'अगर कोरोनावायरस दिखता नहीं इसका मतलब यह नहीं कि होता नहीं': A film to counter the perceived view, especially in the rural areas, that 'they cannot see the virus, hence it is not there' to educate masses to take all precautionary

measure, especially wearing of masks.

- 'कोरोनावायरस से आपके अंगों को क्या नुकसान हो सकता है': A film showcasing the side-effects of Covid-19 and emphasizing the importance of wearing a mask, washing hands and maintaining physical distance.
- 'बेटी को कोरोनावायरस': A film making an emotional appeal to the public emphasizing asymptomatic cases and the importance of wearing a mask.
- 'कोरोनावायरस के शिकार कौन?': The rapid spread of coronavirus was depicted in the film and emphasized the three key rules of safety.
- For various situations during the post-lockdown (Unlock) scenario eight films in Hindi and English language, with messages for the vulnerable population such as

labourers, travellers, elderly etc., were produced and disseminated widely. The themes of the films are:

- i. Labour and employment continuation: agriculture, MSMEs, Small shops, construction workers;
- ii. Public transport: flight, rail, bus and local transport;
- iii. Handling personal items: key, card, watch, wallet, mobile, grocery;
- iv. Urban slums/ big households;
- v. Care of elderly;
- vi. School and educational institution;
- vii. Not stigmatizing Covid-19 patients;
- viii. Immunity boosting measures against Covid-19.

All these films included three critical messages on Covid-19 precautions, i.e., "Wear Mask, Follow Physical Distancing, and Maintain Hand Hygiene"; and COVID-19 Pledge of Jan Andolan Campaign has been shared with the Chief Secretaries/Relief Commissioner of State Governments/UTs.

- ii) In addition to above, 21 Print Creatives (17 in English and 4 in Hindi) on the various topics of Covid-19 were also produced and uploaded in social media and NDMA's website for further dissemination and themes of which are as under:

17 in English

- Ensure respiratory hygiene & ensure hand hygiene; (Steps to wash your hands)

- Do's and Don'ts on Corona virus;
- Precautions for play grounds;
- Precautions for students
- What school authorities should do;
- What schools should promote at individual level;
- When to use face mask? (Recommendations for using a face mask)
- Precautions to be taken in the class;
- If you get infected do not run away;
- Maintain respiratory hygiene when in public places (Always use a face mask when you feel ill)
- What you need to know about Corona virus?
- Covid-19- Symptoms and preventions;
- Reduce the risk of Corona virus infection by following the important precautions;
- Precautions to take after coronavirus test
- Why to wear a mask during a meeting
- Covid-19 precautions to take during heat wave
- Covid-19 precautions to take during festive season

4 in Hindi

- Corona virus se bachne ke sahi tareeke
- Corona virus se bachne ke saral upay
- Symptoms of coronavirus

- Precautions to take after coronavirus test

NDMA Social media campaigns on covid-19

- The three key messages on Covid-19 appropriate behaviour in every post possible;
- Mental health awareness campaign;
- Covid-19 do's and don'ts during festive season;
- When I wear mask campaign;
- Posts to discourage people from removing mask while talking;
- Posts encouraging people to get vaccinated - don't delay, don't heed to rumours, what to do after vaccination, vaccine is safe, get vaccinated to end coronavirus;
- 'Dawai bhi, kadai bhi' campaign.

NDMA E-Newsletter and blog

6.36 A digital monthly magazine and an official blog, both named "Aapda Samvaad", were published for informing the stakeholders about major activities of NDMA, SDMAs, success stories on DRR, expert interviews, etc. The magazine is regularly published and 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

6.37 NDMA has supplemented the efforts of Ministry of Health and Family Welfare (MoHFW) in the fight against

Covid-19 since beginning with social media campaigns viz. Jan Andolan, "There should be no carelessness until there is a cure", 'Dawai bhi Kadai bhi', #Unite2FightCorona, #WearYourMask; #MentalHealthAwareness; #WhenIWearAMask; follow COVID appropriate behaviour, message to emphasize that people should quarantine themselves at Home while waiting for their test results, dedicated COVID-19 campaign highlighting the do's and don'ts to follow during the festive and wedding season, Covid-19 Do's and Don'ts for the Hearing Impaired. Besides, various films highlighting COVID-19 appropriate behaviour were shared through social media from time to time.

6.38 Awareness campaigns were launched on social media to spread the messages related to prevention, mitigation and preparedness of disasters, before and during disasters. These social media campaigns comprised Do's and Don'ts and FAQs pertaining to heat wave, flood, cold wave, urban flood, earthquake, CBRN emergencies, first aid, lightning, fire safety and cyclone and videos and social media cards related to these disasters. Hash tags such as #Covid-19, #heatwave, #earthquake, #floods, #urbanflood, #lightning, #coldwave, #avalanche, #cyclone (in particular #CycloneNivar, #CycloneAlert, #CycloneBurevi, #CycloneNisarga, #CycloneAmphan, #CyclonicStorm) and #firesafety, #ForestFire, #FirstAid, #PreventMonsoonIllness, #Landslide etc. were used. These hash tags helped NDMA's social media channels gain greater online audience engagement.

6.39 NDMA is also running miscellaneous

campaigns which involve updating links of news related to disaster management, NDMA blog and Aapda Samvaad (E-Magazine). Updates on disaster awareness are shared widely on social media platforms. At the time of crisis, NDMA provides online assistance through social media and helps the affected communities.

6.40 Since the month of March 2021, social media campaign on 'vaccination' is being run on Twitter and Facebook using messages encouraging people to get vaccinated.

6.41 Meetings and Conferences conducted by NDMA were also posted on Twitter and Facebook.

6.42 NDMA has prepared 09 booklets (uploaded on NDMA's website) on various disasters highlighting major activities, achievements, innovations, etc. taken by the Govt. of India. Dedicated campaigns were also run on social media publicising these booklets from 12/02/2021 to 01/03/2021.

6.43 First Aid for Students and Teachers (FAST): Campaign to promote the mobile app (FAST) was run from on social media from 01/03/2021 to 16/03/2021.

Twitter Report

- Followers as on 31st March, 2021 : 2,51,306
- Followers as on 1st January, 2020 : 1,48,352
- Number of followers increased : 1,02,954

Animation Films on various disasters

6.44 NDMA has placed order for production of 40 Animation Films on various disasters for awareness generation and dissemination through social media and to States for maximum outreach among masses. Out of 40 films, 39 Animation Films have been prepared. One has been rejected. These are being disseminated through social media. These animation films were also shared with the Chief Secretaries/Relief Commissioner of State Governments/UTs for awareness generation in local language.

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 the 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 2020 to March, 2021 is as follows:

(Rs. in Crores)

Name of the project	B.E 2020-21	RE 2020-21	FE 2020-21 +Re-app. From MHA	Exp. up to 31.03.2021
National Cyclone Risk Mitigation Project (NCRMP) with World Bank Assistance	296.27	99.43	81.58	75.80
Other Disaster Management Projects - (ODMP)	41.81	39.34	34.86	32.02
Establishment Charges	38.37	39.48	42.36	39.00

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

(Rs. in Crores)

Grant No. 46 MHA					
MH	Scheme	B.E. 20-21	RE 20-21	FE 20-21 / RE appropriation from MHA	Exp. up to 31.3.2021
2245	ODMP	13.08	18.96	14.74	11.90
3601	ODMP (Release to State Govt.	26.00	20.12	20.12	20.12
3602	Release to UT w/o Legis)	2.73	0.26	0.00	0.00
	Total a)	41.81	39.34	34.86	32.02
2245	NCRMP (Est. Charges)	26.27	24.43	11.26	5.48
3601	NCRMP (GIA)	270.00	75.00	70.32	70.32
	Total b)	296.27	99.43	81.58	75.80
2245	Establishment Charges	38.37	39.48	42.36	39.00
	Total (c)	38.37	39.48	42.36	39.00
	Grand Total NDMA	376.45	178.25	158.80	146.82

Annexure I

COMPOSITION OF NDMA

Present Composition

1.	Hon'ble Prime Minister of India	Chairperson
2.	Shri Sanjeeva Kumar	Member Secretary (Since 27.01.2021)
3.	Shri G.V.V. Sarma	Member Secretary (upto 27. 01.2021)
4.	Shri Kamal Kishore	Member (Since 16.02.2015)
5.	Lt Gen (Retd) Syed Ata Hasnain, PVSM, UYSM, AVSM, SM, VSM & BAR	Member (Since 21.02.2020)
6.	Shri Rajendra Singh	Member (Since 20.02.2020)
7.	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
2.	Shri G. V. V. Sarma, Member Secretary (Upto 27.01.2021)
3.	Dr. Pradeep Kumar, Project Director (upto 31.12.2020)
4.	Sh. Ravinesh Kumar, Financial Advisor
5.	Dr. V. Thiruppugazh, Additional Secretary (Policy & Planning)
6.	Shri Ramesh Kumar Ganta, Joint Secretary (Admn.)
7.	Sh. Sandeep Poundrik, Advisor (Mitigation) (upto 04.01.2020)
8.	Brig Ajay Gangwar, Advisor (Ops. & Comn.)
9.	Ms Sreyasi Chaudhuri, Project Director, NCRMP

