Guidelines on Disaster Management Exercises (DMEx)

October 2024

NATIONAL DISASTER MANAGEMENT AUTHORITY (NDMA)
GOVERNMENT OF INDIA

सत्यमेव जयते

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NATIONAL DISASTER MANAGEMENT AUTHORITY (NDMA)
Government of India
NDMA Bhawan, A-1, Safdarjung Enclave,
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राष्ट्रीय आपदा प्रबंधन प्राधिकरण
National Disaster Management Authority
भारत सरकार
Government of India

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Foreword

Rapid urbanisation, population growth, economic development, climate change and environmental degradation have resulted in frequent and intense disasters. These factors have contributed to an increase in vulnerable population and infrastructure, multiplying the impact of disasters manifold. Due to the enhanced footprints of disasters, the Centre and State Governments along with the various local governing bodies are focusing on Disaster Risk Reduction relentlessly.

It is universally accepted that the pre-disaster planning and preparedness reduces disaster risk and its impact. DM policies, plans and procedures constitute a road map that is prepared during normal times for achieving reduction in disaster risks. It is however not prudent to wait for disasters to gauge the efficacy of these policies, plans and procedures. Disaster Management Exercises (DMEx) play a crucial role of validating them leading to their strengthening and streamlining. These exercises make the stakeholders rehearse their plans and assess their capabilities to respond to disasters effectively and in a timely manner. They assist in discovering and then bridging gaps in plans, procedures, resources and capabilities.

Disasters require a coordinated and unified response by all the stakeholders. The multitude of stakeholder ministries, departments and agencies make this process complex and difficult. The 'whole-of-government' has to come together to address the needs of the affected communities during and after the disaster. There is a need for all stakeholders to fully understand each other's roles, responsibilities and capabilities so that there is greater cohesion in response to disasters. Disaster Management Exercises assist in reinforcing this knowledge, practising in a realistic environment and promoting inter-agency coordination and cooperation.

NDMA has always been in the forefront of this important aspect of DRR. It has facilitated, coordinated as well as conducted numerous city, district and state level Disaster Management Exercises on various hazards like floods, industrial and chemical hazards, cyclones, earthquakes etc. NDMA has also organised and coordinated several international DMEx involving multiple countries. The DMEx have helped create a culture of preparedness among all stakeholders, raise public awareness and community participation. These guidelines have been prepared to augment this effort exponentially by enabling disaster managers at all levels to design, coordinate and conduct their own exercises. This is a simple to understand reference document covering all aspects of Disaster Management Exercises which will make the process of conduct of any type of Disaster Management Exercise easy and systematic.

We wish to acknowledge the efforts of the Operations & Communication Division and support of other divisions in formulation of these Guidelines. We also place on record, our sincere appreciation for efforts and hard work put in by Brig Ajay Gangwar (Retd), Senior Consultant (ME) and former Advisor (Ops & Comn), in preparing these guidelines.

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Abbreviations

AGD	Agriculture Department
AHD	Animal Husbandry Department
ARHD	Archaeology Department
BMTPC	Building Materials and Technology Promotion Council
CAPF	Central Armed Police Force
CD	Civil Defence
CDEF	Civil Defence
CSO	Civil Society Organisation
CUD	Culture Department
DDMA	DIstrict Disaster Management Authority
DEOC	District Emergency Operations Centre
DM	Disaster Management
DMEx	Disaster Management Exercise
DMP	Disaster Management Plan
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DISCOM	Power Distribution Companies
DRD	Department of Rural Development
EFD	Forest and Environment Department
EOC	Emergency Operations Centre
F&ES	Fire & Emergency Services
GSI	Geological Survey of India
HRVA	Hazard Risk Vulnerability Analysis
HFWD	Health & Family Welfare Department
HUDCO	Housing and Urban Development Corporation Ltd
INCOIS	Indian National Centre for Ocean Information Services
IPRD	Information and Public Relations Department
IC	Incident Commander
IDRN	India Disaster Resource Network
IMD	Indian Meteorological Department
IRS	Incident Response System
IRT	Incident Response Team
LSC	Logistic Section Chief
MAFW	Ministry of Agriculture and Farmers Welfare

MCAFPD	Ministry of Consumer Affairs, Food and Public Distribution
MCOM	Ministry of Communications
MDWS	Ministry of Drinking Water and Sanitation
MFAHD	Ministry of Fisheries, Animal Husbandry and Dairying
MFPI	Ministry of Food Processing Industries
MHA	Ministry of Home Affairs
MHFW	Ministry of Health and Family Welfare
MHUA	Ministry of Housing and Urban Affairs
MLBE	Ministry of Labour and Employment
MNRE	Ministry of New and Renewable Energy
MOCI	Ministry of Commerce and Industry
MOCU	Ministry of Culture
MOD	Ministry of Defence
MOEFCC	Ministry of Environment, Forest and Climate Change
MOES	Ministry of Earth Sciences
MOIB	Ministry of Information and Broadcasting
MOJS	Ministry of Jal Shakti
MOLJ	Ministry of Law and Justice
MOPR	Ministry of Panchayati Raj
MOR	Ministry of Railways
MORD	Ministry of Rural Development
MOSH	Ministry of Shipping
MOST	Ministry of Science and Technology
MPNG	Ministry of Petroleum and Natural Gas
MPWR	Ministry of Power
MRTH	Ministry of Road Transport and Highways
MSJE	Ministry of Social Justice and Empowerment
MTOU	Ministry of Tourism
ME	Mock Exercise
MHA	Ministry of Home Affairs
NCC	National Cadet Corps
NDMA	National Disaster Management Authority
NDRF	National Disaster Response Force
NGO	Non Government Organisation
NIDM	National Institute of Disaster Management
NHAI	National Highway Authority of India
NRSC	National Remote Sensing Centre
OSC	Operations Section Chief

PRIs	Panchayati Raj Institutions
PSC	Planning Section Chief
RD	Revenue Development
RO	Responsible Officer
SASE	Snow and Avalanche Study Establishment
SEB	State Electricity Board
SPWD	State Public Works Department
SDMA	State Disaster Management Authority
SDRF	State Disaster Response Force
SEOC	State Emergency Operations Centre
TTEx	Tabletop Exercise
TOD	Tourism Department
TRAD	Transport Department
UDD	Urban Development Department
ULB	Urban Local Bodies

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Executive Summary

DM Plans are made during normal times as part of the preparation against disasters. They are instrumental in understanding risks and outlining risk mitigation strategies before, during and after disasters. These strategies are dynamic and change with shifts in risk and vulnerabilities. They need to be regularly tested and validated for effectiveness.

DM Plans also outline the role and responsibilities of various stakeholders. They lay down actions and procedures for various contingencies. These too need to be updated periodically.

The capabilities of the stakeholders too evolve with time and have to keep pace with the current disaster risks. An evaluation of the response capabilities will dictate the training needs of different stakeholders. Identification of the gaps in essential resources will lead to targeted capacity building of stake holders.

For effective response, senior leadership needs to practise decision making under pressure and the various stakeholders have to practise their skills. This has to be done progressively and in a realistic environment before a disaster strikes.

Disaster Management Exercises (DMEx) are an effective and time tested tool for all of the above. They need to be conducted regularly to continuously improve our DM policies, plans, procedures, capabilities and capacity for an overall Disaster Risk Reduction.

This guideline is a reference document that provides a common framework and uniform methodology for conduct of DMEx. The methodology is adaptable to requirements of different organisations and entities. The guideline is aimed at facilitating planning, design and conduct of DMEx by disaster managers at all levels.

DMEx are broadly of two types: discussion and action based exercises. Symposium and Tabletop Exercise are discussion based exercises while Mock Drill and Mock Exercise are action based exercises. These exercises fulfil different training needs and vary in complexity in planning and conduct.

Any DMEx may be divided into four phases: Planning, Preparation, Conduct and Documentation & Follow up actions. These guidelines cover these phases as separate chapters in sufficient detail.

Structure of the Guideline

These Guidelines comprise eleven chapters:

Chapter 1 - Introduction: This chapter enumerates the vision, scope and objectives of this Guideline. It introduces the subject of Disaster Management Exercises (DMEx) and its importance in capacity building during the preparatory phase of DM Cycle. It will cover the evolution of DMEx in India and the present status in the country. In the end this chapter outlines the structure of this guideline and overview of subsequent chapters.

Chapter 2 - Hazard Risk Vulnerability Analysis (HRVA) and DM Plans: In this chapter, basics of HRVA and DM Plans are covered along with their importance in risk analysis and mitigation. This is important as the DMEx needs to be designed realistically as per actual vulnerabilities of the State/ organisation. Further, the response being rehearsed or tested during the DMEx must be predicated on the existing DM Plan.

Chapter 3 - Incident Response System (IRS): The disaster response mechanism in India is based upon the Incident Response System (IRS). DM authorities at various levels are required to notify the IRS for their jurisdiction. DMEx are designed based on the framework of IRS to enable better understanding of this response mechanism and coordination amongst various appointments. This chapter covers the basics of IRS.

Chapter 4 - Emergency Operations Centre (EOC): EOC is the hub from which various activities in different phases of DM Cycle are monitored, directed and coordinated. An efficient and a well administered EOC is a force multiplier during response and recovery stages. Hence, evaluating the preparedness of EOC is an important part of DMExs. This chapter covers the organisation, functions, staffing norms and best practices in respect of EOCs and its linkage to the Incident Response System.

Chapter 5 - Types, Scale and Scope of Mock Exercises: This chapter enumerates various types of DMEx with comparative strengths and weaknesses. Scale and scope of Table Top Exercises (TTEx) and Field Exercises has been explained in detail. Various phases of DMEx have been introduced. Details of these phases shall be covered in subsequent chapters.

Chapter 6 - Planning: DMEx are complex events involving multiple stakeholders. Hence they require detailed planning for success and smooth execution. The planning phase of a DM Exercise has been divided into smaller steps which shall be described in this chapter.

Chapter 7 - Preparation: Large scale DMEx involve number of ministries, departments and stakeholders and proper preparation shall go a long way in successful conduct of these exercises. Briefings, coordination and logistics are the main activities in this phase of the DMEx. The preparatory actions required to be completed before the conduct of the DMEx are enumerated in this chapter.

Chapter 8 - Conduct: This chapter describes the conduct phase of the DM Exercise. The steps in conduct of both the discussion based exercises and the action based exercises are the same. Differences in conduct for different types of DMEx have been highlighted while describing each step of the conduct phase. Evaluation of the conduct of DMEx and performance of various participants and emergency support functionaries is a continuous process and is covered in this chapter. Activities like Hot wash and Debriefing conducted before the close of any exercise are enumerated here.

Chapter 9 - Documentation and Follow up Actions: This chapter covers the follow up activities by the Exercise Management Team and DM Authorities after the exercise is closed. Exercise Report and Improvement Action Plan are important outputs of this post exercise phase.

Chapter 10 - Media and Public Awareness: This chapter outlines the crucial role that media and public awareness play in the context of DMEx and Disaster Risk Reduction (DRR).

Chapter 11 - Resources: This chapter lists out online resources for reference and further studies.

Annexure I - Broad Methodology of NDMA Exercises

Annexure II - Sample IRS Notifications

Annexure III - Emergency Support Functions and Responsibilities

Annexure IV - Sample Participant Feedback Form

Annexure V - Sample Exercise Evaluation Form

CHAPTER: 1

INTRODUCTION

1.1 Overview

This chapter enumerates the vision, scope and objectives of this Guideline. It introduces the subject of Disaster Management Exercises (DMEx) and its importance in capacity building during the preparatory phase of the Disaster Management Cycle. It covers the evolution of DMEx in India, it's current status and outlines the statutory provisions for conduct of DMEx in the country.

1.2 Vision

To promote a culture of preparedness and capacity building for dealing with threatening disaster situations or disasters in the country through DMEx.

1.3 Scope

Disaster response involves numerous stakeholders working with synergy and efficient deployment of limited resources. It is a complex process and needs extensive planning and coordination that must be carried out in the pre-disaster phase. DMEx is an important tool to achieve the same. It affords an opportunity to test preparedness for effective response by rehearsing DM Plans and SOPs. It also helps spread requisite public awareness and ensures community participation.

These guidelines provide a framework to plan, design and conduct DMEx at various levels with a view to improve preparedness and response capability. It intends to be a reference document for DM authorities and other stakeholders to ensure uniformity in conduct of DMEx.

1.4 Objectives

The broad objectives set forth for these Guidelines are:

- To understand the importance, types and applicability of DMEx.
- To assist DM managers at all levels to plan, design and conduct DMEx.
- To institute a common framework and uniform methodology for the conduct of DMEx while remaining adaptable to needs of diverse organisations in the country.
- Ensure that the lessons learnt during each DMEx are documented for overall improvement of capabilities.

- Ensure that the DMEx are conducted in an environment that is safe for all responders and community participants.
- Assist in continuous evaluation and improvement in DM Policies, Plans and Procedures.

1.5 Intended Audience

These guidelines are intended to primarily help organisations, both public and private, as well as individuals who are either responsible or involved in planning, coordination and or implementation of DM activities in India. This includes:

- Government officials from various DM authorities and other officials from relevant government departments having a role in DM in the country.
- Ministries, departments and organisations responsible for any of the Emergency Support Functions.
- NDRF and all SDRFs.
- All emergency responders including but not limited to Police, Armed Forces, Paramilitary Forces, Fire Fighters, Civil Defence (CD), Home Guards, Aapda Mitras and community volunteers.
- DM related Civil Society Organisations (CSOs) and Non-Governmental Organisations (NGOs).
- Community leaders.
- Public and private sector entities and other organisations vulnerable to disasters.

1.6 Disaster Management Exercises (DMEx)

Disaster Management Exercises (DMEx) are exercises in which a hypothetical disaster situation is projected to the participants depicting real life emergencies. The participants are expected to take decisions or actions based on the information given to them within the constraints of existing DM policies, plans and procedures.

The purpose of DMEx is to help prepare Communities and organisations to respond effectively to real disasters and emergencies. They help test and improve existing policies, plans, procedures and response capabilities. The DMEx also improves coordination amongst DM Authorities, responders and the community for better response during any disaster.

DMEx are known by different names in different literature such as emergency management exercises, emergency preparedness exercises or simulation exercises.

1.7 DM Cycle and DMExs

DMEx are a rehearsal of actual response to disasters. They are an important tool to test capacity and preparations for response to any disaster. DMEx happen during the Preparedness Phase of DM Cycle.

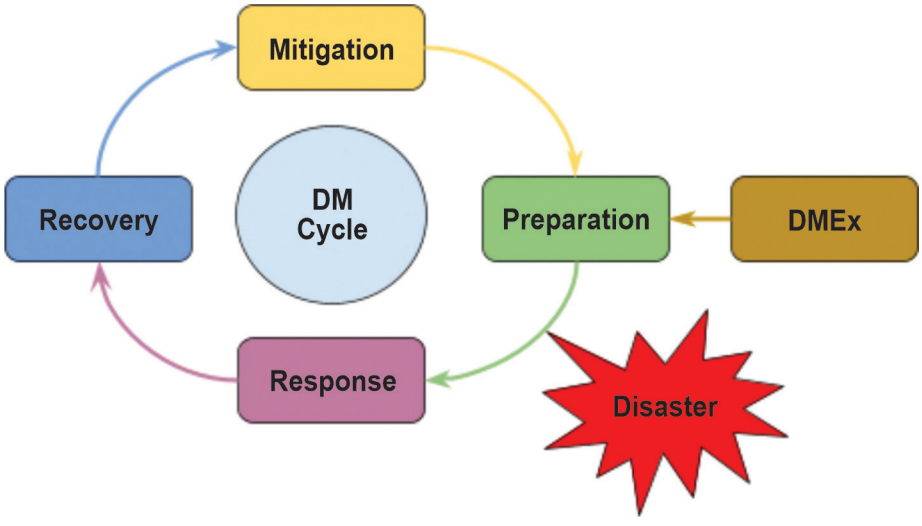


Figure 1.1: DM Cycle and DM Exercises

1.8 Importance and Need of DMExs

Preparedness activities are carried out in normal times before any disaster and the response activities are carried out in anticipation of an impending disaster and immediately after the occurrence of the disaster. The primary goal of response to a disaster is to act within the 'golden hour' to save lives, protect property, environment, and meet basic needs of humans and other living beings after the disaster. Its focus is on rescuing those affected and those likely to be affected by the disaster.

Effective, efficient, and timely response relies on adequate preparedness measures which include:

- Understanding hazards and risks.
- Development of policies, plans and procedures.
- Contingency planning.
- Plans for mobilisation of persons, equipment and supplies.
- Arrangements for inter agency coordination.
- Plans, preparations and practise for evacuation, search and rescue operations and medical assistance.
- Developing communication systems for use during disasters.
- Arrangements for early warning and public information.
- Training and building of individual, community and organisational capacity.

Response is carried out during periods of high stress in highly time-constrained situations with limited information and resources. For effective response, all the stakeholders need to have a

clear vision about hazards, its consequences, clarity on plans of action and must be well versed with their roles and responsibilities. To achieve this, stakeholders must train and practise all these measures during normal times. All the above plans, systems and arrangements made during the preparedness phase must be regularly tested and evaluated for effectiveness. Weaknesses and gaps thus identified must be addressed and corrected.

All of the above can be achieved through well designed and regular DMEx. DMEx is an important tool in training and capacity building.The broad need and purpose of DMEx is as follows:

- Practise implementation of plans and SOPs and evaluate their effectiveness.
- Test systems and arrangements for response to identify strengths and gaps.
- Assess adequacy of resources and capacities.
- Develop the knowledge and skills of responders.
- Clarify the roles and responsibilities of all the stakeholders.
- Evaluate and improve the decision making process.
- Improve inter agency coordination.
- Raise public awareness and prepare communities to face disasters.
- Comply with State legislations.
- Identify gaps, needs and solutions during emergency like situations.

1.9 Periodicity of the DMExs

The DMEx may be conducted as needed but the periodicity may not be less than once a year. For recurring or frequent hazards, DMEx should be scheduled before the onset of the season. For other hazards, DMEx should be conducted annually. DMEx are also advised to be conducted when following changes take place:

- Major revision of DM plans.
- After significant change in operational resources (e.g., policy, personnel, facilities, equipment etc.).
- Change of district/ state boundaries or demography.
- Disaster risk profile.
- Changes in the organisation structure and jurisdiction/ responsibilities.

1.10 Types of DMExs

The broad classification of DMEx is depicted in the diagram given below. Each of these types of exercises are covered in greater detail in chapter 5.

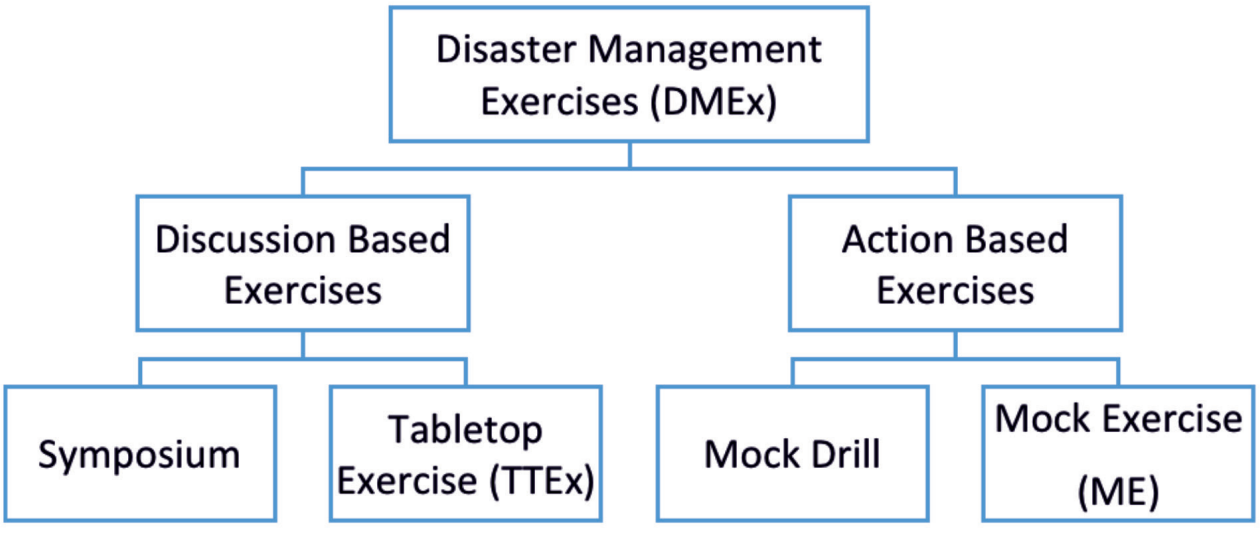


Figure 1.2: Classification of Disaster Management Exercises

1.11 Guiding Principles

The guiding principles in planning, design and conduct of DMEx are enumerated below:

- **Senior Leadership.** The DMEx must be visibly driven by senior leadership. This ensures that all the stakeholders understand the importance of the event and results in a wholesome and enthusiastic participation.
- **Realistic Scenarios.** The DMEx must be based on a realistic scenario based on Hazard Vulnerability Risk Analysis (HVRA) of the district/ state. This will make the process relatable to the community and all stakeholders…
- **Well defined Objectives.** The objectives of the DMEx must be well defined and quantifiable. They must be conveyed to the participants along with their role and responsibilities well in time to enable adequate preparation.
- **Progressive Approach.** The exercise program must be made of progressively complex exercises with increasing scope and scale over time and each exercise building upon the previous one.
- **Integration.** All the stakeholders/ participants that are required to function together during the response phase must participate together in the exercise for practising an integrated response. Even if some departments or Emergency Support Functions (ESF) cannot participate due to prior commitments or other administrative constraints, their representatives must attend as observers.
- **Inclusiveness.** As far as possible, all sections of the community must be included in the DMEx. Special care must be taken to include the vulnerable segments of the community like the elderly, disabled/ handicapped, economically backward persons, women and children.

- **Planning and Design.** The DMEx must be tailored to the learning and capacity building needs of the community as well as the DRR priorities of the Senior Leadership.
- **Preparatory Training Programs.** Preparatory community level training should be planned to maximise results. This could include training programs for schools and colleges, hospitals, bus and railway stations, malls and bazaars, economically weaker section (EWS) group housings and major residential colonies etc. Separate training programs dedicated for responders may also be considered. Organisations responsible for critical infrastructure like electricity, water supply, communications and other ESF could also be trained prior to the exercise.
- **Venue.** The venue for training, meetings and discussions as also sites for the action based exercises must be selected carefully based on their accessibility, capacity and safety considerations.
- **Common Framework.** The exercises conducted at various levels like the State, districts or department level must have a common framework for ease of implementation and learning.
- **Adaptability.** The organisers must be able to adapt the narratives / injects of the exercise depending on the performance of the participants and emerging situations during the exercise.
- **Safety Measures.** Adequate Safety measures must be put in place to make the exercise environment and activities safe for all the participants and organisers.
- **Evaluation Methodology.** A well defined evaluation methodology must be adopted to enable quantification of results and adequately highlight strengths and weaknesses. This will maximise the learning value of the DMEx.
- **Media.** Print, Broadcast and Internet Media must be leveraged to mobilise community, increase participation and spread awareness. Social media is a powerful tool for this purpose and must be used.
- **Documentation.** The activities, conduct, decisions, outcomes and performance of the participants must be adequately documented to preserve the lessons learnt for future reference.

1.12 Evolution of DMEx in India

DMEx, earlier called Emergency Management Exercises (EMEx), have been conducted informally at the local level for a long time. Earlier the scope of these exercises were limited and these were essentially in the form of seminars and drills. They were not properly documented and no formal record is readily available today.

It was around 2003, that the various Civil Society Organizations (CSOs) started taking initiative in preparing the local communities for better response during disasters. They were supported by academic institutions and international organisations. The process gained impetus with the

promulgation of the DM Act 2005 and the Government entities started to lead the effort.

The Municipal Corporation of Mumbai conducted the Mumbai Emergency Management Exercise from 3rd to 9th November 2008 (MEMEx-2008) to strengthen the urban disaster response in Mumbai. Many institutes, hospitals and organisations participated in the exercise under the leadership of Municipal Corporation of Mumbai. The MEMEx-2008 consisted of a series of training and workshops followed by a tabletop exercise (TTEx) and field drills. Although the scale and scope of the DMEx today has increased manifold, they follow a similar methodology.

National Disaster Management Authority (NDMA) helped coordinate the second major DM Exercise in India which was conducted in 2011 from 4th to 8th August in Chennai. It was called the Chennai Emergency Management Exercise (CEMEx-2011). This path breaking DMEx was a multi-institutional Public Private Partnership effort which brought together a number of institutions and organisations like NDMA, Government of Tamil Nadu, Chennai City Corporation, UN DM Team, National Civil Defence College (NCDC), All India Disaster Mitigation Institute Ahmedabad, Red Cross India, numerous Government and private hospitals, Fire and Emergency Services, Police, NDRF, Coast Guard, many NGOs, number of schools and many more. Some of the training tracks included in the DMEx were Humanitarian Response, School Safety, Emergency Medical Services, Hospital Emergency Management, Disaster Life Support, Public Health, Disaster Communications, First Responders Course and Industrial & Chemical Disaster Preparedness. The TTEx had over 600 participants. The Disaster Drill simulated a stampede during a football match. The scenario was made realistic with the help of over 200 junior artists and makeup men from the Film Employees Federation Chennai. The drill had close to 700 participants.

Encouraged by the success of MEMEx-2008 and CEMEx-2011, many SDMA expressed interest in the conduct of similar exercises and consequently NDMA assisted in the conduct of following DMEx in quick succession:

- Guwahati Emergency Management Exercise (GEMEx), 2012
- Delhi Emergency Management Exercise (DEMEx), 2012
- Jorhat Emergency Management Exercise (JEMEx), 2013
- Silchar Emergency Management Exercise (SEMEx), 2013
- Dibrugarh Emergency Management Exercise (DiEMEx), 2014
- Nagaon Emergency Management Exercise (NEMEx), 2014

Some of the salient features of these DMEx were:

- Long drawn preparations preceded these exercises which sometimes extended to over a year.
- The duration of the exercise was 5 to 7 days.

- Participation by a large number of stakeholders spanning diverse sectors.
- Widespread interest in acquisition of emergency management skills especially by Government officials, Health Professionals, emergency responders, NGOs, CSOs and the local community at large.
- Multi-agency cooperation and convergence of local, national and international DM specialists.
- Community awareness and training got unprecedented impetus.
- Response capabilities were tested. Strengths and weaknesses were identified. This led to refining of DM Plans and improvement in overall capacity.

1.13 Present Status

While the State Governments, District administration, and other organisations conduct their own exercises independently as per their training calendars, NDMA and NDRF are regularly conducting State Level and District Level DMEx respectively.

Picture 1.1: State Level Mock Exercise in collaboration with NDMA

1.13.1 State Level DMEx Programme by NDMA

NDMA has been conducting DMEx for States and Union Territories (UTs) of India regularly for a number of years. The exercise is based on the State's primary hazard threat and practises a coherent response to multiple disaster events that are likely if the primary hazard threat

manifests. These exercises are part of a robust program that commences each year with the formulation of an annual calendar through a consultative process. The broad methodology of conduct of these exercises is covered at Annexure I.

1.13.1.1 DMEx during the COVID Pandemic

The COVID pandemic in 2020, imposed numerous restrictions on training activities, movement, and gatherings. It was not feasible to conduct DMEx in the normal form. The preparations for disasters in the country suffered. However, disasters like cyclones and floods continued to occur throwing up challenges to respond to such disasters in the backdrop of a worldwide pandemic. It was necessary that preparation and training of stakeholders continued to be able to address these disasters.

NDMA modified its methodology of conducting the DMEx with the States. The DMEx were now entirely conducted in online mode. It was not feasible to conduct mock drills or field exercises due to lockdown and other restrictions. Hence, TTEx were conducted and the participants were encouraged to join in the exercises virtually from their homes itself. Each of these TTEx were preceded by IRS training capsules. These virtual exercises were found to be extremely useful and NDMA conducted 35 State level exercises during the COVID pandemic phase. NDMA reverted to conducting physical exercises after September 2021.

1.13.2 District Level DMEx Programme by NDRF

In order to strengthen disaster preparedness in the country, the NDRF has been tasked with conducting DMEx in each district of the country at least once every three years for the following purposes:

- To ensure that every district can constitute field trained teams for disaster response.
- To test the efficacy of every district's DM plans and its preparedness component.
- To bring in greater cohesion and coordination amongst, and between, different stakeholders.

On the day of a district's DMEx, the Fire & Emergency Services (F&ES) of that district also conducts mock drills in 10 to 20 pre-identified schools in the district. This program commenced in the year 2020 and over 800 district level DMEx have been conducted so far by the NDRF under this program.

1.14 International DMEx

The Ministry of External Affairs and Ministry of Home Affairs together with the NDMA and the NDRF have conducted a number of international DM Exercises. Some of these are:

1.14.1 The South Asian Annual Disaster Management Exercise, 2015

South Asian countries agreement on Rapid Response to Natural Disasters was signed by the Member Countries in 2011 to enable joint response to disaster emergencies through concerted national efforts and intensified regional cooperation.

The South Asian Annual Disaster Management Exercise, 2015 or the SAADMEx was conducted from 23rd to 26th November 2015 at New Delhi. Experts and DM teams of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka attended the exercise.

The SAADMEx-2015 addressed the diverse strategic issues of a multi-national disaster relief operation to include Initial Response, Communication, Coordination Mechanism, Relief Management, Consular Assistance, Public Information and Media Coordination. The exercise focused on modalities of setting up a national on-site emergency command and control centre during a disaster along with the coordination and integration of international humanitarian support. The SAADMEx afforded an opportunity to the participating countries to understand and discuss each other's disaster response plans and capabilities.

Picture 1.2: Handling hazardous material

Picture 1.3: Search and rescue operations

1.14.2 BIMSTEC DMEx 2017

The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a regional collaboration of seven Member States i.e. Bangladesh, Bhutan, India, Nepal, Sri Lanka, from South Asia and Myanmar and Thailand from South East Asia. This Cooperation came into existence on 6th June, 1997 through the Bangkok declaration and provides a platform for reinforcement of relations among Member States and establishing Inter-Regional Cooperation among South & South East Asian Countries.

As the member countries have similar vulnerability to Geological, Hydrological and Climatological disasters, BIMSTEC has undertaken several initiatives in recent years to institutionalise and strengthen regional cooperation in the area of DRR.

The First BIMSTEC Disaster Management Exercise was held in New Delhi, India on 10-13 October 2017. A total number of 19 representatives from each of the seven Member States participated in the Exercise. The main Exercise consisted of three components:

- Tabletop Exercise (TTEx);
- Field Training Exercises (FTEx) on Earthquake and Flood; and
- After Action Review (AAR).

This Exercise was a platform for sharing Best Practices on various aspects of Disaster Risk Reduction (DRR) as well as strengthening regional response and coordination for Disaster Management among the BIMSTEC member countries.

Picture 1.4: Search and rescue during simulated earthquake

Picture 1.5: Search and rescue during simulated Floods

1.14.3 Shanghai Cooperation Organization Joint Exercise on Urban Earthquake Search & Rescue, 2019

Shanghai Cooperation Organization (SCO) Joint Urban Earthquake Search & Rescue Exercise (SCOJtEx), 2019 was conducted from 4-7 November 2019 at New Delhi. All 08 member countries namely China, India, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Tajikistan and Uzbekistan participated in this exercise.The four day long simulation exercise was conducted as per the International Search & Rescue Advisory Group's (INSARAG) methodology & guidelines.

Picture 1.6: Participants of the SCO Joint Urban Earthquake Search and Rescue Exercise, 2019

The main focus of the Joint Exercise was to test the region's preparedness and resilience towards effective activation of Inter- governmental interaction for immediate response during disasters in any SCO region.

During the exercise, deployment of Urban Search & Rescue Teams at National & International Level, functioning of Emergency Medical Teams (EMT), establishment of On-Site Operations Coordination Centre (OSOCC) and Emergency Operation Centre (EOC) along with coordination and mechanism with Local Emergency Management Authority (LEMA) was practised.

Preparatory meeting for this exercise was held in November, 2018. Further, a Joint EXCON meeting cum training as a precursor event to the main exercise was conducted from 6-8 February, 2019 in New Delhi.

1.14.4 BIMSTEC DMEx 2020

The Second BIMSTEC Disaster Management Exercise was held in Odisha, India on 11-14 February 2020. A total number of 80 delegates from five member countries namely Bangladesh, India, Myanmar, Sri Lanka and Nepal participated in the exercise.

The 2nd BIMSTEC DMEx focused on emergency response in cultural heritage sites. The complete exercise consisted of a Tabletop Exercise (TTEx) on earthquake scenario, Field Training Exercises (FTXs) on flood scenario and an After-Action Review (AAR).

The Tabletop Exercise provided participants an opportunity to review and discuss disaster response plans and share best practices being followed in their respective countries.

For the Field Training Exercise on flood scenario, a mock village and a mock heritage site (Konark Sun Temple) were created to depict flooded localities. The rescue teams of various member nations responded as per the given situations and demonstrated timely response using latest flood rescue equipment.

Picture 1.7: Mock Heritage Site

Picture 1.8: Mock village submerged in flood water

The exercise provided an opportunity to the participants to share the best practices being followed by them while responding to a situation in heritage sites which is affected by the disaster.

The exercise was also attended by the observers from various international agencies like UNDP, INSARAG & ICCROM, national observers from SAARC DM Centre, INTACH & ASI and representatives from other stakeholders like IMD, NDMA, INCOIS, CWC, AQCS, Civil Defense, Fire Services & the BIMSTEC Secretariat.

1.15 The Legal Mandate

The conduct of regular DMEx is mandated by the DM Act, 2005 and other DM mechanisms in the country. Some references to these mandates are enumerated below.

1.15.1 The DM (DM) Act, 2005

The DM Act, 2005, lays down the institutional and coordination mechanisms at the National, State, District and Local Level along with powers, functions and responsibilities of various entities and bodies responsible for DM in the country. NDMA and SDMAs have been tasked to coordinate the enforcement and implementation of the Policies and Plans at the Centre and State levels respectively.

The following powers and functions of the National Executive Committee (NEC), given at Section 10 of the DM Act 2005, are relevant to the conduct of DMEx in the country:

- **Sub-section (2)(h):** Monitor, coordinate and give directions regarding the mitigation and preparedness measures to be taken by different Ministries or Departments and agencies of the Government;
- **Sub-section (2)(i):** Evaluate the preparedness at all government levels for the purpose of responding to any threatening disaster situation or disaster and give directions, where necessary for enhancing such preparedness;
- **Sub-section (2)(j):** Plan and coordinate specialised DM training programme for different levels of officers, employees and voluntary rescue workers;
- **Sub-section (2)(p):** Promote general education and awareness in relation to DM;

The following powers and functions of the State Executive Committee (SEC), given at Section 22 of the DM Act 2005, are relevant to the conduct of DMEx within the State:

- **Sub-section (2)(f):** Evaluate preparedness at all governmental or non-governmental levels to respond to any threatening disaster situation or disaster and give directions, where necessary, for enhancing such preparedness;

1. Section 7.5.1, National Policy on Disaster Management, 2009
2. Section 5.2.10, National Policy on Disaster Management, 2009

- **Sub-section (2)(i):** Promote general education, awareness and community training in regard to the forms of disasters to which different parts of the state are vulnerable and the measures that may be taken by such community to prevent the disaster, mitigate and respond to such disaster;

- **Sub-section (2)(p):** Ensure that communication systems are in order and the DM drills are carried out periodically;

The following powers and functions of the District Disaster Management Authority (DDMA), given at Section 30 of the DM Act 2005, are relevant to the conduct of DMEx within the State:

- **Sub-section (2)(xi):** Review the preparedness measures and give directions to the concerned departments at the district level or other concerned authorities were necessary for bringing the preparedness measures to the levels required for responding effectively to any disaster or threatening disaster situation;

- **Sub-section (2)(xxviii):** Ensure communication systems are in order, and DM drills are carried out periodically;

1.15.2 National Policy on Disaster Management (NPDM), 2009

As per the NPDM 2009, all Central Ministries, State Governments, District Authorities and other stakeholders are required to prepare Standard Operating Procedures (SOPs) in consonance with the National and State DM Plans. SOPs need to be prepared for all DM activities and emergency support functions like search and rescue, medical assistance and casualty management, evacuation, restoration of essential services, communication at disaster sites, provision of relief supplies, management of relief camps, deployment of Central resources, etc.

The NPDM elaborates that the efficacy of plans and Standard Operating Procedures (SOPs) are tested and refined through training, seminars, simulations and mock drills. The National Disaster Management Authority (NDMA) is required to assist the States/UTs in these areas and also conduct mock drills in different parts of the country. State and District authorities are encouraged to generate a culture of preparedness and quick response. They must plan DMEx for various types of disasters in collaboration with NDMA to enhance the response level of various stakeholders.

1.15.3 National Disaster Management Plan (NDMP) 2019

The NDMP is cognizant of the fact that regular maintenance is critical to ensure the relevance and effectiveness of the DM plans and devotes an entire chapter on the same. Evaluating the effectiveness of plans involves a combination of training events, exercises, and real-world incidents to determine whether the plan led to a successful response. In this way, the emergency preparedness exercises become an integral part of the planning process. The training events, mock drills and exercises are crucial to evaluating the operational aspects of the plan, rectifying gaps, and improving the efficiency of the plan.

On the subject of 'Training and Drills', the NDMP 2019 specifically states that,

"...Each nodal agency for DM must hold, in accordance with a mandatory timetable, training workshops with regular mock drills, at least twice a year. Such programs are crucial to ensure full preparedness and to maintain operational readiness of the disaster response operation teams, institutional mechanisms, and the equipment. Mock drills and training must be organised to test their readiness to deploy within the shortest possible time following the activation of a disaster response. They shall be conducted in a manner like that of the drills carried out by fire-fighting departments or army units. These workshops and drills must be held at the pre-designated locations or base camps under the guidance of the designated incident commanders and associated departmental heads. The objective of all these training and drills would be to both familiarise the teams with the DMP and to increase their operational efficiencies..."

Capacity building is an important thematic area of Disaster Risk Resilience (DRR)and under this theme the NDMP 2019 identifies Mock drills/ exercises to be an important sub-theme. NDMP 2019 goes on to tabulate the responsibilities of DM authorities and other entities for various disasters under different sub-themes. It directs the DM authorities and organisations at the Centre to promote planning and execution of emergency drills by all ministries and in all States/UTs. This is a recurrent periodic activity. NDMP 2019 also directs the State authorities and organisations to carry out joint planning and execution of emergency drills on a regular basis.

1.15.4 Sendai Framework for Disaster Risk Reduction

The Sendai Framework for Disaster Risk Reduction (SFDRR) 2015–2030 was adopted at the Third United Nations World Conference on Disaster Risk Reduction, held from 14 to 18 March 2015 in Sendai, Miyagi, Japan.

SFDRR Priority-4 (Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction) highlights the need to further strengthen disaster preparedness for response, take action in anticipation of events, integrate disaster risk reduction in response preparedness and ensure that capacities are in place for effective response and recovery at all levels. One of the steps towards this is to promote regular disaster preparedness, response and recovery exercises, including evacuation drills, training and the establishment of area-based support systems, with a view to ensuring rapid and effective response to disasters.

CHAPTER: 2

HAZARD RISK VULNERABILITY ANALYSIS (HRVA) AND DM PLAN (DMP)

2.1 Overview

In this chapter, basics of Hazard Risk Vulnerability Analysis (HRVA) and DM Plans (DMP) are covered along with their correlation to Disaster Risk Management (DRM). This is important as the DM exercise needs to be designed realistically around actual vulnerabilities of the State/ organisation. Further, the response being rehearsed or tested during the DMEx must be predicated on the existing DM Plan.

2.2 Introduction

One of the priorities for action of the Sendai Framework for Disaster Risk Reduction (SFDRR) is understanding disaster risk. Policies and practices for disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be leveraged for the purpose of pre-disaster risk assessment, for prevention and mitigation and for the development and implementation of appropriate preparedness and effective response to disasters.

Some essential definitions are as follows:

2.2.1 Disaster Risk

Disaster risk is expressed as the likelihood of loss of life, injury or destruction and damage from a disaster in a given period of time. Disaster risk is widely recognized as the consequence of the interaction between a hazard and the characteristics that make people and places vulnerable and exposed. Hazard, vulnerability and exposure are influenced by a number of risk drivers, including poverty and inequality, badly planned and managed urban and regional development, climate change and environmental degradation.

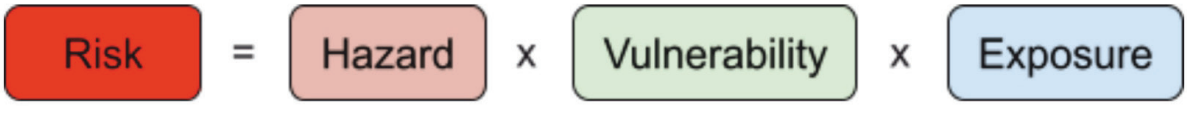


Figure 2.1: Relationship of disaster risk to hazard, vulnerability and exposure

3. Sendai Framework for Disaster Risk Reduction
4. UNDRR Terminology, 2017
5. UNDRR Global Assessment Report, 2015

The Risk is directly proportional to Hazard, Vulnerability and Exposure. It is inversely proportional to capacity. Better capacity of communities reduces disaster risk.

2.2.2 Hazard

A hazard is a process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation. Hazards may be natural, anthropogenic or socionatural in origin. Each hazard is characterised by its location, intensity or magnitude, frequency and probability.

2.2.3 Vulnerability

The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.

2.2.4 Exposure

Exposure is the situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas.

2.2.5 Capacity

Capacity is the combination of all the strengths, attributes and resources available within an organisation, community or society to manage and reduce disaster risks and strengthen resilience. Capacity may include infrastructure, institutions, human knowledge & skills, and collective attributes such as social relationships, leadership and management.

2.2.6 Preparedness

Preparedness is the knowledge and capacities developed by governments, response and recovery organisations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters.

Preparedness is based on a sound analysis of disaster risks and good linkages with early warning systems, and includes such activities as contingency planning, the stockpiling of equipment and supplies, the development of arrangements for coordination, evacuation and public information, and associated training and field exercises. These must be supported by formal institutional, legal and budgetary capacities.

2.3 HRVA, DMP and DMEx

The steps taken to reduce disaster risks of the State, the District or any Organisation is called Disaster Risk Management (DRM). The first step in doing so is to identify probable hazards and its vulnerability and exposure. This process is called HRVA.

The next step is to review existing preparedness level and capacity and identify measures to address the gaps. A DMP is drawn up to formalise arrangements for early warning, response and recovery from disasters. The DMP is a comprehensive document that also includes:

- Measures for prevention of disasters and mitigation of their effects.
- Integration of mitigation measures in development plans.
- Measures for effective preparation and capacity building.
- Roles and responsibilities of different stakeholders, departments and Emergency Support Functions.
- Relief measures.
- Measures for dissemination of information to the public.

The DMP is a dynamic document that needs periodic testing, review and updating. Disaster management exercises play a central role in stress testing of the DMP and various measures and procedures contained therein.

It thus emerges that one of the prerequisites for conduct of an effective DMEx is the existence of a DMP. Further, the organisers and the Exercise Management Team (EMT) of the DMEx must be fully conversant with the HRVA of the State, District or the Organisation where the exercise has to be conducted. The exercise needs to be designed for the identified hazards and probable scenarios that could result from such hazards based on the vulnerability and the exposure.

2.4 Legal Mandate for DMP

The DM Act 2005 legislates that plans for DM shall be prepared at different levels as follows:

- National Disaster Management Plan - Section 11
- State Disaster Management Plan - Section 23
- District Disaster Management Plan - Section 31
- Ministries/ Departments of Government of India - Section 37
- Departments of the States - Section 40

Accordingly, the National Disaster Management Plan (NDMP) was prepared in 2016 and revised in 2019. It forms the basis of DMP for various ministries and departments of the Central Government and all States and Union Territories. The State DMP form the basis of departments of the State Government and the District DMP.

The DM Act 2005 broadly lists the contents of the DMP at various levels and the first requirement listed by it is to include the vulnerability of the State or the District to different forms of disasters. Thus, all DMP essentially begin with a HRVA and then the DMP enumerate measures and responsibilities for mitigation, preparedness and response.

2.5 Preparing of HRVA

The broad steps in preparation of the HRVA for a State or a district are:

- State profile;
- Identification and study of hazards;
- Vulnerability assessment;
- Capacity analysis; and
- Outcomes and recommendations;

2.5.1 State Profile

The essential components of the overall State profile are:

- **Administrative Profile.** Number of districts, tehsils, Blocks and villages along with details of Municipal Corporations;
- **Geographical Profile.** Details of land area, major distinct regions, rivers, mountains, deserts, coastline and names of neighbouring States;
- **Demography.** Details of rural and urban population, sex ratio, children population, population density and literacy;
- **Social Profile.** Details of castes and tribes, minorities and religion;
- **Economic Profile.** Details of GDP, Main occupations, income patterns, important sectors of economy like agriculture, industry, mining, shipping etc;
- **Climate.** Details of temp and rainfall patterns;

2.5.2 Identification and Study of Hazards

A hazard analysis will answer the following questions and result in a Hazard Risk Atlas with Hazard Risk Zonation Maps:

- What hazards can occur in the State?
- Likely frequency and magnitude of hazards;
- Seasonality of the hazards;
- Areas that these hazards will affect;
- Worst case damage scenarios with number of people and infrastructure likely to be affected;
- History of major disasters in the past;
- Exposure levels of various villages and cities that fall in multi hazard zones;

During the hazard analysis process, it is important to keep in mind that the hazard profile may change over time because of new mitigation measures, urbanisation and development activities that were not considered before.

2.5.3 Vulnerability Assessment

The vulnerability assessment would cover various social groups, infrastructure, properties, and environmental resources that are vulnerable to the impact of various hazards in the state. It should also cover major trends and forces of development that push people to live in unsafe conditions that lead to generation of new vulnerabilities; e.g. population growth, industrialization and environmental degradation. Hazard-wise list of vulnerable tehsils and villages may be included. The vulnerability assessment will cover the following essential elements:

- **Social.** Details of tribal population, underdeveloped areas, Population of children, the elderly and the disabled;
- **Structure.** Kucha and pucca housing details, State assets, critical infrastructure;
- **Economics.** Persons below poverty line, Migrant labourers, sectors of economy vulnerable to hazards, industrialisation;
- **Environment.** Deforestation, urbanisation, climate change affects, pollution, salinisation, soil erosion etc.;

2.5.4 Capacity Analysis

It should highlight the capabilities and availability of resources with the administration and stakeholders to enhance effectiveness of response and reduce disaster risks. Capacities could include institutions, finances, equipment, early warning systems and trained human resources to handle a variety of response & coordination functions.

The inventory of DM equipment as well as skilled human resources with each department and stakeholder institution including private sources should be prepared. Assessment of capacities and training needs of practising engineers, architects and masons required for hazard resistant construction should be done.

A list of departmental focal points with contact details should also be prepared while doing this analysis.

2.5.6 Outcomes and Recommendations

The last step of the HRVA is listing of its outcomes and recommendations. At this stage, it will be feasible to identify the critical areas of the state which need focused DRR interventions. A DM Plan can now be formulated to address the mitigation, preparation and response needs of the State.

CHAPTER: 3

INCIDENT RESPONSE SYSTEM (IRS)

3.1 Overview

The disaster response mechanism in India is based upon the Incident Response System (IRS). DM authorities at various levels are required to notify the IRS for their jurisdiction. DMEx are designed based on the framework of the IRS to enable better understanding of this response mechanism and coordination amongst various appointments. This chapter covers the basics of the IRS.

3.2 Introduction

The National Disaster Management Authority (NDMA) has issued the Guidelines on the Incident Response System (IRS) in 2010 for effective, efficient, standardised and comprehensive response to disasters in India. This chapter is based on these guidelines.[6]

The IRS is an effective mechanism to reduce adhocism in response. It is essentially a management system to organise various emergency functions in a standardised manner while responding to any disaster. The IRS identifies and pre-designates officers to perform various duties required during response to disasters like planning, operations, logistics, safety and media management. These officers are trained and prepared for their roles during disasters.

There is a clear chain of command with well defined guidelines for change of command if required. The IRS envisages a composite team with various Sections to attend to all the possible response requirements. It is a flexible system and all the Sections, Branches and Units need not be activated at the same time.They need to be activated only as and when they are required.

The defining features of the IRS are:

- Well thought out pre-designated roles for each member of the response team;
- Systematic and complete planning process;
- System of accountability for the IRT members;
- Clear cut chain of command;
- Effective resource management;

6. This chapter is based on the NDMA Guideline on Incident Response System, 2010. For further information, refer the guideline at: https://ndma.gov.in/sites/default/files/PDF/Guidelines/incidentresponsesystemjuly.pdf

- Proper and coordinated communication set up;
- System for effectively integrating independent agencies into the planning and command structure without infringing on the independence of the concerned agencies;
- Integration of community resources in the response effort;

The IRS can also be adopted by other public and private organisations with DM responsibilities. It is a generic system which can be scaled for operations at any level of hierarchy or complexity.

3.3 IRS Organisation

In the IRS, the senior most officer in the hierarchy of the organisation or governance is called the Responsible officer (RO). RO is overall in-charge in the management of emergency response. The Chief Secretary and the District Collector are RO at the State level and District level respectively. Similarly, the CEO of any public or private organisation will be the RO for that organisation.

The RO may delegate responsibilities to the Incident Commander (IC), who then becomes responsible for the management of all incident operations at the incident site. The IC manages the incident through Incident Response Teams (IRT).

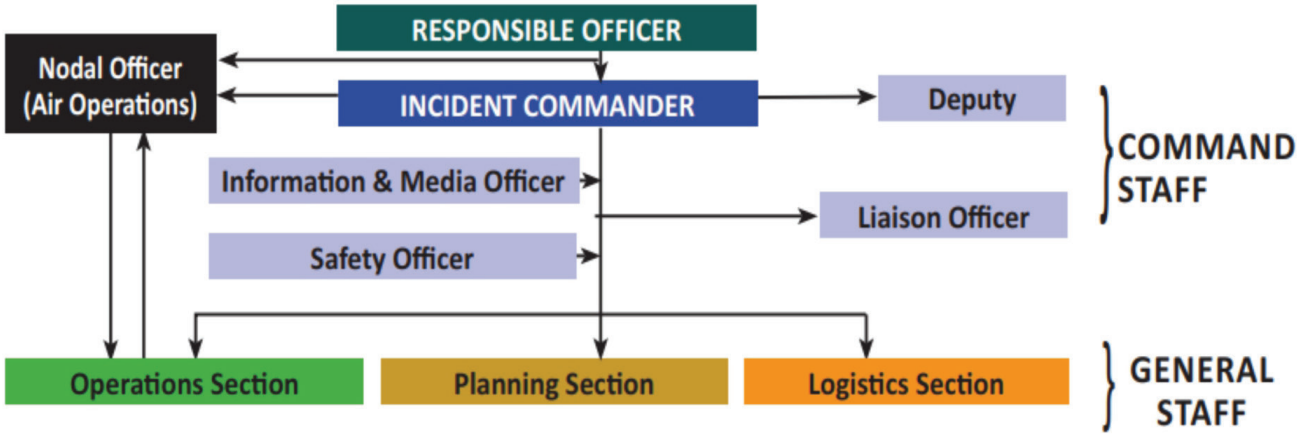


Figure 3.1: Outline organisation of the IRS

The IRT is an entity consisting of all positions of IRS organisation headed by the Incident Commander as shown in the figure above. The IRS organisation functions through IRT in the field. The IRT are required to be pre-designated at all levels of governance: State, District, Tehsil and Block. Similarly, IRT are predesignated for organisations at various levels of their functional structures like Headquarters, department or branch.

IRT are activated by the RO on receipt of early warning for disasters or emergencies. In case a disaster occurs without any warning, the local IRT will respond by itself and establish contact with RO.

A Nodal Officer (NO) has to be designated for the specialised function of coordination of air support for response.

As mentioned earlier, the IC is appointed by the RO and is the overall in-charge for the management of on site response to any incident. He may have a deputy with him depending upon the magnitude and nature of the incident. For his assistance and management of the incident, there are two sets of staff:

- Command Staff;
- General Staff;

3.3.1 Command Staff

The Command Staff consists of the Deputy Incident Commander, Information & Media Officer (IMO), Liaison Officer (LO) and Safety Officer (SO). They report directly to the IC and may have assistants. The main function of the Command Staff is to assist the IC in the discharge of his functions.

3.3.1.1 Information & Media Officer (IMO)

Main responsibilities of the IMO are:

- Prepare and release information about the incident to the media agencies and others with the approval of IC;
- Record decisions taken and directions issued in case of sudden disasters when the IRT has not been fully activated and hand it over to the PS on its activation for incorporation in the IAP;
- Ask for additional personnel support depending on the scale of incident and workload;
- Monitor and review various media reports regarding the incident that may be useful for incident planning;
- Organise Incident Action Plan (IAP) meetings as directed by the IC or when required;
- Collect weather information and disseminate it to all concerned;

3.3.1.2 Liaison Officer (LO)

The LO is the focal point of contact for various entities participating or helping in the response like first responders, line departments, PRIs, ULBs, NGOs and other cooperating agencies. The LO will:

- Maintain a list of concerned line departments, cooperating agencies and their representatives at various locations;
- Carry out liaison with all concerned agencies including NDRF, Armed Forces and line departments of Government;
- Monitor Operations to identify current or potential inter-agency problems;
- Participate in planning meetings and provide information on response by participating agencies;

- Ask for personnel support if required;
- Keep the IC informed about arrivals of all the Government and Non Government agencies and their resources;
- Help in organising briefing sessions of all agencies by the IC;

3.3.1.3 Safety Officer (SO)

The SO is required to develop and recommend measures for ensuring safety of personnel, and to assess and/or anticipate hazardous and unsafe situations. The SO is authorised to stop or prevent unsafe acts. SO may also give general advice on safety of affected communities. The SO will:

- Recommend measures for assuring safety of responders and to assess or anticipate hazardous and unsafe situations and review it regularly;
- Ask for assistants and assign responsibilities as required;
- Participate in planning meetings for preparation of IAP;
- Review the IAP for safety implications;
- Obtain details of accidents that have occurred within the incident area if required or as directed by IC and inform the appropriate authorities;
- Review and approve the Site Safety Plan, as and when required;

3.3.2 General Staff

The General Staff has three components which are as follows:

- Operations Section (OS)
- Planning Section (PS)
- Logistics Section (LS)

3.3.2.1 Operations Section (OS)

The OS is responsible for directing the required tactical actions to meet incident objectives. Management of disaster may not immediately require activation of Branch, Division and Group. Expansion of the OS depends on the enormity of the situation and number of different types and kinds of functional Groups required in the response management.

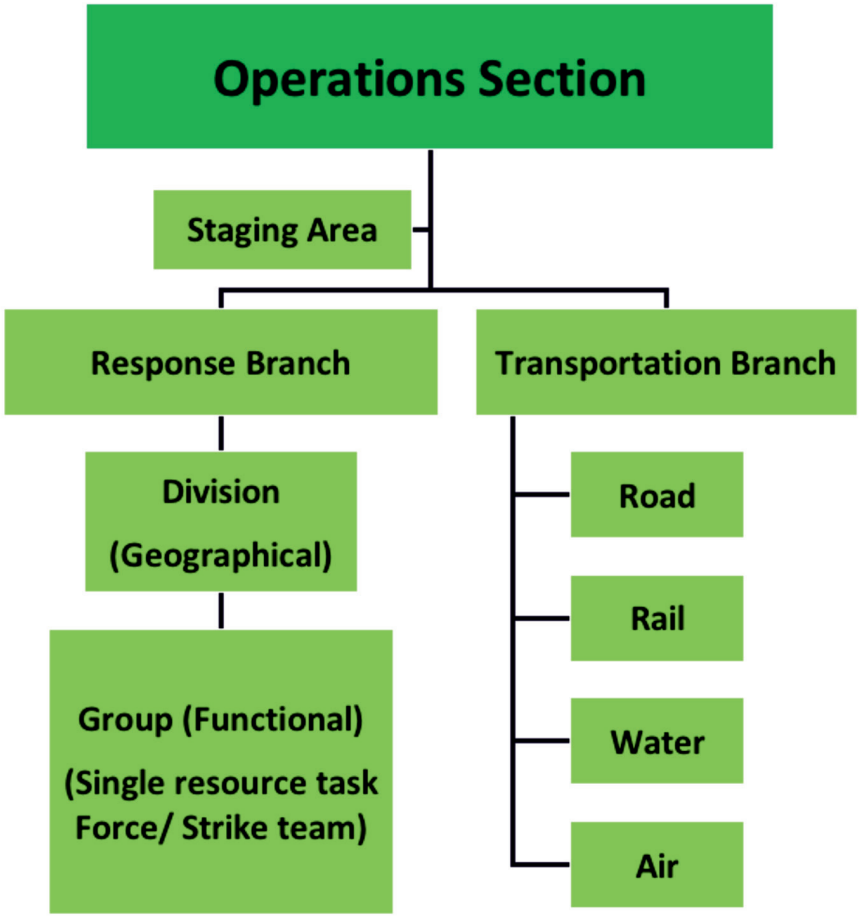


Figure 3.2: Organisation of the Operations Section

The OS comprises Response Branch (RB), Transportation Branch (TB) and Staging Area (SA) and is headed by the Operations Section chief (OSC). The activation of the RB and TB is situational.

The RB consists of various Divisions and Groups depending upon the functional and geographical requirements of the incident response. The Groups are classified by their functional characteristics, such as Single Resource, Strike Teams and/or Task Force. The RB is activated according to the nature of response required. For example, in an earthquake or a flood, where a lot of houses get damaged or destroyed and people need to be rescued and provided relief and temporary shelter. The rescue and relief group of the Response Branch will be activated to provide these services.

The TB may consist of Road Operations Group, Rail Operations Group, Water Operations Group and Air Operations Group. These Groups are also activated according to the transportation modes that may be required in the incident response for movement of affected people as well as relief materials.

The SA is the area where resources mobilised are collected and accounted for. It is from this location that the resources are deployed for specific assignments or tasks.

3.3.2.2 Planning Section (PS)

The PS is responsible for collection, evaluation and display of incident information, maintaining and tracking resources, preparing the Incident Action Plan (IAP) and other necessary incident related documentation. They will assess the requirement of additional resources, propose from where it can be mobilised and keep the IC informed. This Section also prepares the demobilisation plan.

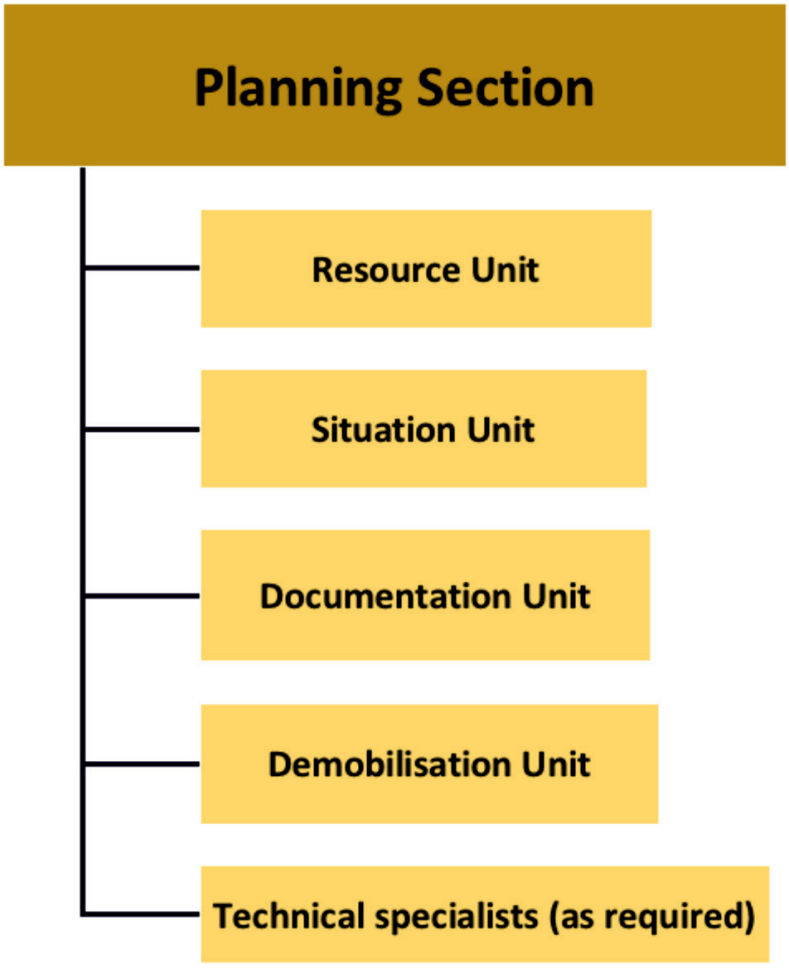


Figure 3.3: Organisation of the Planning Section

The PS comprises Resource Unit, Situation Unit, Documentation Unit and Demobilisation Unit. In case of need, the PS may also have Technical Specialists for addressing the technical planning matters in the management of an incident. A list of such specialists will be kept available in the PS.The Section is headed by the Planning Section Chief who reports to the IC.

3.3.2.3 Logistics Section (LS)

The LS is responsible for providing facilities, services, materials, equipment and other resources in support of the incident response. The Section Chief participates in development and implementation of the IAP, activates and supervises Branches and Units of his section.

In order to ensure prompt and smooth procurement and supply of resources as per financial rules, the Finance Branch has been included in the LS.

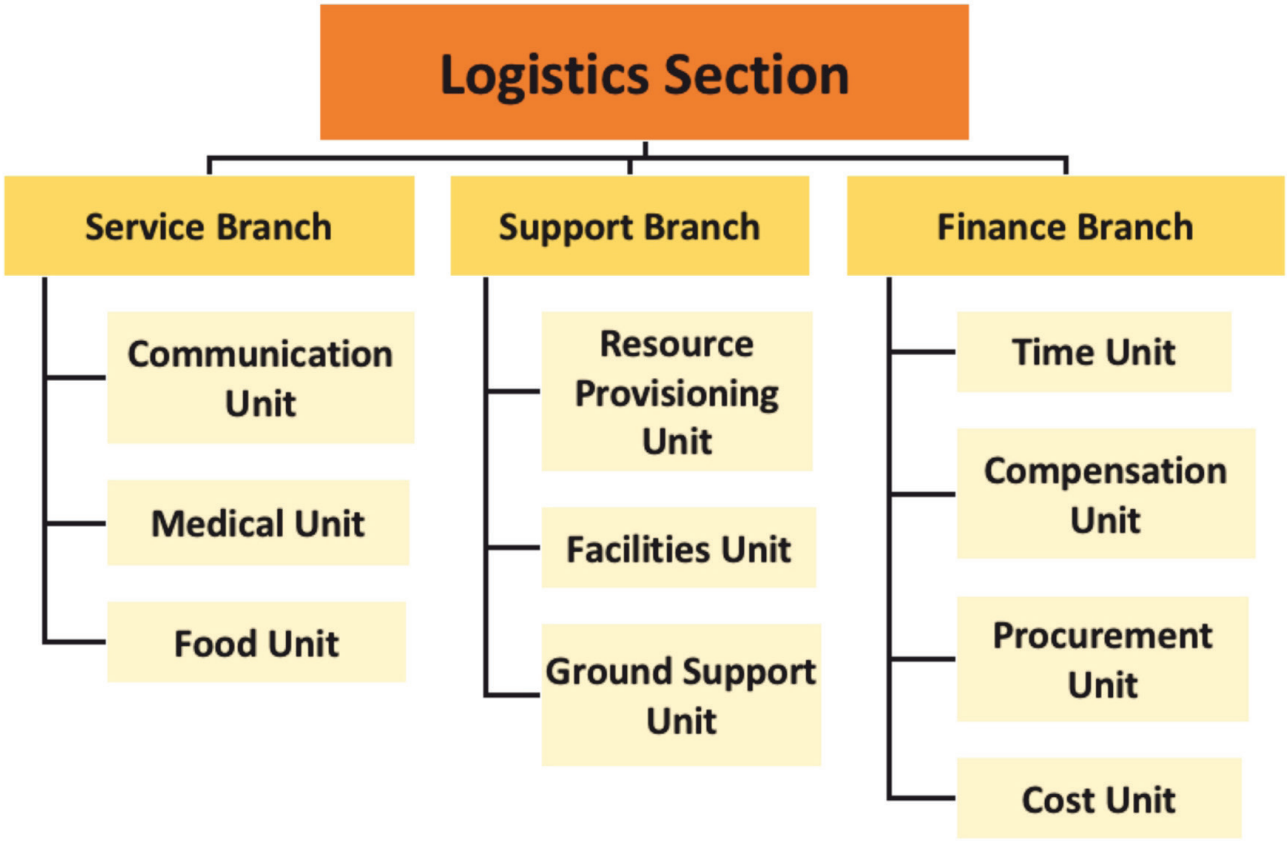


Figure 3.4: Organisation of the Logistics Section

The LS provides all logistic support for effective response management. The Units under different Branches of the LS are responsible not only for the supply of resources, but also for the setting up of different facilities like the Incident Base, Camp, ICP and Relief Camp etc. This would entail the involvement of several line departments of Government and other agencies. It would require extensive and smooth coordination at the highest level of the administration. The State and District DM plans will have comprehensive details like where the required resources can be procured from and manpower mobilised, etc. The LS works closely with the RO and the IC.

3.4 Organisational Flexibility

The IRS organisation is a need based, flexible organisation. All the components need not be activated simultaneously. Only those Sections, Branches and Units need to be activated that would be required for the given disaster. Each activated Section, Branch or Unit must have a person in charge to perform its role. In some cases, because of lack of personnel, a single supervisor may be made in-charge of more than one Group, Unit or Section. The organisational elements that are no longer required should be deactivated to reduce the size of the organisation and to ensure appropriate use of resources.

3.5 The Incident Action Plan (IAP)

Management of every incident needs an IAP and proper briefing of all personnel. The purpose of the IAP and briefing is to provide all concerned personnel with appropriate directions for the various tasks in hand. Before taking up response activities, the RO or the IC will need to take stock of the situation and availability of resources, list out various tasks and provide proper briefing to the responders.

The PS is responsible to assess the current situation and prepare the IAP. The IAP contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period (usually 24 hours) like incident communication plan, traffic plan, safety plan and incident map etc.

The IAP may be oral or written depending on the duration and magnitude of the incident. In low or medium level incidents, an oral action plan may suffice. The directions given orally may be jotted down by the Command Staff and handed over to the PS to be integrated in the IAP.

At times there may be sudden disasters without warning and the IC may have to respond immediately. In such cases also the Command Staff will jot down the decisions taken for response and hand it over to the PS when it is activated and it should be incorporated in the IAP.

The major steps for preparing IAP are as follows:

- Initial information and assessment of the damage and threat;
- Assessment of resources required;
- Formation of incident objectives and conducting strategy meetings;
- Operations briefing;
- Implementation of IAP;
- Review of the IAP;
- Formulation of incident objectives for the next operational period, if required;

3.6 IRS Facilities

For effective response, the following facilities may be required to be established depending on the needs of the incidents, the length of time for which the facilities are needed to be used, the cost to establish them and prevailing weather conditions.

3.6.1 Incident Command Post (ICP)

The ICP is the location at which the primary command functions are performed. The IC will be located at the ICP. There will only be one ICP for each incident. The ICP can be located with other incident facilities like Incident Base.

Picture 3.1: Incident Command Post

3.6.2 Incident Base

All primary services and support activities for the incident are usually located and performed at the Incident base. The Logistics Section will also be preferably located here. Normally base is the location where all uncommitted as well as out-of-service equipment and personnel to support operations are located. There will be only one Base established for each incident and normally it will not be relocated.

Picture 3.2: Incident Base

3.6.3 Staging Area (SA)

The SA is an area where resources are collected and kept ready for deployment for field operations. These may include things like food, vehicles and other materials and equipment. The SA will be established at a suitable area near the affected site for immediate, effective and quick deployment of resources. More than one SA may be established if required. If resources are mobilised at other locations to be ultimately despatched to the affected areas, these locations are also known as SAs.

Picture 3.3: Staging Area

3.6.4 Camps

Camps are temporary locations within the general incident area which are equipped and staffed to provide rest, food, drinking water and sanitary services to the responders. These are separate facilities which may not be located at the Incident Base. Camps may be in place for several days and they may be moved depending upon incident needs while the Incident Base remains at the same location. Very large incidents may have one or more Camps located in strategic areas.

3.6.5 Relief Camp (RC)

All support services to the affected communities are usually provided in the Relief Camps (RCs). They will be established as per demands of the situation. The resources required for the establishment of RC will be provided by the LS and it will be maintained and managed by the Branch or Division of the OS deployed for the purpose. It may be established at the existing buildings like Schools, Community halls, Cyclone Shelters etc. or tents may also be used for such purposes.

3.6.6 Helibase and Helipad

A Helibase is the main location for parking, fueling and carrying out the maintenance of the Helicopters. It may also be used for loading and unloading of relief materials. The Helibase is often located at the Airport or at another location decided by the District administration in consultation and approval by the agency operating the Helicopter.

Helipads are temporary locations in the incident area where Helicopters can safely land and take off. Helipads are established and used for operational purposes only like loading / unloading of personnel and equipment and other relief materials.

Picture 3.4: Relief Camp

Picture 3.5: Helipad

3.7 IRS Notification

A number of States and UTs have already notified the IRS and taken steps to form IRT. Some sample notifications are included as Annexure II.

CHAPTER: 4

EMERGENCY OPERATIONS CENTRE (EOC)

4.1 Overview

EOC is the hub from which various activities in different phases of DM Cycle are monitored, directed and coordinated. An efficient and a well administered EOC is a force multiplier during response and recovery stages. Hence, evaluating the preparedness of EOC is an important part of disaster management exercises. This chapter covers the functions of EOC and its linkages to the IRS and DMEx.

4.2 Introduction

National Policy for Disaster Management 2009, mandates that the establishment of EOC at the National, State, Metro and District level and equipping them with contemporary technologies and communication facilities and their periodic upgradation, will be accorded priority.[7]

Presently, the National Emergency Response Centre (NERC) is functional at New Delhi for monitoring and managing disasters at the Central Government Level in the country. It is managed by the DM Division of the Ministry of Home Affairs (MHA). MHA is in advanced stages of setting up a state of the art Integrated Control Room for Emergency Response (ICR-ER) for better handling of disasters and emergency situations in the country. It will have facilities for pan-India disaster related situational awareness and strategic level monitoring. ICR-ER will assist decision makers at the Central and State Government levels to coordinate and direct response and recovery during disaster and emergency situations.

All the States and UTs of the country have their own State Emergency Operations Centre (SEOC)[8] which link upwards to the NERC and downwards to the DEOC at the district level. Response agencies like NDRF, SDRF, Armed Forces and CAPFs also have their EOC. A number of Central and State Government Ministries and departments with emergency support functions also have their own EOC. Most of these EOC are permanent in nature. Some of them are activated seasonally or on a required basis. Permanent EOC at the State and below level, operate at skeletal strength during normal times. The staff is augmented during impending disasters and emergency situations.

7. Section 5.2.7, National Policy on Disaster Management. 2009
8. A list is available at: https://ndma.gov.in/Response/Emergency-Operations-Center

4.3 Emergency Operation Centre[9]

EOC is an offsite facility which will be functioning from the State / District headquarters and which is actually an augmented control room having communication facilities and space to accommodate the various ESFs. It is a combination of various line departments of Government and other agencies whose services are generally required during incident response. These officials will be able to take decisions on the spot under the guidance of RO and will be able to assist the RO in achieving the incident objectives. RO will also ensure that the line departments do not issue parallel and contradictory instructions to their field level officers. The EOC will take stock of the emerging situation and assist the RO in mobilising the respective line department's resources, manpower and expertise along with appropriate delegated authorities for the on-scene IRT(s). EOC will keep the RO informed of the changing situation and support extended thus far. This responsibility can be discharged most effectively only if it has the required information through a fail safe communication facility and a robust information technology solution with an efficient Decision Support System (DSS).

In addition to the above, a high bandwidth Internet connectivity will further help in accessing situational awareness, decision support and multi-agency coordination. It will allow all collaborating agencies and departments inside and outside the EOC environment to share information, make decisions, activate plans, deploy IRT, perform and log all necessary response and relief activities and make the EOC effective. It is very important to put the above capabilities in place.

Picture 4.1: Odisha State Emergency Operations Centre

4.4 Linkage between IRS and EOC

IRS is the mandated disaster response mechanism in India. It provides effective organisational and operational structures that are flexible and scalable. The responsibilities of various officials and the chain of command is well established, thereby eliminating adhocism. The Senior most position in the IRS within a given jurisdiction is the Responsible Officer (RO).

9. NDMA guideline on IRS, 2010

When a Disaster is imminent or has occurred without warning, RO activates the pre-notified IRT under individual Incident commanders (IC) and orders augmentation of the EOC. The IC operates from the Incident Command Post (ICP) at the incident site. During disasters, the RO is located at the EOC.

The EOC functions at the strategic level and is located off site at a secure and safe location. ICP functions at a tactical level and is located on site near the place of the incident.

ICP are temporary in nature and exist till the incident has been brought under control. EOC are permanent entities that exist both in normal times and during disasters. The staff at the EOC is augmented during disasters. A number of Line departments responsible for ESF have their representatives at the EOC for coordination and implementing the directions of the RO.

4.5 EOC and ME

EOC is the hub of all activities during response. It is responsible for:

- Receipt of early warning and further dissemination to the public;
- Situational awareness on extent of disaster;
- Activation of IRT;
- Resource mobilisation and allocation;
- Response related strategic planning and decisions;
- Monitoring response and emerging situations;
- Coordination and synergy of effort amongst multifarious DM agencies;
- Briefing senior leadership;
- Maintaining communication with both upstream and downstream EOC and Incident commanders in the field; and
- Public awareness and media coordination;

It is imperative that these functions are rehearsed to maintain optimal levels of preparedness. ME are an important tool in this regard. Not only do they help in training and capacity building of the EOC personnel, they assist by validating SOPs and identifying strengths and weaknesses. Hence, EOC must be exercised in all ME to test readiness, coordination capabilities and response effectiveness.

4.6 Design and Siting Considerations for an EOC

The EOC design must be hazard resilient as well as functionally efficient. It should be capable of surviving the disaster and remain accessible during and after the disaster. The EOC must be so located that it is easy for all the decision makers, ESF and staff to reach the EOC during disasters.

During the disaster essential services are affected. The EOC must be self-sustained and capable of functioning by itself for up to 72 to 96 hours, by which time it is expected that the essential services to critical infrastructure shall be restored. For this it must have suitable uninterrupted power supply systems and electricity generators with adequate fuel. The EOC must also have sufficient stock of food, water, medicines and other essential supplies for the augmented manpower that would be functioning at the EOC during disasters and emergency situations.

There must be redundancy of power, communication and IT systems in the EOC to enhance reliability. Resources permitting, an alternate EOC must also be planned.

The EOC must be so located that it has good communication connectivity. As the landlines tend to get disrupted in most disasters, the location must be conducive to good radio and satellite connectivity. The area must also have a well developed cellular network. The EOC should cater for multiple layers of communications on diverse media.

The EOC must have good access control systems and security. During disasters and emergency situations, the possibility of attempts by unruly public or criminal elements to try to disrupt the functioning of the EOC cannot be ruled out.

The EOC needs to have adequate space for its operational, administrative and logistic requirements. It should be able to accommodate maximum anticipated staff that would be called for a major disaster.

The above considerations are summarised in the figure given below.

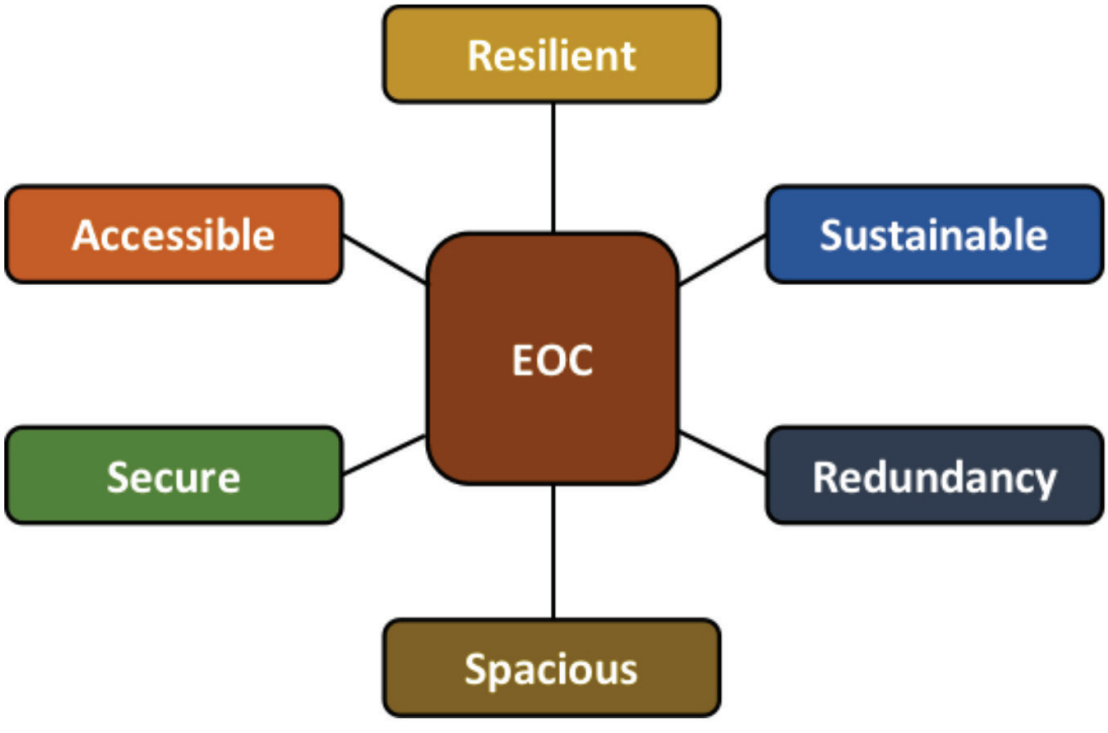


Figure 4.1: Design and Siting Considerations of an EOC

4.6. Facilities and Work Areas

The EOC has a number of operational and administrative facilities that are needed to carry out the functions for which it is established. An indicative list of these facilities is as follows:

- Control room with data walls, projection systems, computer system and communication arrangements for monitoring and coordination functions. This is the main area of the EOC. It is active both in normal times and during disasters.
- Conference rooms for planning and briefing related activities.
- Offices for RO and other senior leadership.
- Work spaces for the ESF and line department officials.
- Reception and waiting rooms.
- Access control systems for controlling physical access.
- Media briefing rooms for interaction with media without interfering with operations.
- Communication Centre for housing communication systems ensuring both upstream and downstream connectivity.
- IT centre for controlling and maintaining IT assets and housing the IT infrastructure including various servers and data centre.
- Power room for UPS and generator systems.
- Dormitories for accommodating persons operating in shifts.
- Rest and refreshment area, Kitchen and Toilets.
- Adequate parking space.

4.7 IT infrastructure

Managing and coordinating response and recovery operations require an enormous amount of information. The information received at the EOC needs to be stored, collated, processed, analysed, presented and further disseminated. Wherever feasible, the information must be geo-tagged and the info handling systems must be GIS enabled.

There is a need for a Decision Support System to enable senior leadership to take decisions based on data and emerging situations. The IT systems should help establish, maintain, and share situational awareness. They should provide ready access to essential information and simplify information analysis and verification. An easy and efficient access to resource databases with a facility to track resource deployment and availability will be very helpful during response. Hence, EOC require a strong, robust and scalable information management system which is easy and efficient to use.

The IT infrastructure at the EOC must facilitate:

- Receipt of early warning and other inputs related to disaster and emergency situations.
- Plotting this information on maps and capability for its targeted dissemination to various stakeholders and the public.
- Digital maps with layers for political boundaries, population, road and rail network, waterbodies, other points of interest such as Police stations, fire-stations, schools and hospitals etc.
- Comprehensive resource management system.
- System for planning and dissemination of directions.
- Decision support system.
- Database of DM plans and SOPs.
- System for incident logging and details of response and outcome.
- Collaboration and coordination through video conferencing.
- Video Streaming.
- Directories with contact details of all DM officials, emergency services, nodal officers, response agencies, NGOs, etc.

4.8 Communication Systems

Communication systems for EOC need careful planning. Existing public communication systems based on landline and mobile phone networks will get adversely affected during disasters. The EOC communication systems must be based on diverse media like Optical Fibre Cable (OFC), cellular network, radio and satellite for survivability.

Portable platforms must be catered for the last mile connectivity and control of the operations at the disaster hit areas and incident sites. A vehicle mounted with HF and VHF radio, satellite telephone and '5G network in a box' systems for deployment in the affected site will provide immediate connectivity between EOC and ICP. The integration of Ham radios with the EOC communication system will also be advantageous.

Picture 4.2: Integrating Police Radio network with the SEOC during DMEx and testing satellite phone.

There should be a plan for dovetailing the communication systems of police, railways, NDRF and the Armed Forces with the local communication set up. This will be very useful during large scale disasters.

The communication systems must be multi-layered and have built in redundancy. They should be frequently tested.

4.9 Organisation

The organisation of EOC is based on the IRS command and control structure. It has the following sections aligned with the IRS system:

- Management Section: This section has overall responsibility for functioning of the EOC including taking strategic decisions and overseeing their implementation.
- Operations Section: This section provides coordination between the EOC and ICP for response activities in the field.
- Planning and Intelligence Section: This section is responsible for collecting disaster related information and maintaining situational awareness. It analyses the information, carries out damage assessment and develops the action plan for the disaster.
- Logistics Section: Logistics section is responsible for mobilising resources and manpower. It caters for transport and procures equipment and supplies.
- Finance and Administration Section: This section oversees financial management, procurement processes, and administrative support to ensure efficient operations. It is also responsible for overall documentation.

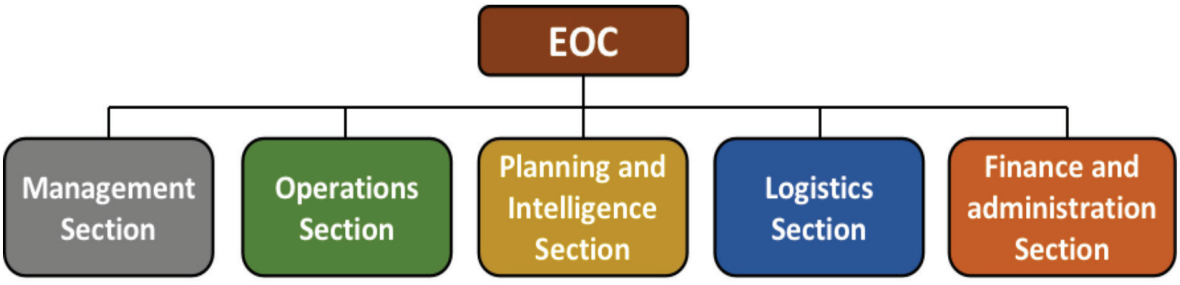


Figure 4.2: General Organisation of an EOC

4.10 EOC Staff

The EOC operates in shifts and the staff comprises both specialist and administrative manpower. The EOC is headed by the EOC Director who is overall incharge of the EOC operations and administration. The EOC director reports to the RO. The RO at the State and district level is generally the chief Secretary and the district collector respectively. The CEO would be the RO at the organisation level. EOC operate at skeletal strength during normal times and the staff is augmented during impending disasters and emergency situations.

Specialist manpower is required to receive early warning and process it as per SOP, collect and analyse data, prepare action plan and monitor its implementation, maintain situational awareness, resource mobilisation and coordination.

During disasters, the constituent sections are activated under section chiefs. There is also representation of ESF and all concerned line departments with authority to quickly mobilise their resources. Representatives of central response teams like NDRF, CAPF and Armed Forces are also present in the EOC to integrate their resources, expertise and to resolve conflicts that may arise during the response effort.

The administrative staff is needed for running of essential services at the EOC like reception, security, maintenance of utilities, running of kitchen etc. This staff is also hired on a need basis and augmented during disasters.

4.11 Conclusion

By carefully organising the EOC with these components and considerations, States/ districts and organisations can enhance their capability to effectively coordinate response efforts, mitigate the impact of disasters, and support the recovery of affected communities.

CHAPTER: 5

TYPES, SCALE AND SCOPE OF DMEx

5.1 Overview

This chapter enumerates various types of disaster management exercises (DMEx) with comparative pros and cons. Scale and scope of TTEx and ME has been explained in detail. Various phases of DMEx have been introduced. Details of these phases shall be covered in subsequent chapters.

5.2 Introduction

A DMEx is a simulated event with the purpose of testing response capabilities, disaster management plans and SOPs that are designed to be used during real disasters and emergency situations. They allow the decision makers and first responders to rehearse and develop their skills in a safe environment. All stakeholders get an opportunity to work with each other which enhances cooperation and coordination.

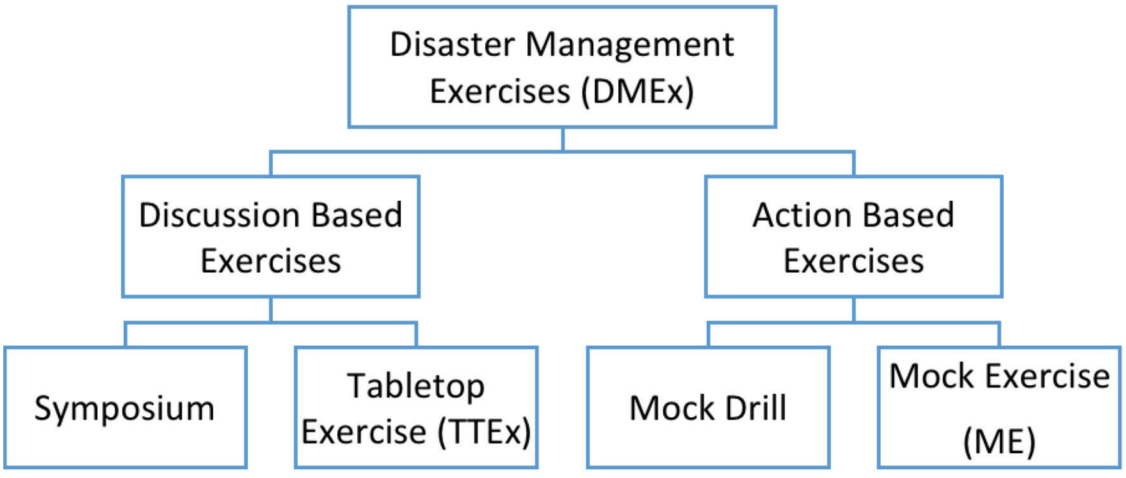
DMEx can be discussion based or action oriented exercises. Their scale and scope may vary according to the priorities of senior leadership of the State or the organisation conducting the exercise. The exercise could involve the entire spectrum of stakeholders or concentrate on a specific Emergency Support Function. All available resources may be mobilised or sample resources from each sphere of activity may be activated.

5.3 Types of Mock Exercises

DMEx are broadly of two types: discussion based exercises and action based exercises. As the name suggests, discussion based exercises are those exercises that do not involve movement of resources or any other form of physical response. They are either conducted in conference halls/ auditoriums or they are conducted online over the Internet. They are of two types: Symposiums and TTEx.

On the other hand, action based exercises involve physical simulation of the disaster or emergency situation to which the participants respond by actual movement of resources and response by emergency responders carrying out operations like search and rescue, medical aid, evacuation of buildings/ villages, establishment of relief camps, air-dropping of relief supplies and restoration of essential services. Action based exercises are of two types: mock drills and mock exercises.

Figure 1.2 depicting the broad classification of DMEx given at chapter 1 is reproduced below for ready reference.



5.3.1 Discussion Based DMEx

Discussion-based DMEx include symposiums and TTEx. They are an important tool in generating awareness, training DM officials, developing decision making capabilities and evaluating DM Plans and Policies in a safe environment.

These types of exercises require comparatively lesser resources and time to prepare. They need subject matter experts and experienced facilitators for their conduct. Symposiums are mostly based on lectures and presentations. In tabletop exercises, participants apply their experience and knowledge to solve problems theoretically within the overall framework of existing SOPs and capabilities.

5.3.1.1 Symposium

Symposium is a basic type of discussion based exercise whose prime purpose is to acquaint the participants with the DM Organisation, Plans and Procedures. It is used both as an orientation tool for newly inducted DM officials as well as a refresher tool for the existing DM team and professionals. It is effective in providing a common understanding of the DM structure, Policies, SOPs and capabilities of the organisation.

Salient and defining features of a symposium are:

- It is primarily a lecture or presentation based event and is usually conducted by a subject matter expert chosen based on the objectives of the exercise.
- The objectives and the end goals must be well defined.
- It could focus on a single issue or a number of issues under a common theme.
- While covering multiple issues, it is normally conducted by a panel of subject matter experts under the overall control of a chairperson.

- Case study discussion is an important tool which can be very effective in ingraining the right lessons and take-aways in the participants during symposiums.
- This form of exercise essentially has a one way communication with limited feedback from the participants. It can be made more effective through question and answer sessions and by encouraging the participants to seek clarifications for their doubts/ poorly understood concepts.
- It is conducive to be conducted virtually over the Internet and is effective for both small and large numbers of participants.
- Planning, coordination or logistics required to conduct a Symposium is the least compared to other forms of exercises.
- It is a low cost training methodology in terms of budget, resources and time.

It is advisable to document the discussions and action points identified during the symposium. Details of participants must also be recorded for future reference and planning of further training.

This is the most common type of exercise and there is sufficient expertise in the environment to conduct this exercise. It finds a place in annual training calendars of most organisations. It is important to note that this form of DM exercise serves as a good precursor to a TTEx or a Mock Exercise. It can be used effectively to provide a common framework for all participants of the subsequent TTEx or Mock Exercise.

5.3.1.2 Tabletop Exercise (TTEx)

TTEx is a discussion-based exercise in which a disaster situation is simulated (commonly known as a scenario) and participants are expected to respond to information fed by the Exercise Controller (commonly known as a narrative or an inject). The participants are assigned roles akin to their real world DM responsibilities and their response is expected to be in consonance with the existing policies, plans and capabilities.

The scenario and the subsequent narratives mimic disasters and emergency situations most likely to occur in the real world. In the narrative, timelines may be compressed to cover the entire range of events that unfold during a disaster. This is done to control the flow of the exercise and to enable completion of the exercise in an acceptable time period. The scenario along with the narratives is like a script that is played out sequentially in a way that advances the exercise.

The narratives are provided to the participants through messages distributed at different times in exercise. These messages can be transmitted orally, in print, or digitally. It is a common practice to use presentation slides as a tool to convey this information to the participants. Sometimes the Exercise controller may choose to feed contradictory or incomplete information to depict an environment of uncertainty that exists during actual disasters.

In variation to the commonly accepted form of TTEx, the exercise may also be conducted with multiple teams attempting to solve problems framed by the Exercise Coordinator. It is

generally conducted in a competitive environment. Written solutions are expected which are then evaluated by a control team and discussed by the facilitator.

The aim of the TTEx is to generate discussions on various aspects of response. It promotes understanding of policies, plans, capabilities and SOPs. Participants practise decision making in a safe and stress-free environment. Consequences of these decisions are explored to derive the right lessons.

TTEx leads to identification of strengths and weaknesses. It is a great training tool and an effective way to test the efficacy of existing policies, plans and capabilities. It promotes coordination amongst various agencies that are required to operate in synergy during disasters. One of the major outcomes of the exercise is an improvement in plan to address the gaps and weaknesses noticed during the exercise.

TTEx requires more time to prepare compared to Symposium and requires greater resources. They are safer than mock drills and mock exercises.

The benefits of TTEx can be summarised as follows:

- Test DM policies, plans and procedures as well as existing capabilities.
- Evaluate the decision-making process and coordination mechanisms in a risk free environment.
- Training of DM officials and other stakeholders and updating their knowledge.
- Strengthen inter agency coordination.

5.3.2 Action Based DMEx

Action based exercises include Mock Drills and ME. In these exercises, real time physical response is rehearsed to simulated situations. They are very effective in validating DM Plans, SOPs and response capabilities. In action based exercises, there is actual mobilisation of personnel, equipment and other resources. They require greater planning, preparation and coordination as also greater budget and resources. The payoffs too are higher compared to discussion based exercises. Safety in the conduct of these exercises is a major consideration that must be kept in mind.

5.3.2.1 Mock drill

A mock drill is an action based exercise in which an emergency situation is simulated and a physical response is rehearsed. The distinguishing characteristic of a mock drill is that in mock drills, a single task, activity, operation, step or a process is repeatedly carried out with an aim of validating and mastering the same. The goal may also be to train emergency responders on new techniques or practise their existing skills.

Mock drills are very effective in spreading public awareness and training of vulnerable communities. This requires expert guidance and supervision. Special attention is required to ensure safety of participants.

Some examples of mock drills are: Fire fighting practice in a factory or school, rescue of victims from high rise buildings, earthquake mock drill in schools, evacuation drill in a mall or cinema hall, use of sophisticated equipment for collapse structure rescues, practising flood rescues, early warning mock drills, testing of emergency communication systems etc .

Mock drills are relatively easy to conduct as they have a narrow focus and limited spread. The number of participants are generally not very large.

In mock drills, simulation is made realistic through mobilisation of personnel and equipment. A mock drill may last for a few hours to a day. They can be part of a larger exercise or held in isolation.

Outcome of the mock drill is immediate feedback wherein the performance is evaluated against laid down standards, norms and procedures. Gaps and weaknesses are identified and immediate corrective actions can be initiated. The SOPs are validated and best practices are reinforced.

Picture 5.1: Evacuation drill in preparation against a cyclone disaster

5.3.2.2 Mock Exercise (ME)

A mock exercise is an action based exercise where a disaster or an emergency situation is simulated and the participants respond through mobilisation of personnel, equipment and resources as per the DM Plan, Policies and SOPs. Like the TTEx, this type of exercise too is

based on a realistic scenario and a series of narratives. Multiple agencies, organisations and participants who have a role in the response as per the DM Plan, play out their actions based on the injects from the Exercise control. They operate in a coordinated manner as per the Incident Response System.

A mock exercise is the most elaborate of exercises that tests the capability of the State, district or organisation to respond to a simulated disaster or an emergency situation. Multiple functions of the DM plan are evaluated, such as early warning systems, evacuation of villages/ buildings, response, search and rescue, medical aid, relief, inter-agency coordination, communication systems etc.

The simulated disaster or emergency situation should be as close to the reality as possible, so that plans can be tested under the corresponding real-life stress level, resource crunch and time-pressure. This is done to evaluate the operational capability of disaster management systems in an environment akin to the actual response conditions.

Being a complex and resource intensive exercise, a mock exercise needs careful planning and coordination. Multiple agencies and stakeholders are exercised simultaneously over a large exercise site. There could also be multiple geographically separated sites simulating related activities. The participants solve difficult problems that mirror probable fall outs of the assumed disaster or emergency situation.

One of the focus of mock exercises is to stress test the plans, policies, and procedures that may have been developed in discussion-based exercises and honed during previous, smaller exercises by implementing them and evaluating their effectiveness.

Characteristics of mock exercises are summarised below:

- Mobilisation of personnel, equipment and other resources
- Multiple agencies and stakeholders are exercised simultaneously
- Large exercise site or multiple geographically separated exercise sites.
- Quick decision making under stressful conditions;
- Simultaneously balancing number of competing requirement and priorities;
- Elaborate logistics requirement
- Safety issues are a major consideration;
- DM roles are rehearsed as per DM plan to identify areas for improvement;
- Needs a large amount of resources and coordination in all phases of the exercise.
- Needs significantly more preparation time and may last from a day to several days.
- The evaluation of the performance of participants and stakeholders can significantly improve the system.

Picture 5.2: An industrial disaster mock exercise

The terms ME and Mock Drills are often used interchangeably in the literature which leads to confusion. Although they are similar activities, they differ in scale and scope. The distinguishing characteristic of a mock drill is that in a drill, a single task, activity, operation, step or a process is repeatedly carried out with an aim of validating and mastering the same. In a ME, multiple tasks and processes involving many departments and organisations are rehearsed. While a drill will test one function, an exercise evaluates most functions of a plan.

Major outcomes of a ME are as follows:

- Understanding of roles and responsibilities.
- Validation of DM plans, policies, and procedures.
- Improvement in inter-agency coordination.
- Realistic estimate of resource requirements.
- Evaluation of capabilities.
- Public awareness and community participation in DM activities.
- After-Action Report and Improvement Plan.

5.4 Comparison of Various Types of DMEx

A comparison of various types of exercises is summarised in the table given below:

Parameter	Discussion Based Exercises		Action Based Exercises	
	Symposium	TTEx	Mock Drill	Mock Exercise
Description	Lecture or presentation based event to acquaint the participants with the DM organisation and structures, policies, SOPs and capabilities of the organisation.	Participants discuss and analyse existing policies, plans and procedures in context of a scenario with a view to identify strengths and areas of improvement.	A single task, activity, operation, step or a process is repeatedly carried out with an aim of validating and mastering the same.	Evaluates capabilities by activating multiple tasks & processes of the DM plan through mobilisation of manpower and equipment in response to a physical simulation of a disaster.
Complexity	Low	Medium	Medium	High
Realism	Low	Medium	High	Highest
Preparation time	2-3 weeks	3-4 weeks	2-3 weeks	6-8 weeks
Running time	Few hours to 1-2 days	Few hours to a day	Few hours to a day	Full day to 2-3 days
Participation	Generally varies from 100 to 300 but can be more or less depending on venue capacity and requirement of training.	Number of participants limited to venue capacity. Scalable with virtual attendance.	Depends on size of institution, training requirement, nature of operation and venue capacity	Large scale participation due to multiple sites and events
Resources and budget	Low	Medium	Medium	High
Disruption to routine	Low	High	Medium	Very high

The various types of exercises differ in realism they can simulate as well as the complexity of conduct in terms of preparation time, planning, coordination and conduct. The diagram given below captures this aspect of DMEx.

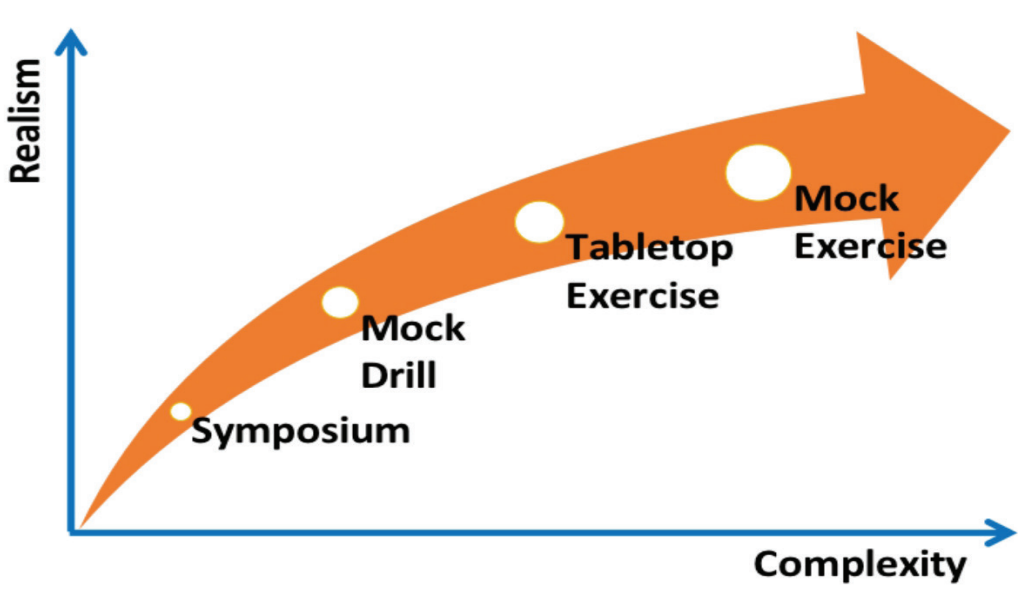


Figure 5.2: Comparative Realism and Complexity of different types of DMEx

5.5 Selecting the Type of DMEx to Conduct

It is important to select the right type of exercise to ensure that the training objectives are achieved. These exercises are not mutually exclusive of one another. Some exercises may constitute components of other exercises. For example, a ME is likely to include a series of mock drills and may be preceded by a TTEx. The following flowchart will help the DM authorities to select the right type of exercise.

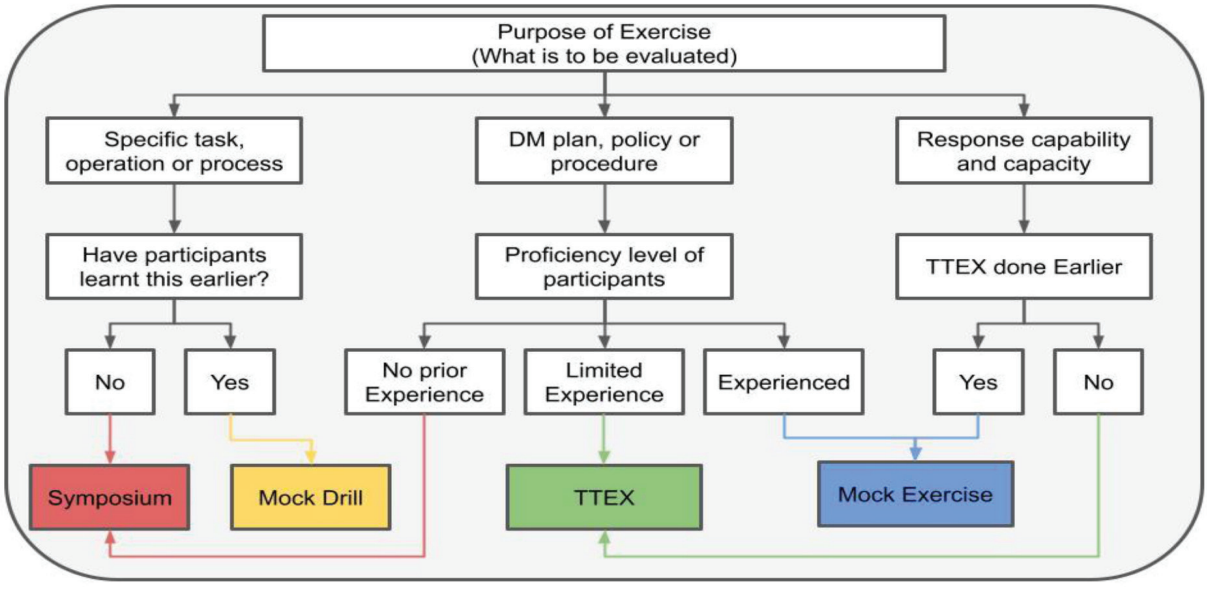


Figure 5.3: Flowchart to select type of DMEx to conduct

5.6 Scale and Scope of Exercises

When deciding on the type of DMEx, focus should be on the objectives of the exercise. It helps define the scope of the DMEx. The scope is closely related to the size and scale of the exercise. The objectives dictate the specific outcomes to be achieved and evaluated. In order to ensure the exercise achieves its stated purpose, it is important to define the scope clearly and set the right objectives. The key elements of the scope of DMEx are:

- Type of disaster or emergency situation;
- Number of participants;
- Function(s) that the participants will practice;
- Type of Exercise; and
- Level of conduct (State, district or community);

The DMEx will yield the best outcomes when conducted in a progressive manner. It is an accepted best practice to start on a small scale and gradually expand from community level to district level, from district to state level and onwards to multistate level mock exercises. Similarly, before conducting an organisation-wide exercise, it is advisable to conduct smaller department exercises. This helps the participants to orient and adapt to the common framework, reduce stress and enhance the learning value of the exercises. The consequent synergy of action is better resulting in better response and coordination.

A full fledged ME must be preceded by a TTEx. The TTEx could be conducted independently or just before the ME as it is presently carried out. The nature of the TTEx permits large participation wherein there could be a combination of physical attendance by participants and virtual attendance through video conferencing. The TTEx could be a one big all encompassing event or a series of smaller TTEx conducted over a period of time. A series of smaller TTEx at the district level before conduct of a state level TTEx may enhance the outcomes of the state level exercise many fold.

Bigger the scale of the exercise, more complex is the planning, preparation, coordination and conduct. The time taken to plan and conduct the complete exercise increases with scope with corresponding increase in disruption to normal functioning of stakeholders and participating agencies. Hence for large scale exercises, the scope of the exercise would need to be moderated. For example, instead of all hospitals or schools in the district, a few may be chosen for the exercise and others may nominate observers for the exercise. Similarly, the number of first responder agencies may be restricted or some of them may be asked to participate with skeletal strength.

It is good practice to include Symposiums and mock drills in the overall training calendar. These are important training tools and enhance capabilities of the community to effectively respond to disasters. Conduct of Symposiums on specific subjects such as Early Warning, establishment of relief camps, fire fighting, etc and mock drills for specific operations such as

school evacuation, search and rescue in collapsed structures, medical first aid, etc, before a major TTEx or ME will pay rich dividends in improving awareness, coordination and capabilities. The subjects of Symposiums and ME may be chosen based on the specified priorities of the senior leadership or the weaknesses and gaps identified during previous exercises.

5.7 Phases of a DMEx

A DMEx can be divided into the following four phases:

- Planning;
- Preparation;
- Conduct; and
- Documentation and Follow up;

Each of these phases can be further broken down into smaller steps. The figure below gives an overview of the process. Each of the phases and steps are described in detail in the subsequent chapters.

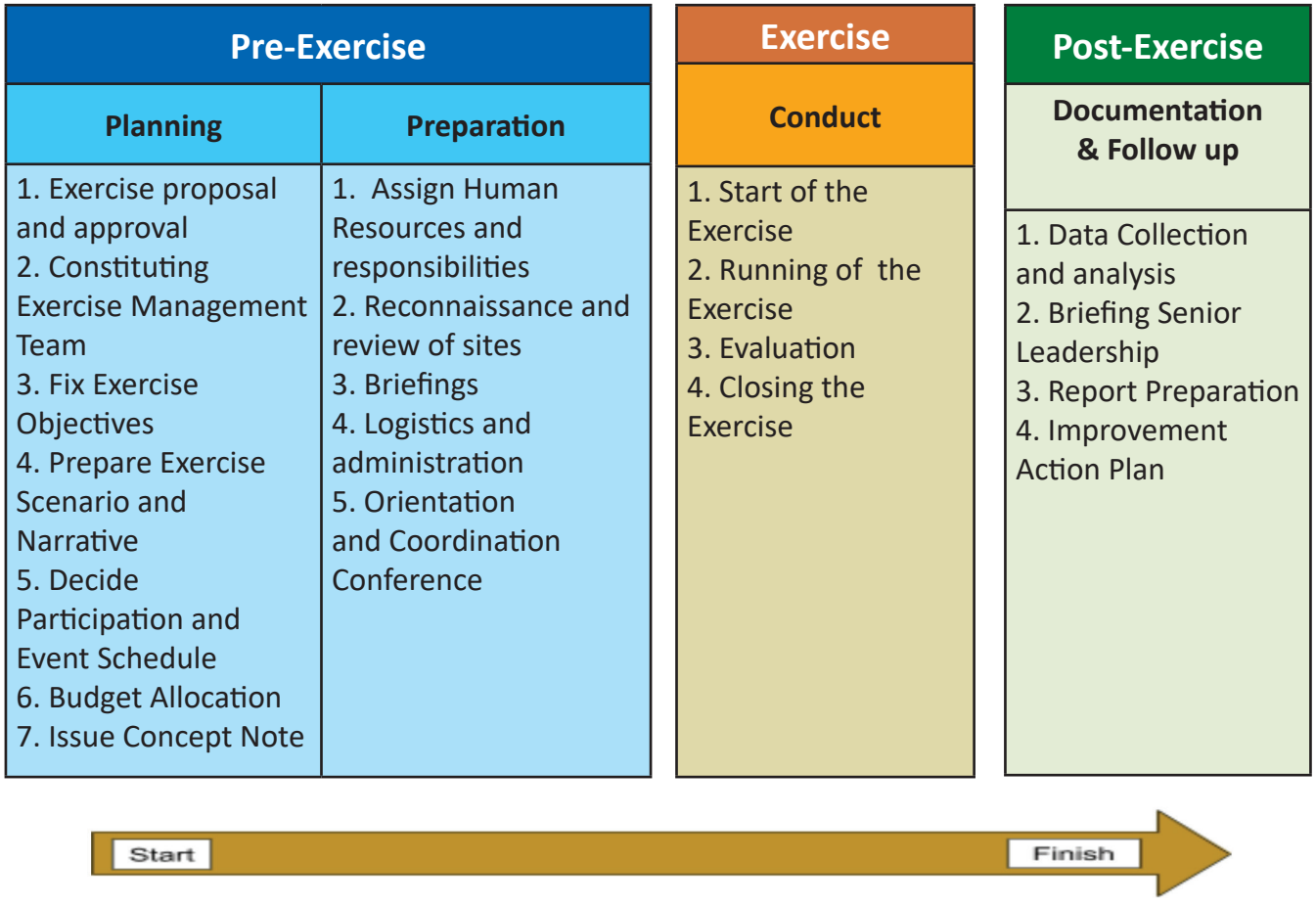


Figure 5.4: Summary of DMEx Phases and Steps

5.8 Exercise Management Team

An Exercise Management Team (EMT) must be formed to take forward the various activities of the exercise in a systematic manner. The EMT carries out the planning and design of the exercise, coordination with all stakeholders, formulation of the exercise scenario and the narratives, cater for logistics and administration, actual conduct and documentation of the exercise.

An EMT is headed by an Exercise Director who is generally a senior official heading the DM division. The Exercise Director appoints the Exercise Controller who is invariably an experienced DM official or professional. The broad organisation of the EMT is given below along with a brief description of the constituent blocks. Depending on the scale and scope of the exercise, all the constituent blocks or a subset of the same may be activated. Functions of one or more constituent blocks may be combined into one functional entity. Similarly, additional positions may be created by the exercise controller for ease of functioning.

5.8.1 Exercise Director

The Exercise Director provides strategic leadership and directions for the planning and conduct of a DMEx. The exercise director is responsible for all approvals related to the exercise.

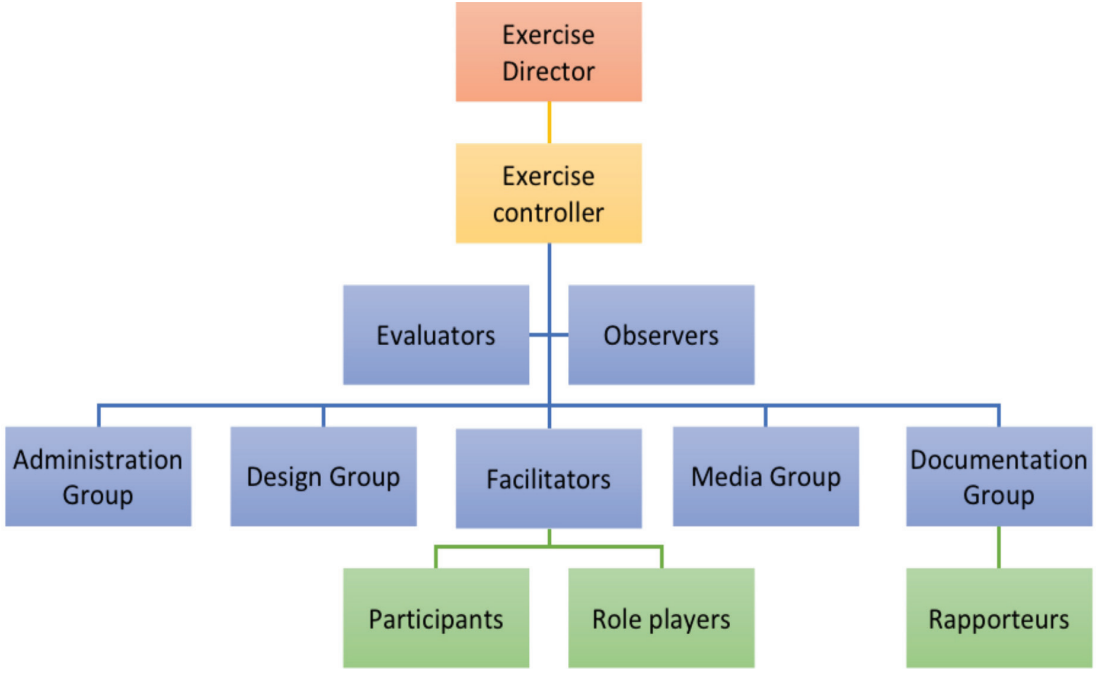


Figure 5.5: Organisation of the Exercise Management Team

5.8.2 Exercise Controller

The Exercise Controller supervises the overall conduct of the DMEx and ensures that the exercise proceeds as planned. The Exercise controller is responsible for achieving the objectives of the DMEx. The evaluators and the observers provide the Exercise controller with real time feedback on the progress of the exercise. Facilitators assist him in the conduct of the DMEx.

5.8.3 Evaluators

Evaluators collect and analyse the exercise data and determine whether the objectives of the DMEx have been met. Their evaluation includes both the performance of the participants as well as the conduct of the exercise. They are responsible to identify the strengths and the areas for improvement. The hotwash and the debriefing sessions are generally conducted by the evaluation team.

5.8.4 Observers

Observers are officials from the neighbouring States or districts, other organisations and departments, or experts who are invited to witness the DMEx. Observers do not actively participate in the DMEx. The observers may want to witness the exercise to gain experience in the conduct of the exercise or learn best practices for implementation in their respective organisations.The experts are invited as observers to seek guidance in their areas of expertise.

Observers from neighbouring States or districts also help in enhancing coordination, cooperation and understanding of each other's capabilities. This is particularly useful during actual disasters in coordinating joint response.

It is a good practice to seek their feedback before closing the Exercise. Their insights on the conduct of the exercise and performance of the participants can be a useful input in formal evaluation of the exercise.

5.8.5 Facilitators

Facilitators assist the Exercise Controller in conduct of the DMEx by delivering scenarios and narratives and controlling the flow of the exercise. They monitor the progress closely and ensure objectives of the exercise are met within the allotted time. For smaller exercises, there may be no facilitator and the Exercise Controller may take on the role of the facilitator. For larger exercises, each exercise site has one or more facilitators. Facilitators are the first point of contact for the participants for clarification of doubts or any requests.

5.8.6 Participants

Participants are persons for whom the exercise is being conducted. They are expected to take decisions and actions as per their assigned roles in consonance with existing plans, procedures and capabilities.

5.8.7 Role Players

Role players function under the facilitators and help simulate a disaster or an emergency situation. They play the part of the persons affected by the disaster in various ways and provide an element of realism to the simulated situation.

5.8.8 Design Group

The design team is responsible to develop the exercise scenario and narratives based on the disaster being played out and the objectives of the DMEx.

Picture 5.3: Role players enacting the role of the injured in the disaster

5.8.9 Administration Group

The Administrative Team is responsible for all the administration, logistics and coordination related functions and the overall process of organising the DMEx. They ensure availability of manpower, supplies, equipment and resources for the exercise including transportation and accommodation for all. The administration team is additionally responsible for budget preparation and management of funds for the DMEx.

5.8.10 Media Group

The media group handles all publicity, public awareness and media related functions. They are responsible for photography, coordination with the media for coverage of the DMEx, preparation of press releases and publicity material, management of social media coverage and organising interviews with key DM officials.

5.8.11 Documentation Group

The documentation group is responsible for data collection, note taking and preparation of the exercise report at the end of the exercise. They are assisted by the other members of the EMT.

CHAPTER: 6

PLANNING

6.1 Overview

DMEx are complex events involving multiple stakeholders. Hence they require detailed planning for success and smooth execution. The planning phase of a DMEx has been divided into smaller steps which shall be described in this chapter.

6.2 Introduction

The support and involvement of the senior leadership in the Government or the Organisation are essential for the effective planning and the conduct of any exercise. In fact the starting point for a DMEx is the expressed intent and approval by the senior leadership to conduct the exercise. Based on this, an Exercise Management Team (EMT) must be formed to take forward the various activities of the exercise in a systematic manner. The EMT carries out the planning and design of the exercise, coordination with all stakeholders, formulation of the exercise scenario and the narrative, cater for logistics and administration, actual conduct and documentation of the exercise.

The planning phase consists of several constituent steps. These are:

- Step 1: Exercise proposal and approval.
- Step 2: Constituting Exercise Management Team.
- Step 3: Fix Exercise Objectives.
- Step 4: Prepare Exercise Scenario and Narrative.
- Step 5: Decide Participation and Event Schedule.
- Step 6: Budget Allocation.
- Step 7: Issue Concept Note.

6.3 Steps

6.3.1 Step 1: Exercise Proposal and Approval

The State or District DM Authorities, senior management of an organisation or the ESF vertical consider mooting an exercise proposal after carrying out a review of the existing level of DM preparation and response capabilities. Review helps to decide upon the areas of improvement. This is generally carried out before the flood or cyclone season. It could also be carried out

on receipt of predictions or early warnings from the meteorological department for events such as heat wave, cold wave or drought. The review is also initiated independently for areas vulnerable to hazards like earthquake, landslides or chemical/ industrial accidents.

The review takes into consideration the following:

- Changes in hazard and vulnerability profile or demography.
- Changes in DM policies and plans.
- Reports of previous mock exercises and Improvement Plans.
- DRR priorities and capability development plans.
- Cross sectoral consultations with entities involved in relief and response during disasters.

The DMEx proposal could also be based on a previously approved training calendar which is formulated annually based on the training needs of the stakeholders.

In principle approval is then accorded by the Government or the Organisation Head based on which an Exercise Management Team (EMT) is constituted to plan and conduct the DMEx.

6.3.2 Step 2: Constituting Exercise Management Team

An Exercise Management Team (EMT) is constituted which takes on all the functions and responsibilities related to the DMEx. The broad organisation of the EMT is described in the previous chapter. Depending on the scale and scope of the exercise, some appointments or sections may be merged or added.

The EMT is headed by the Exercise Director, who at the State level could be the Principal Secretary (Revenue and DM). At the District level, this is generally the chairperson of the DDMA. In an organisation, the Exercise Director is generally a senior management official. The Exercise Director appoints the Exercise Controller.

Exercise Controller in all cases in an experienced DM official or professional. The Exercise Controller reports to the Exercise Director and is responsible for overall planning, design and conduct of the mock exercise. At the State level, this could be the CEO of the SDMA, a senior professional from the NDMA, NDRF or any other nominated experienced DM professional from a national or international DM organisation.The Exercise Controller puts together the rest of the EMT as per the exercise scale and scope.

The key responsibilities of the EMT are:

- Fix the exercise objectives.
- Preparation of the concept note.
- Develop scenario, narrative and injects.
- Budget and resource management.

- Logistics and administration.
- Participation nominations and briefing.
- Control of the exercise.
- Safety.
- Media and public awareness.
- Evaluation of the exercise.
- Coordination amongst government ministries and departments, ESFs, private sector, humanitarian organisations, NGOs and all other key stakeholders.
- Documentation of the DMEx, reports and briefings.

6.3.3 Step 3: Fix Exercise Objectives

Well deliberated and clearly defined Exercise Objectives are the foundation of any mock exercise. The Exercise Objectives must be Specific, Measurable, Achievable, Relevant, and Time-bound (SMART). They should be arrived at through consultations with senior leadership and other key stakeholders. While the overall aim of the DMEx is to improve the response capability, they should be aligned to the DRR priorities of the Government. The entire design and conduct of the DMEx depends on the Exercise Objectives.

Relevant questions that need to be answered while formulating the objectives are:

- What are the DRR priorities of the Government?
- Which DM plans or SOP is to be tested?
- Who is to be tested?
- Are the hazards and vulnerabilities well mapped and addressed?
- Which capabilities need strengthening?
- Which ESFs need to be specifically addressed?
- What are the gaps identified during previous exercises?
- What are the training needs of the community, responders and ESF officials?
- Is there any change in the DM Policy, DM organisation, community demography or vulnerability profile?

6.3.3.1 Broad Exercise Objectives

Broad objectives of a DMEx are listed below. The ME could have all or a subset of these objectives. This would depend on the scale and scope of the ME, resources and budget, time available for the ME and the priorities of the Government or the organisation:

- Validate the DM plan and associated SOPs.
- Evaluate decision making capacity of DM officials based on existing DM Policies, Plans and SOPs.
- Institutionalise the use of Incident Response System (IRS) in the response mechanism.
- Test coordination amongst the Emergency Support Functions and other stakeholders.
- Train and upskill first responders and community volunteers.
- Generate Public Awareness and enhance community participation.
- Identify gaps, if any, in the resources, communications and response capabilities.

6.3.3.2 Examples of SMART Exercise Objectives

Exercise objectives must be Specific, Measurable, Achievable, Relevant, and Time-bound (SMART). Some examples of such objectives for a District Level ME are:

- To validate the DM Plan of the XXX District for an earthquake scenario.
- Increase understanding of the role and responsibilities of various stakeholders as per Incident Response System.
- To test and evaluate the efficacy of Common Alerting Protocol (CAP) based Early Warning System.
- Practise the evacuation of the YYY area and setting up of a relief camp at ZZZ.
- Evaluate functioning and capabilities of DEOC during disasters including IRS based response
- Collect rapid assessment data and prioritise deployment of resources
- Test Disaster communication network within District and to State HQs
- Practise restoring essential services like electricity and water at critical infrastructures
- To validate onsite medical assistance plans and surge capacity of participating hospitals
- Practice rescue from collapsed structures
- Validate the evacuation plans of participating Schools
- Practise simultaneous fire drills at multiple locations
- Strengthen coordination amongst all participating agencies.
- Coordinate efforts of NGOs and community volunteers
- Apply lessons learnt from previous mock exercises

The granularity of the objectives will vary depending upon the level of the DMEx. Number of objectives will also vary according to the time and resources available for the exercise. Exercises with too many objectives can be difficult to manage and evaluate.

6.3.4 Step 4: Prepare Exercise Scenario and Narrative

A scenario is a description of the disaster or emergency situation on which the DMEx is based. All the discussions or actions take place in relation to this scenario. It consists of a background or the opening narrative. The scenario then goes on to describe what happens or could have happened next in terms of impact of the disaster or the emergency situation on the people and infrastructure of the community. The participants are expected to make decisions or react to the emerging situations based on the existing DM policies, plans, SOPs and the available capabilities and resources. These emerging sequences of events are described to the participants as narratives or injects.

The scenario along with its narratives is the script around which the DMEx unfolds in a controlled manner. Most injects are pre-planned. However, sometimes they could also be made impromptu based on the unexpected reactions of the participants to a given situation or bring out any particular lesson.

An exercise scenario will include information on type and intensity of the disaster, geographical extent of its impact, population affected by the disaster, number of persons killed and injured and effect on infrastructure.

A realistic, probable and comprehensive exercise scenario to which the key stakeholders and local community can relate, will contribute immensely to the successful conduct of the DMEx. It should be based on the risk profile of the State or the Organisation. Any past real world disaster or emergency situation could form the basis of the exercise scenario. The damages or the effect of such an event must be extrapolated to the present demography and infrastructure.

Before drafting the Exercise Scenario, review the proposal and objectives of the exercise. Consultation with senior leadership in the Government or the organisation will also help capture their intent and DRR priorities. The HRVA of the State or organisation must be studied along with the DM Plan. There may be a need to review previous exercise reports. Interaction with key stakeholders will also assist in understanding the local context.

6.3.5 Step 5: Decide Participation and Event Schedule

6.3.5.1 Participation

The participants for a DMEx will depends upon:

- Objectives of the exercise;
- The scenario;
- Scale of the exercise; and
- Available time and resources;

The guiding principles for deciding participation are:

- All relevant stakeholders who have responsibilities in the DM Plan and those essential to meet the objectives of the DMEx must be included.
- Actual decision makers during real life disasters and emergencies must participate. Tendency to nominate subordinates be curbed. Participants must also be in a position to ensure follow up actions after the DMEx.
- Decision makers from all ESFs must be included. A summary of ESFs along with the primary and supporting agencies responsible for them is at Annexure IV.
- There must be sufficient gender and age diversity.
- All vulnerable groups (those exposed to risks) must be represented. Special efforts must be made to include the disabled, elderly, women, children and persons belonging to the economically weaker sections of the society.
- Cater for sufficient support staff, evaluators and role players.
- Representatives of the Central Government and other States/ Districts sharing geographical boundaries must be invited as observers for better coordination during actual emergencies.
- Relevant NGOs and community groups must be represented

6.3.5.2 Event Schedule

A detailed timeline should be created considering the time required for planning and preparation, actual conduct of the exercise, debriefing and documentation. Sufficient time must be allotted for all events and activities based on the Scenario and the planned Injects. Adequate time must be given to participants to prepare for their respective roles and responsibilities and hence timely invitations must be sent before the actual conduct of the ME.

Preparations should begin sufficiently in advance depending on the scale, scope and complexity of the DMEx.

6.3.6 Step 6: Budget Allocation

Preparation of the budget for the DMEx is undertaken after finalisation of the exercise objectives, scenario and participation. The responsibility of the budget preparation for a State Level and district DMEx is that of the SDMA and DDMA respectively. The budget proposal is to be submitted to the Principal Secretary (Revenue and DM) for approval. The primary responsibility of financing the DMEx in the State is that of the State Government itself. Other participating stakeholders may also support the budget for the DMEx or provide resources in support of the exercise.

At the State level, the DMEx and associated activities can be funded through the newly constituted 'Preparedness and Capacity Building Funding Window' of the State Disaster Response Fund.

Ministry/ Department level DMEx are generally financed by themselves from their own funds. Similarly Organisation level exercises are financed by the organisation itself.

The major heads that the budget must cover are:

- Meetings and coordination.
- Resource persons (Travel, boarding and lodging).
- Venue booking and preparation.
- Training material.
- Hiring or procurement of any material or resource needed for conduct of the exercise
- Awareness Campaigns and Publicity Material.
- Exercise material and Documentation.
- Transportation.
- Refreshment for participants.
- Miscellaneous/ ancillaries

6.3.7 Step 7: Issue Concept Note

The Concept Note serves as an introduction to the ME for all participants. It contains:

- Background information;
- Exercise objectives;
- Exercise scenario in brief (without injects);
- Broad timelines and schedule;
- List of participants;
- Logistics and administrative information; and
- Nodal persons for any clarifications;

The Concept note for the exercise must be issued for the information of all participants and stakeholders sufficiently in advance. This will enable timely completion of preparations and preliminary actions by all concerned.

CHAPTER: 7

PREPARATION

7.1 Overview

Large scale DMEx involve a number of ministries, departments and stakeholders and proper preparation shall go a long way in successful conduct of these exercises. Briefings, coordination and logistics are the main activities in the preparation phase of the exercise. The preparatory actions required to be completed before the conduct of the DMEx are enumerated in this chapter.

7.2 Introduction

After the planning of the exercise is complete and the Concept Note shared with participants, it is time to make preparations for the smooth and successful conduct of the DMEx. Numbers of activities happen in any DMEx which involve a large number of stakeholders and participants. This needs effective coordination so that each stakeholder and participant is aware of their role and responsibilities. Dedicated groups that are part of the EMT look after different aspects of the exercise. They report to the Exercise Controller who monitors the overall progress of the preparations as per laid down schedule.

The Preparation Phase for the DMEx may be divided into the following steps:

- Step 1: Assign human resources and responsibilities.
- Step 2: Reconnaissance and review of sites.
- Step 3: Briefings.
- Step 4: Logistics and administration.
- Step 5: Orientation and coordination conference.

7.3 Steps

7.3.1 Step 1: Assign Human Resources and Responsibilities

Human resources are required for executing various functions related to the DMEx and are sourced from multiple agencies like:

- NDMA, NDRF & NIDM, Armed Forces & CAPFs at the Central Level;
- SDMA, SDRF, ATIs, Police, DDMA and Fire & Emergency Services at the State Level;

- Early warning agencies such as IMD and CWC;
- Civil Defence, Home Guards, NCC, NYKS, Aapda Mitra and similar volunteer organisations;
- Volunteers from hospitals, schools and industry;
- National and international DM and humanitarian organisations;
- NGOs; and
- Other professionals;

Nodal officers may be nominated from these organisations to coordinate their effort. Specific responsibilities must be given to these persons like observation and evaluation, demonstrations and presentations, setting up of command post, managing staging areas, augmenting EOCs, playing the role of injured, media and publicity, traffic and crowd control, rapporteuring and documentation, administration, logistics, and exercise safety. Relevant exercise details are shared and detailed briefing is given to them depending on the allotted tasks.

At this stage, some additional officials and resource persons may also be included in the EMT with specific charter of duties.

7.3.2 Step 2: Reconnaissance and Site Visits

Prior to the DMEx, the EMT should make a reconnaissance visit to the places where various activities of the DMEx are proposed to be conducted. The Exercise Controller along with the local administration must identify sites for establishment of Incident Command Posts, staging areas, relief camps, medical aid posts, etc which are required during the response.

The routes for ingress of responders and egress of evacuees to and from simulated accident sites need to be given special attention. Aspects of safety, traffic divergence and crowd management on exercise days must also be coordinated.

In case air effort for rescue or supply of relief material is being rehearsed during the DMEx, sites for helipads as well as dropping zones may be visited.

All the indoor venues could also be reviewed for capacity and adequacy of other arrangements. The EMT may also take this opportunity and visit participating hospitals and schools where mock drills are proposed along with local administration for better coordination.

7.3.3 Step 3: Briefings

Briefings are needed before the DMEx to make the participants and other stakeholders aware of their role and responsibility. The Exercise Controller needs to brief the senior leadership in the Government or in an organisation to update them, seek their support and to ensure that the DMEx objectives and progress align with their directives, priorities and intent. The Exercise Controller also needs to brief various groups in the EMT like design, administration, media and documentation groups, evaluators, facilitators, role players etc. Participant briefing is carried out later, just before the start of the DMEx.

While some briefings may be clubbed together, it is generally advisable to hold separate briefings for different categories of participants and stakeholders. Separate briefings have the advantage of delivering specific and relevant information cutting out extraneous material.

7.3.3.1 Senior Leadership Briefing

The Senior leadership must be consulted and kept updated in all phases of the exercise. Consultation before the designing of the DMEx will be useful to understand the requirement as well as the DRR priorities of the senior leadership. A briefing in the preparation phase of the DMEx will update them on the progress so far as well as instil confidence in the process. This is also an opportunity to secure their active participation.

7.3.3.2 Briefing the EMT

The Exercise Controller exercises control over the DMEx through the EMT and hence all members of the EMT must be adequately briefed on the DMEx to cover all relevant information, schedule of events, resources, methodology, distribution of responsibility, logistics arrangements, safety aspects as well as the progress in preparations. This ensures that everyone is clear about their role and responsibilities. An exercise handbook may be created which will act as a ready reference containing all relevant information. This may be distributed during the briefing.

In addition to the above, briefing to the evaluators needs to cover DM Plan and SOPs in detail to enable them to gauge whether actions and decisions by participants during the DMEx are as per existing policies. They need to be made conversant with the location of the exercise as well as location of the resources that need to be moved by the participants.

Briefing to facilitators would additionally cover the exercise scenario, narrative and injects in detail to enable them to run the simulation effectively and improvise during the conduct of the DMEx if the need so arises.

Briefing to the Role Players or Actors need not be very elaborate and is generally undertaken by the facilitators prior to the simulated event or accident at the exercise site itself. It should include safety issues especially in scenarios like rescue from high rise buildings, collapsed structures or water bodies.

Observers from neighbouring Districts, States or departments not directly participating in the exercise need also to be briefed on the exercise setting, scenario, schedule of events, exercise methodology and other related information to maximise the learning experience for them.

Some things to keep in mind while briefing are as follows:

- Introduce the team members to each other before commencing the briefing.
- Start with review of the concept note and how the DMEx shall unfold.
- Cover the final schedule of events with timings and venues.
- Recapitulate roles and responsibilities.

- Highlight major issues to be coordinated.
- Discuss safety aspects.
- Cover logistic arrangements.
- Brief on communication arrangements.
- Have a question and answer session in the end to clear any lingering doubts.
- Sufficient copies of handouts and formats for various reports must be available.

7.3.4 Step 4: Logistics and Administration

For the success of any DMEx, it is imperative that the logistic and administrative arrangements are in place well in advance of the conduct of the exercise. A dedicated group within the EMT caters for this requirement.

Some of the areas that need attention are described below:

- Booking and Preparation of Venues/ Sites. The DMEx venues must be booked in advance. Adequate sitting arrangement, availability of breakout session rooms, audio-visual equipment, presentation arrangements, power backup and availability of Internet must be checked. Rest rooms for all participants including those with special needs must be ensured.

For outdoor sites, proper route marking, parking, traffic management and security arrangements need to be ensured.

- **Office Supplies and Other Material.** All the office supplies and stationery that the EMT and the participants need must be catered for along with other material like maps, copies of DM Plan, exercise handouts, etc.
- **Accommodation.** Adequate staying arrangement for out station organisers and participants would be needed preferably close to the exercise venue.
- **Transportation.** This will be needed by the EMT as well as participants who do not have their own transportation. Parking must be coordinated for personal vehicles.
- **Invitations and Registration.** Invitations for the events must be sent out in advance. A registration desk must be established to hand out colour coded name tags on arrival. These help identify the support staff, participants, media and other categories of attendees to one another and facilitate access control. The support staff and organisers may additionally be issued I-Cards if needed from a security point of view. Sign-in sheets help to keep track of attendance and later correspondence with participants.
- **Publicity Material.** Banners, Hoardings, Posters and handouts may be required.
- **DM Equipment.** The DM equipment required for demonstrations, mock drills and simulations must be tested and kept ready.

- **Documentation and Photography.** Rapporteurs are detailed to document the DMEx. Arrangements for photography shall help in publicity, public awareness, record keeping and reports.
- **Communication setup.** A sound communication plan with adequate communication equipment will help in coordination and control, move of resources and efficient conduct of the DMEx. Arrangements may be required for live streaming of events from different sites to a common venue or control room.
- **Food and Refreshments.** These must be catered for depending on the budget and the duration of the DMEx.
- **Liaison Officers and Nodal Officers.** These are needed on a case to case basis both for coordination amongst different agencies as well as for the VIPs attending the DMEx.
- **Management of Volunteers.** This includes their nomination for different tasks, briefing, control, movement and safety.
- **Media Briefings.** Regular press releases and updates for the media must be planned. Separate space in the venue may be earmarked for media briefings and interviews with DM officials.
- **Arrangements for Persons with Special Needs.** As the DMEx need to be all inclusive and accessible for the differently abled persons, adequate arrangements must be made for the elderly and persons with special needs.

7.3.5 Step 5: Orientation and Coordination Conference (OCC)

Orientation and Coordination Conference is an important step which helps bring all stakeholders together on a common platform. It provides necessary background and information to all stakeholders so that they are clear on the preparatory actions that need to be carried out before the DMEx.

For State level DMEx, the OCC is held at the State Capital and is preferably chaired by the Chief Secretary, the Principal Secretary (Revenue and DM) or the Vice Chairman SDMA. The Exercise Controller moderates the proceedings and gives detailed briefing about the exercise.

Representatives of ESF and other relevant departments, first responder organisations, early warning organisations in the State, Police and District Nodal Officers attend physically. The other District level officers normally attend through video conferencing. All inter agency and cross sectoral coordination issues are resolved during the conference.

Picture 7.1: Orientation and Coordination Conference for a State Level ME

Preparatory activities commence in the State and Districts after this conference. These activities along with other logistics arrangements are required to be completed in a time bound manner before the commencement of the DMEx.

The Print and Broadcast Media is also briefed on the DMEx during this conference. Overview of the exercise, schedule of events, timings, locations along with material on the hazard being simulated are also shared with the media with a view to give the DMEx a wide publicity to ensure community awareness and participation. Endeavour is to launch a coordinated media campaign in the period before the commencement as well as during the DMEx.

Some of the preparatory activities that are required to be undertaken and should be covered during the Orientation and Coordination Conference are listed below:

- Update the Disaster Management Plans and SOPs (if required).
- Review the facilities at the EOC at various levels and update the telephone and email contact directories.
- Review the notification of Incident Response Teams at various levels as per the Incident Response System. Ensure that the notified officials are adequately trained and sensitised.
- Update public and private resource directories (Viz. Ambulance, Fire Tenders, JCB, Dumper, Recovery Vehicle, etc.). Impetus is given to update the database of India Disaster Resource Network (IDRN).

- Review Disaster Communication Network. Ensure all satellite phones, radios and other communication equipment are tested and functional.
- Review availability and serviceability of drones/ UAVs.
- Prepare community awareness campaigns for the disaster being practised including publicity material like handouts and hoardings.
- Ensure all early warning systems are functional.
- Preparation of sites for Incident Command Posts, Staging Areas and Relief Camps at sites where the disaster is being simulated.
- Ensure sensitisation of the Aapda Mitra and serviceability of their equipment.
- Identification of volunteers for role playing and other tasks.
- Identification and coordination with participating schools and hospitals.
- Availability of adequate transportation.
- Arrangements for documentation including photography.

CHAPTER: 8

CONDUCT

8.1 Overview

This chapter describes the conduct phase of the DMEx. The steps in conduct of both the discussion based exercises and the action based exercises are the same. Differences in conduct for different types of exercises have been highlighted while describing each step of the conduct phase. Evaluation of the conduct of DMEx and performance of various participants and emergency support functionaries is a continuous process and is covered in this chapter. Activities like hotwash and debriefing which are conducted before the close of any exercise are also enumerated here.

8.2 Introduction

After the Orientation and Coordination conference, all the stakeholders are clear on the preparatory actions required to be completed by their respective departments and organisations before the actual conduct of the DMEx. Sufficient time is allotted for completion of these activities. Stakeholders complete these tasks and congregate once again for the actual conduct of the DMEx.

The Conduct phase of the mock exercise is divided into the following steps:

- Step 1: Start of the Exercise
- Step 2: Running of the exercise
- Step 3: Evaluation
- Step 4: Closing the exercise

8.3 Steps

8.3.1 Step 1: Start of the Exercise

8.3.1.1 Opening ceremony

The mock exercise normally commences with a brief but formal opening ceremony. This is an optional step but can be useful in involving the senior leadership as well as getting all the participants together for introduction and subsequent briefing. Presence of senior leadership imparts the event the requisite gravity and is helpful in disseminating their vision on DRR directly to the participants. The welcome address and the opening remarks by various dignitaries sets the ball rolling, giving out the overall context, the purpose of the DMEx, its importance and the brief agenda.

8.3.1.2 Media Interaction

The opening ceremony is an opportunity for the senior leadership to interact with the media to convey the Government's or the Organisation's vision and strategy to the public with respect to DRR. It is also an opportunity for the organisers to brief the media on the DMEx and its agenda. Press briefs and other handouts on the DMEx as well as hazard specific material can be given to the media for wider circulation. This is an important catalyst in generating public awareness.

8.3.1.3 Briefing the participants

All participants will be briefed before commencement of the DMEx by the Exercise Controller or the Facilitators. The participants must be encouraged to actively participate and contribute to the exercise. Participants must be assured that the purpose of the exercise is to collectively learn and not judge the participants. The briefing could be a collective briefing given centrally or the individual groups can be briefed separately on various sites where different situations are being simulated. Former will be more conducive to a Tabletop Exercise and the later mode of briefing would be apt for a Mock Exercise.

The briefing to the participants must include:

- The objectives of the DMEx;
- Introduction of various exercise appointments;
- Assignment of roles and responsibilities to the participants;
- Modality of conduct and rules of engagement;
- Schedule of events;
- Relevant logistic issues;
- Safety issues; and
- Question and answer session to allow participants to clarify any doubts about the DMEx;

8.3.1.4 Opening narrative

The Exercise Controller or the facilitator starts the DMEx by recapitulating the exercise scenario and related background information including all actions that have deemed to have been completed prior to the current time in the simulation. This is followed by the opening narrative which outlines the current situation. The opening and the subsequent narratives are followed by 'requirements' which the participants have to fulfil.

For a TTEx, the requirement could be to answer questions like:

- What is your assessment of the situation?
- How would you get additional information?

- What are the resources at your disposal? How will you deploy them?
- What are the possible courses of action?
- What coordination would be carried out with external agencies?

For a mock exercise, the requirement would generally be action on ground to implement the Incident Action Plan (IAP) made by the IRT. For example:

- Moving of manpower and equipment resources to a staging area;
- Setting up of Incident Command Post;
- Assessment of the situation and launching operations like search and rescue, evacuation drills, road axis clearance etc.;

8.3.2 Step 2: Running of the Exercise

8.3.2.1 Tabletop Exercise (TTEx)

Tabletop exercises can be run by the Exercise Controller himself or a facilitator can run the exercise on behalf of the Exercise Controller. Running a tabletop exercise, entails a controlled unfolding of the exercise as per pre-written script and narratives. The opening narrative which is given after describing the Exercise Scenario can be followed by some general requirements.

Some examples of general requirements are brief discussions on:

- DM Act 2005
- IRT notification and structure
- HRVA of the State or the District with respect to the hazard for which the TTEx is being conducted
- Appreciated vulnerabilities of the State or the District.

Thereafter, the exercise is progressed through a series of narratives or 'injects' followed by further requirements for the participants. Participants are expected to discuss the situation at hand and arrive at workable solutions or courses of action based on existing DM policies, plans and SOPs of the organisation.

Tabletop exercises are structured loosely and there is freedom in modes of delivery of narratives and other info to the participants. The delivery could be verbal, through presentations, by means of handouts or a combination of means. The facilitator also has a degree of freedom to deviate from the script to address any important issue arising during the discussions.

Picture 8.1: Tabletop exercises in progress

The facilitator or the exercise controller is not expected to give 'ideal' or 'model' solutions to the requirement or the posed problems. The problems are required to be solved by the participants through discussion based on their training and experience. The facilitator or the exercise controller endeavours to keep the discussion on track by interjecting at opportune moments and giving cues if the discussion appears to be stalled or digressed.

The evaluators make note of their observations and carry out continuous evaluation throughout the course of the exercise.

Sometimes, there may be specialised requirements for a subset of participants. These can be taken up separately in 'break out' sessions without disturbing the main discussion. These sessions are also facilitated sessions and have to be planned with provision of additional resources. 'Break out' sessions provide a good opportunity for detailed discussions without derailing the time plan for the tabletop exercise as they are carried out concurrently with the main discussion.

The facilitator needs to skillfully steer the discussion by the participants to ensure that all issues pertaining to the problem get explored while maintaining the focus of the TTEx. The facilitator also ensures that the tabletop exercise runs as per schedule.

Some of the attributes that an effective facilitator must possess are as follows:

- Strong leadership and communication skills;
- Ability to engage with participants, control the proceedings and steer the discussions;
- Flexibility and adaptability during conduct;

- Ability to encourage all participants, especially the quieter ones to participate in the discussions;
- Skillful mediation of conflicting viewpoints;
- Ability to foster a learning environment where participants are encouraged to contribute and draw positive lessons even from mistakes; and
- Effective time management to complete all objectives and associated tasks within allotted time;

8.3.2.2 Mock Exercise (ME)

A mock exercise is an action oriented exercise where the participants react to simulated situations by taking decisions and initiating actions. The exercise scenario and opening narrative remains similar to the TTEx wherein the hazard that triggers subsequent response and relief actions is described and all actions completed up to the current time in the simulation are given out.

Subsequent narratives or injects, are site specific wherein accidents or effects of the hazard are simulated. The participants are required to assess the situation, make an incident action plan, mobilise resources and initiate response actions. Number of sites may be activated simultaneously. The narrative or injects may be verbal, in the form of a situation report received at the EOC, a call on a helpline, a news bulletin, an early warning on the mobile or actors simulating a scene through role playing.

The exercise is progressed through situation updates and new injects which require the participants to take further decisions and action. To depict actual stress conditions of a real life emergency, a resource crunch or time pressure is created through stipulations in the injects.

The EMT endeavours to make the narratives, as similar to real life emergencies and disaster situations as possible. This instils seriousness in the participants and encourages realistic responses.

The Exercise Controller manages the overall ME through the exercise facilitators and other members of the EMT. The facilitators at the various simulation sites control the pace and flow of the exercise by releasing situation updates and by granting or denying success to the actions undertaken by the participants.

ME are complex involving numerous stakeholders and multiple sites. They need to be planned diligently and executed meticulously. There may be a need to set up dedicated communication arrangements for diverse groups to communicate and coordinate their activities. Such exercises are best controlled from the EOC. Multiple audio video feeds from the field along with calls, emails and social media messages help maintain situational awareness at the EOC. The Exercise Director and the senior management can also be updated and briefed on the progress of the ME at the EOC with ease.

Picture 8.2: Various activities during a Mock Exercise

The Exercise Controller remains in continuous communication with the facilitators at multiple sites from the EOC to closely monitor and control the overall conduct of the exercise.

Extensive preparation is required for running the mock exercise smoothly in a safe and secure environment. Some of the actions required to be completed before commencement of the exercise are:

- Exercise equipment and stores are checked and delivered at site;
- Communication arrangements are tested and made known to all participants;
- Arrangement for creation of effects like smoke, fire, noise, rubble or debris are ensured;
- Members of the EMT are given the required Exercise document;
- Role players are briefed, makeup carried out and positioned on site;
- Perimeter and route marking is carried out. Off-limit areas are marked prominently;
- The local community at the exercise sites is alerted and made aware of the conduct of the mock exercise;
- Availability and use of harness, helmets and other safety equipment is ensured;
- It is ensured that members of EMT arrive in time at the exercise locations and are pre-positioned effectively before the start signal is given;
- Access control is ensured at exercise sites;
- Contingency plan is prepared and practised to cancel, pause or prematurely terminate the mock exercise if needed.

8.3.3 Step 3: Evaluation

Evaluation is a formal assessment of the conduct of the DMEx, performance of the participants, levels of preparedness and emergency response capabilities of the organisation. It determines the strengths of the organisation and areas of improvement. Evaluation also measures the degree to which the DMEx was able to achieve its intended objectives. It is a continuous process carried out throughout the course of the mock exercise.

Evaluation criteria will be different for discussion based exercises and action based exercises. For the former, the focus is on the effectiveness of policies, plans and procedures. For the latter, the focus is on response and capabilities.

8.3.3.1 Evaluators

Depending on the scale and scope of the DMEx and number of concurrent activities planned for the exercise, several evaluators may be needed for evaluation. Evaluators need to assess decisions and actions of the exercise participants as well as planning and conduct of the DMEx by the organisers. Hence, they need to be subject matter experts and experienced in this field.

Evaluators must be part of the DMEx from the planning stage itself. They should be part of all discussions of the EMT. The evaluation methodology should progress concurrently with the planning of the DMEx. They must meet often during the course of the exercise to update each other for a more comprehensive evaluation.

8.3.3.2 Evaluating the Performance of Participants

While evaluating the participants, evaluators closely observe their planning, discussions, decisions and actions in response to various injects. A free and frank feedback from the participants during the 'hotwash' immediately after the Exercise also assists in evaluation.

Performing under observation and in presence of evaluators is however stressful to the participants. The behaviour of the participants is likely to undergo a change under observation and true capabilities shall be masked. Hence, this activity needs to be carried out skillfully by experienced evaluators. Exercise participants need to be explained during the briefings that the purpose of the exercise is to test policies, plans and procedures and not people. They must be assured that specific individuals shall not be named or identified in the reports or during debriefing.

Some of the parameters for assessment of the performance of the participants are:

- Ability of the participants to assess the emerging situation appropriately;
- Ability to make timely decisions under stress and time pressure;
- Quality of the decisions and whether they are in line with existing policies, plans and SOPs;
- Optimal resource utilisation;
- Innovative solutions to solve the problems being faced; and
- Leadership and cooperation;

A sample exercise evaluation form is given at annexure-VI.

8.3.3.3 Evaluation of the Conduct of the DMEx

Evaluation of the conduct of the DMEx by the organisers from planning to completion of the exercise helps to document the event and provide feedback for improving the process. The planning and conduct of the DMEx may be assessed on the following issues:

- Aptness of the scenario and narratives;
- Preparation of venues;
- Availability of required resources;
- Effective briefings, timely flow of information and coordination;
- Communication arrangements;

- Time management;
- Safety and security; and
- Fulfilment of the exercise objectives;

8.3.3.4 Guidelines for evaluation

Some guidelines for effective evaluation are:

- Associate the evaluators with the ME as early as possible and involve them in all planning activities.
- Select the evaluators from outside the organisation undergoing the DMEx for objective reporting.
- Evaluators are given the objectives of the DMEx along with a list of tasks associated with each objective. Evaluators are briefed to record whether each task was fulfilled and time taken for the same.
- Pre-formatted forms must be prepared by the evaluation team so that evaluation is quantified. Forms must also have space for note taking to record on the spot observations of the evaluators.
- Evaluators must not participate in the DMEx or provide participants any assistance in completion of designated tasks.
- Select experts in DM policies, plans and procedures with adequate experience in response and relief activities as evaluators.
- Evaluators must prepare participant feedback form in consultation with the Exercise Controller for use during 'hotwash'. A sample participant feedback form is given at Annexure-V
- The analysis of collected data and notes is carried out and an evaluation report is prepared on the conduct of the exercise and performance of the participants. This document forms the basis of the Improvement Action Plan.

8.3.4 Step 4: Closing the Exercise

8.3.4.1 Ending the exercise

The end of the ME is decided by the Exercise Controller and is usually declared when the objectives of the ME are met or when the time allotted for the ME is finished. The decision to end the exercise is communicated to all the stakeholders through an inject or a message. On receipt of such a communique, the facilitators begin immediate debrief of the participants called the 'hot wash'.

8.3.4.2 Hot wash

A hotwash is an immediate debrief of participants when the exercise or an activity of the exercise is over. A hot wash affords an opportunity to the participants to destress and share their impressions on the conduct of the ME. This is normally carried out by the lead evaluator if the participants can be brought together at one venue for the hotwash. Otherwise, it is conducted by the evaluators or facilitators at each simulation site.

Hot wash is not a detailed debrief which happens later. It does not review the objectives of the exercise and performance of the participants. The idea here is to capture the direct and spontaneous feedback of the participants while their impressions of the events are fresh in their minds. It is a helpful tool to fill in the gaps in evaluation by the evaluators. When conducted after an activity or when a phase of the exercise is over, it gives the organisers an opportunity to do mid-course corrections if required.

The questions that are normally addressed are:

- How was the activity or the exercise conducted?
- How were the arrangements for the ME?
- Any administrative or logistic issues that hindered their performance?
- Are any changes suggested for the future?
- What could have been done differently?
- What are the decisions that worked well?
- What is their view of their overall performance?
- Do they wish to highlight any specific challenges that they faced?

8.3.4.3 Exercise Debriefing

The exercise debrief is an important activity in which the objectives of the exercise are reviewed with the participants to determine strengths and weaknesses of the Policies, Plans and Procedures as well as capabilities of the participants to effectively implement them. It gives the participants as well as the organisers feedback on the above issues and helps cement the learnings of the ME.

The participants are encouraged to speak freely on what in their opinion worked well and which areas need improvement. This is not a forum to criticise or castigate anyone. The debrief must be conducted in a positive environment.

Some important things to ensure during the exercise debrief are:

- Participants must share their views before the evaluators give out their assessment.
- Sufficient time must be allotted for this important activity.

- Specific individuals must not be named or identified during the debrief.
- While frank views are encouraged, care must be taken to put them across in a supportive manner.
- Lessons learnt and follow up actions which would also form part of the Improvement Action Plan must emerge clearly.

8.3.4.4 Closing Ceremony

The exercise debrief is followed by the closing ceremony which may include a closing address by the senior leadership, distribution of participation certificates and a vote of thanks. These are optional activities and not an essential part of the DMEx.

8.4 Safety Considerations

Action Based Exercises try to simulate situations that arise during real life emergencies and entail a degree of risk. It is the responsibility of the organisers to ensure that the mock drills and mock exercises are conducted in a safe and secure environment and the risks are managed effectively. All the activities of the mock exercises must be conducted in a manner so that they do not endanger any participant or a bystander.

Picture 8.3: Risky manoeuvres must be performed by trained emergency responders

All demonstrations must be carried out by trained personnel. Role players must not be exposed to situations that put them at risk of injury. Participants must not be rushed or pressured to hurry up. School children, minors and civilians must not be asked to execute risky manoeuvres.

Risks associated with the activity being undertaken by the participants must be studied and appropriate risk mitigation must be carried out. There should be adequate arrangements for first aid and casualty evacuation to the nearest medical facility. Safeguards must be in place against accidental fire hazard. Precautions against drowning must be undertaken in case flood rescue is being simulated.

In addition, EMT and all the participants must be adequately briefed on the safety and security considerations, venue evacuation drills and emergency arrangements like location of medical aid post and ambulances. Reliable communication arrangements and a good Public Address System must be ensured at all the simulation sites.

CHAPTER: 9

DOCUMENTATION AND FOLLOW UP ACTIONS

9.1 Overview

This chapter covers the follow up activities by the Exercise Management Team and DM authorities after the exercise is closed. Exercise Report and Improvement Action Plan are important outputs of this post exercise phase.

9.2 Introduction

After the exercise is closed, the EMT is required to complete the documentation, analyse the data collected and prepare the Exercise Report. Exercise report is a formal record of the DMEx and lessons learnt from it. The DM authorities at various levels are required to formulate an Improvement Action Plan (IAP) based on the Exercise Report. The IAP contains clear responsibilities and timelines for implementation and its progress must be reviewed periodically.

This post exercise phase has the following constituent steps:

- Step 1: Data Collection and Analysis
- Step 2: Briefing Senior Leadership
- Step 3: Report Preparation
- Step 4: Improvement Action Plan

9.3 Steps

9.3.1 Step 1: Data Collection and Analysis

Data collection and note taking is a continuous process carried out throughout the DMEx. The responsibility lies with the documentation group and dedicated rapporteurs, if any. The evaluators and facilitators assist in the process. The gaps in note taking are filled up during the debriefing process.

The collected data is analysed to reflect upon exercise planning, preparation and overall conduct with a view to improve the process of conduct of such exercises in future. This is a closed activity carried out by the EMT as a whole. All members of the EMT are expected to contribute and are free to express their views.

The performance of the participants towards fulfilment of the exercise objectives is also discussed. Reasons for tasks that could not be completed are analysed. A formal assessment

of the capabilities and preparedness is carried out. Strengths and weaknesses are listed out along with lessons learnt during the course of the exercise. Draft recommendations for follow up action are complied

9.3.2 Step 2: Briefing Senior Leadership

The senior leadership in the Government or the senior management in the organisation is briefed by the Exercise Controller on the outcomes of the DMEx, initial findings and the proposed recommendations before the exercise report is prepared. This gives the senior leadership an idea about the level of preparedness against disasters and the steps needed to be initiated to overcome the gaps identified during the DMEx.

In the beginning an overview of the exercise setting, its objectives and modality of conduct is given out. This is followed by assessment of the degree of preparedness and overall capability of response. Strengths and areas requiring improvement are highlighted. Specific recommendations for overcoming the weaknesses are covered in brief along with priority of actions. After answering any query of the senior leadership, a date is finalised for submission of the exercise report.

9.3.3 Step 3: Report Preparation

The documentation group is responsible for preparation of the exercise report. They are assisted by other members of the EMT. This is an important document which serves as a formal record of the DMEx, the lessons learnt and recommendations for follow up action.

The exercise report must cover the following:

- Description of the exercise including its type, scope and objectives;
- List of participants;
- Planning and preparation of the exercise;
- The scenario, narratives and requirements;
- Conduct including venues, resources and various activities;
- Feedback from the observers and participants;
- Assessment of performance by evaluators;
- Achieving objectives of the exercise and reasons for shortfall, if any;
- Challenges and opportunities identified during the debriefing;
- Lessons learnt;
- Recommendations for improvement for future exercises; and
- Recommendations for follow up action for capacity improvement and preparedness;

An endeavour must be made to include representative photographs of all the activities conducted during the course of the exercise.

The draft exercise report may be circulated for comments to the participating organisations before final release.

9.3.4 Step 4: Improvement Action Plan

The learnings from the DMEx must result in improvement in policies, plans, procedures and capabilities. Policies and plans must be revised if required. The procedures must be streamlined. Resource data must be updated and any shortfall should be made up. Emerging training needs must be addressed. Coordination should be carried out with other States, districts, departments or organisations for better mutual understanding and cooperation.

All this is done systematically through an Improvement Action Plan (IAP) which is formulated based on the Exercise Report. The responsibility of making and implementing the IAP is that of the DM Authorities in the State, district or the organisation.

The IAP must lay down clear responsibilities and timelines for implementation. The progress on the IAP must be reviewed periodically. The IAP and its implementation will also be reviewed before the next DMEx.

CHAPTER: 10

MEDIA AND PUBLIC AWARENESS

10.1 Overview

This chapter outlines the crucial role that media and public awareness play in the context of DMEx and DRR.

10.2 Introduction

The media plays a critical role in information and knowledge dissemination in all phases of DM. The immense potential of both electronic and print media needs to be fully utilised. Effective partnership with the media needs to be worked out in the field of community awareness, early warning and dissemination, and education regarding various disasters.[10]

This chapter will focus on the role of media in public awareness and how media can help make DMEx more effective.

Disaster preparedness is essential for minimising the impact of hazards on communities. DMEx play a vital role in this preparedness by simulating emergency scenarios to test and improve the readiness of various stakeholders, including emergency services, government agencies, and the public. In this context, media and public awareness are crucial elements that enhance the effectiveness of these exercises and promote a culture of preparedness within communities.

10.3 Types of Media

There are three main types of media. These are:

- **Print media:** Print media refers collectively to newspapers, magazines, books, journals, newsletters, and other printed material.
- **Broadcast media:** Broadcast media includes information transmitted electronically through one of several mass communication channels, such as television, radio and cinema.
- **Internet media:** Internet media includes social media platforms and refers to information and content distributed online.

Each of these media types differ in their reach and audience. A particular type of media is chosen as a tool for public awareness based on the scope of the exercise and the intended message. Usually a combination of media types are used to engage with the community during the DMEx.

10. National Policy on Disaster Management, 2009

Picture 10.1: Senior leadership briefing the broadcast media about the Mock Exercise.

INCOIS to lead tsunami mock exercise tomorrow

IOWave23 to finetune tsunami preparedness

CITY BUREAU
Hyderabad

Hyderabad-based Indian National Centre for Ocean Information Services (INCOIS), along with several other countries in the Indian Ocean, is all set to take part in a tsunami mock exercise titled 'IOWave23' on October 4.

As part of the mock exercise, the tsunami early warning system of INCOIS will issue test tsunami bulletins through various modes of communication channels to all its stakeholders at national and regional levels, a press release said.

IOWave23, which is being coordinated by Indian Ocean Tsunami Warning and Mitigation System (IOTWMS) of Intergovernmental Oceanographic Commission (IOC)-UNESCO, is aimed at finetuning tsunami preparedness, evaluate response capabilities in each State and improve coordination throughout the region.

> **These exercises will help us fix any gaps in warning chains and be fully prepared for future events**
>
> DR T SRINIVASA KUMAR, Director, INCOIS

The drill will facilitate exercising the standard operating procedures (SOPs) of the emergency services and evaluating their state of readiness to handle tsunami-like emergency situations. The aim is to exercise all levels of the tsunami warning and response chain, with primary focus on local coastal communities.

In India, the IOWave23 mock exercise is being coordinated by INCOIS in association with the National Disaster Management Authority (NDMA). All the disaster management organisations (DMOs) of coastal States/Union Territories, Navy, Coast Guard, and National Disaster Response Force (NDRF), personnel from critical installations such as nuclear power plants, port and harbours will participate in the exercise. "These exercises will provide a great opportunity for all stakeholders to test their tsunami warning procedures and enhance public awareness and preparedness. It will help us fix any gaps in warning chains and be fully prepared for future events," said Dr T Srinivasa Kumar, Director, INCOIS.

Picture 10.2: Newspaper coverage before the DMEx

10.4 The Role of Media in DMEx

The media is a powerful tool for bridging the gap between disaster preparedness activities by the Government / other stakeholders and the public. Its role in DMEx can be broadly categorised into education, information dissemination and advocacy.

10.4.1 Education

Public awareness is a cornerstone of effective disaster preparedness. An informed and prepared public is better equipped to respond to emergencies, thereby reducing the overall impact of disasters. Media involvement in the run up to the disaster mock exercises enhances public awareness in several ways:

10.4.1.1 Raising Awareness

Media campaigns before the DMEx raise awareness about the hazards that the community faces and the importance of disaster preparedness. By extensively covering DMEx, the media highlights the steps citizens can take to mitigate these risks faced by the community. Regular coverage helps keep disaster preparedness in the public consciousness.

10.4.1.2 Information about Response Agencies and Resources

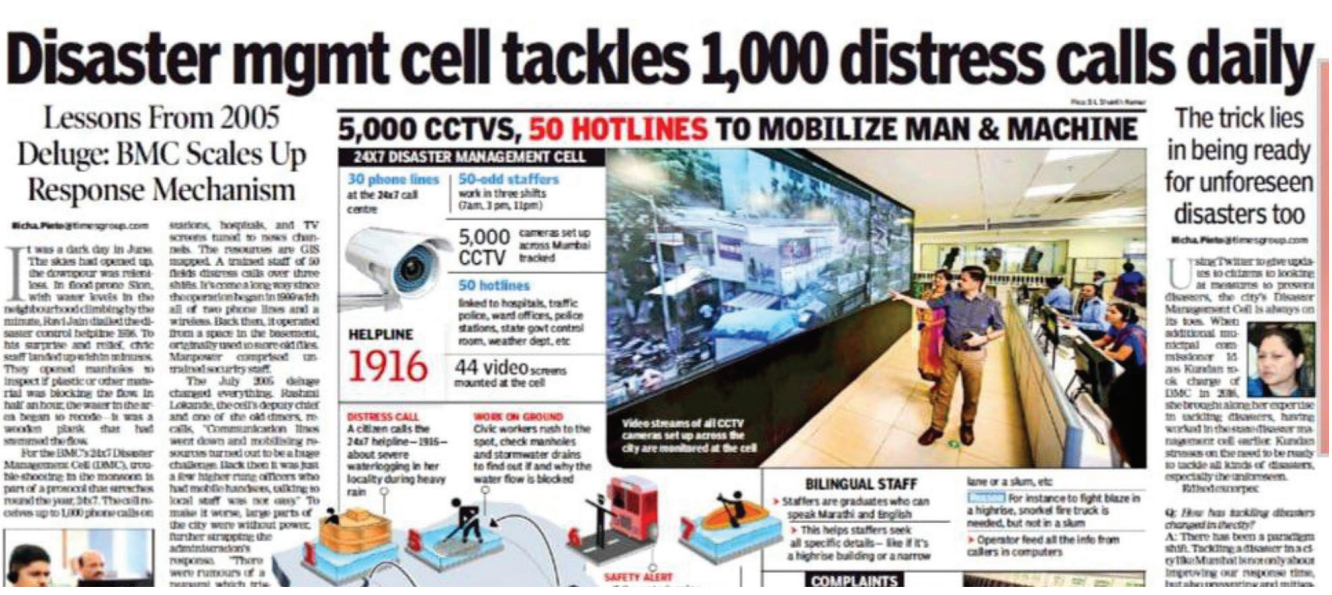
The media helps raise public awareness about the response methodology, response agencies and the resources available to the community to overcome the impact of the disaster. Information about helplines, early warning dissemination systems, shelters, evacuation routes, etc. will greatly facilitate actual response during disasters.

10.4.1.3 Providing Practical Information

The media can provide practical information on preparing for disasters, such as assembling emergency kits, safety precautions and community training. By integrating these tips into news stories and public service announcements, the media ensures that the information is accessible and easily understood by a broad audience. This practical information empowers the public to take proactive steps before the disaster.

10.4.1.4 Building a Culture of Preparedness

Consistent media coverage of DMEx helps build a culture of preparedness. When the public sees that emergency services and government authorities are actively engaged in preparedness activities, it reinforces the message that disaster preparedness is a shared responsibility. This continuous reinforcement encourages individuals to adopt and maintain preparedness measures.



Disaster mgmt cell tackles 1,000 distress calls daily

Lessons From 2005 Deluge: BMC Scales Up Response Mechanism

5,000 CCTVS, 50 HOTLINES TO MOBILIZE MAN & MACHINE

24X7 DISASTER MANAGEMENT CELL

30 phone lines at the 24x7 call centre

50-odd staffers work in three shifts (7am, 3 pm, 11pm)

5,000 CCTV cameras set up across Mumbai tracked

50 hotlines linked to hospitals, traffic police, ward offices, police stations, state govt control room, weather dept, etc

HELPLINE 1916

44 video screens mounted at the cell

DISTRESS CALL

WORK ON GROUND

BILINGUAL STAFF

COMPLAINTS

SAFETY ALERT

The trick lies in being ready for unforeseen disasters too

Picture 10.3: Newspaper clipping from the Times of India on disaster preparedness measures by the Brihanmumbai Municipal Corporation (BMC)

10.4.1.5 Changing Perceptions and Behaviour

Media is a powerful tool to shape the perceptions of the public and influence behaviours. Perceptions of the public are greatly affected by the news and stories they read in the media that they trust and the programs of the broadcast media. By highlighting effective disaster preparedness measures by the Government and the community, the media can reinforce the belief that such proactive actions will pay rich dividends to alleviate the impact of disasters. Stories of community and individual level best practices enlighten the public to the possibilities of reducing their vulnerabilities to disasters. These also encourage community participation in endeavours towards disaster preparedness like the DMEx.

10.4.2 Information Dissemination

During the DMEx, the media plays a critical role in informing the public about the objectives of the exercise, modalities of conduct, schedule, venues and expected community participation. This helps demystify the exercises and underscores the importance of community involvement in disaster preparedness. It also helps the community to prepare and minimise the disruptions caused due to the DMEx.

Effective messaging through the media can also be used to ensure public safety during an exercise. This is done by informing the public of any possible risks thereby reducing public concern. Information like road closures, staged accidents/ simulations and deployment of response agencies for drills must be shared in advance. Possibility of panic caused by any leaked exercise narrative or inject must be guarded against.

By covering these exercises, the media ensures transparency and helps the public understand the processes and procedures being tested. This also highlights the readiness of various agencies and the importance of such exercises.

10.4.3 Advocacy

After the DMEx, the media can advocate for stronger disaster preparedness measures and adequate resource allocation. By highlighting strengths and weaknesses identified during the DMEx, the media can influence public opinion and prompt DM authorities and NGOs to work towards better infrastructure, training, and community engagement initiatives. Advocacy through the media can lead to policy changes that enhance overall disaster preparedness.

Why India needs to build disaster resilience in its critical infrastructure

June 26, 2024 12:15 am

The unprecedented surge in electricity demand is just a glimpse of the kind of stress that critical infrastructure faces from extreme weather events and resultant disasters.

Picture 10.4: Newspaper article in the Indian Express advocating Disaster Resilience Infrastructure

10.5 Measures for Effective Media Engagement

Some measures to maximise the impact of media and public awareness efforts during DMEx are as follows:

10.5.1 Collaboration with Media Outlets

DM authorities should establish strong partnerships with local and national media outlets. This includes providing them with accurate and timely information, access to exercise sites, and opportunities to interview key personnel. Senior leadership and management must also be open to direct interaction with the media for effective messaging to the community. Collaborating with media outlets ensures comprehensive and accurate coverage of the exercises.

10.5.2 Media Training for Emergency Responders

Training emergency responders in media communication skills ensures they can effectively convey critical information during exercises and later during actual disasters and emergencies. This training should cover the basics of media interaction, message framing, and managing public perceptions. Skilled communication enhances the credibility and clarity of the information provided.

10.5.3 Utilising Social Media

Social media platforms offer a direct and immediate way to reach the public. Authorities can

use these platforms to provide live updates, share educational content, and engage with the community in real time. Social media also allows for interactive communication, where the public can ask questions and receive answers promptly. The public can also provide valuable feedback and inputs during the DMEx as well as during actual disasters and emergencies. This two-way communication builds trust and transparency.

Picture 10.5: Use of social media platforms by the NDMA to raise awareness about hazards

10.5.4 Community Involvement

Engaging community leaders and influencers in media campaigns can amplify the reach and impact of the messages. These individuals can help disseminate information within their networks and encourage community participation in preparedness activities. Community involvement ensures that messages resonate with diverse audiences and enhance community-wide preparedness.

10.5.5 Planned Messaging and Communication

All messaging and communication through the media needs to be properly planned to ensure clear, effective and appropriate messaging to specific audiences aligned with the objectives of the DMEx.

10.6 Challenges and Solutions

10.6.1 Misinformation and Panic

One of the challenges in using media for public awareness is the potential for misinformation and panic. To mitigate this, authorities must ensure that all information disseminated is accurate and clearly communicated. This involves regular updates and corrections when necessary. Proactive communication strategies and media training can help manage misinformation and maintain public trust.

जिला में भूकंप; 34 घायल, दो की 'मौत'

सिरमौर में आठ रिक्टर स्केल पर हुआ भूकंप; पांच स्थानों पर मेगा मॉकड्रिल का आयोजन, जिला प्रशासन ने संभाला मोर्चा

मनाली में भूकंप, 23 लोग घायल

दिव्य हिमाचल ब्यूरो – मनाली

मनाली में गुरुवार सुबह जैसे ही भूकंप के झटके महसूस किए गए शहर में अफरा-तफरी का माहौल देखने को मिला। यहां भूकंप आने से करीब 23 लोग जहां घायल हुए हैं, वहीं सैकड़ों जिंदगियों को प्रशासन ने बचाया। मनाली में सुबह आठ बजकर 35 मिनट में भूकंप आया। सायरन बजते ही पर्यटन नगरी में अफरा-तफरी मच गई। लोग चारों ओर दौड़ने लगे। मनाली में आए भूकंप से अधिक नुकसान मनाली के मॉडल टाउन में हुआ है। लोग व पर्यटक भी सायरन की आवाज सुनकर अपनी-अपनी जगह खड़े हो गए। काफी देर बाद उन्हें पता चला कि यह मॉकड्रिल का हिस्सा है। पर्यटन नगरी मनाली में गुरुवार सुबह मॉकड्रिल का आयोजन किया गया। शहर में भूकंप आने से राहत दल मनाली के विभिन्न हिस्सों में राहत कार्यों में जुट गए। शहर की सड़कों पर दमकल विभाग की गाड़ियां सायरन बजाती मौके पर पहुंचीं। एसडीएम मनाली रमन घरसंगी ने बताया कि गुरुवार को प्रदेश स्तरीय मॉकड्रिल का आयोजन किया गया, जिसके तहत मनाली में भी मॉकड्रिल की गई। उन्होंने बताया कि मॉक ड्रिल में पुलिस व होमगार्ड के जवानों सहित अग्निशमन केंद्र मनाली के जवानोंए आईपीएच, पीडब्लूडी व विद्युत विभाग के कर्मचारियों व अधिकारियों ने भाग लिया।

पद्धर में आया भूकंप, राहत में जुटे बचाव दल

पद्धर। उपमंडल पद्धर में गुरुवार को भूकंप आने पर बचाव राहत कार्यों के संबंध में मैगा मॉक अभ्यास का आयोजन किया गया। तय समय पर हूटर बजते ही उपमंडल स्तर के सभी विभागों के अधिकारी, कर्मचारी, स्टेजिंग एरिया तहसील कार्यालय पद्धर के प्रांगण में तत्काल पहुंचे। स्टेजिंग क्षेत्र में अलग-अलग बचाव दलों का गठन किया गया। काल्पनिक तौर पर माना गया कि तहसील भवन में भूकंप के कारण नुकसान हुआ है व इस भवन में राहत व बचाव दल ने अपना राहत अभियान शुरू किया। जिसमें गंभीर रूप से घायल व्यक्तियों को तुरंत प्राथमिक चिकित्सा देकर एंबुलैंस के माध्यम से उपचार हेतु पद्धर अस्पताल ले जाया गया। इस दौरान उपमंडलाधिकारी (ना.) पद्धर शिव मोहन सिंह सैनी जरूरी दिशा-निर्देश

हूटर-सायरन बजते ही हमीरपुर में मचा हड़कंप

भूकंप के साथ बस अड्डे के पास लगी आग, एसपी ऑफिस में शार्ट सर्किट, विद्युत उपकेंद्र ध्वस्त

दिव्य हिमाचल ब्यूरो, हमीरपुर

गुरुवार सुबह करीब साढ़े आठ बजे हमीरपुर शहर में उस वक्त अफरा-तफरी मच गई जब यहां भूकंप आने की हलचल हुई। लोगों में चर्चा छिड़ गई कि कहां आया भूकंप।

यही नहीं कुछ देर में हल्ला पड़ गया कि एसपी ऑफिस में शॉर्ट सर्किट हो गया और बस

भूकंप से टूटा नादौन का ब्यास पुल

नादौन। ब्यास पुल नादौन गुरुवार सुबह भूकंप के कारण टूटने को लेकर पुल के दोनों ओर अचानक ट्रैफिक जाम कर दिया गया। एसडीएम दिले राम धीमान तथा विकास खंड अधिकारी नादौन पारस अग्रवाल के नेतृत्व में पहुंचे पुलिस अधिकारियों व क्षेत्रभर के कर्मचारियों को पुल के दोनों ओर अचानक रोके गए वाहनों को देखकर शहर में हड़कंप मच गया। लोगों की थम चुकी सांसों में तब तेजी आई जब उन्हें

Picture 10.6: Example of sensational headlines that must be avoided while reporting about DMEx

10.6.2 Media Sensationalism

Media outlets may sometimes sensationalise aspects of disaster management exercises. This may cause unnecessary fear or misunderstanding in the public. This sometimes happens when some media outlets do not have timely and sufficient information leading to speculations and misreporting. Providing comprehensive and timely information equally to all media can mitigate sensationalism.

10.6.3 Resource Constraints

Limited resources can hinder the ability to engage with the media effectively. Prioritising key messages and leveraging low-cost digital platforms can help overcome these constraints. Strategic use of social media and community partnerships can maximise impact with limited resources.

10.7 Conclusion

Media and public awareness are essential components of disaster preparedness and DMEx. They can be very helpful in furthering the objectives of the DMEx and facilitating their conduct. DM authorities can enhance public understanding, build a culture of preparedness, and advocate for improved disaster management policies and practices through strategic media partnership. Effective media engagement can help communities to be better prepared to face the uncertainties of disasters, ultimately saving lives and reducing damage.

CHAPTER: 11

RESOURCES

Overview

This chapter lists online resources for reference and further studies.

11.1 Chapter 1 - Introduction

- Disaster Management Act, 2005
  https://ndma.gov.in/sites/default/files/PDF/DM_act2005.pdf
- GoI, National Policy on Disaster Management, 2009
  https://ndma.gov.in/sites/default/files/PDF/national-dm-policy2009.pdf
- GoI, National Disaster Management Plan, 2019
  https://ndma.gov.in/sites/default/files/PDF/ndmp-2019.pdf
- Sendai Framework for Disaster Risk Reduction (SFDRR) 2015–2030
  https://www.undrr.org/media/16176/download

11.2 Chapter 2 - HRVA and DM Plans

- DRR Terminology
  https://www.undrr.org/drr-glossary/terminology
- Guidelines on Preparation of State Disaster Management Plans
  https://ndma.gov.in/sites/default/files/PDF/Guidelines/sdmp.pdf
- Model Framework for preparation of District Disaster Management Plan
  https://ndma.gov.in/sites/default/files/PDF/NDMA%20DDMP%20Framework.pdf
- Explanatory Note for preparation of District Disaster Management Plan
  https://ndma.gov.in/sites/default/files/PDF/NDMA%20DDMP%20Explanatory%20Notes.pdf
- Template for School Disaster Management Plan
  https://ndma.gov.in/sites/default/files/PDF/SDMP-TEMPLATE.pdf
- Template for DMP of Central Ministries/Departments
  https://ndma.gov.in/sites/default/files/PDF/Template-DMP-Ministry-Dept-2019-JAN-Final-Draft1-cpg%20-AT.docx
- Frequently Asked Questions (FAQs) from Ministries on Disaster Management Plan
  https://ndma.gov.in/sites/default/files/PDF/faqs-dmplan.pdf

- Template for School DM plan and guidance note developed under National School Safety Programme

  https://ndma.gov.in/sites/default/files/PDF/school_safety/ModelSchoolDMplantemplateenglish.pdf

11.3 Chapter 3 - IRS

- Guidelines on Incident Response System

  https://ndma.gov.in/sites/default/files/PDF/Guidelines/incidentresponsesystemjuly.pdf

- NIDM Basic and intermediate Training Module on IRS
  https://nidm.gov.in/PDF/modules/irs-1.pdf

11.4 Chapter 4 - EOC

- Contact details of all State/UT level EOC in India

  https://ndma.gov.in/Response/Emergency-Operations-Center

- FEMA EOC quick reference guide

  https://www.fema.gov/sites/default/files/documents/fema_eoc-quick-reference-guide.pdf

- Web based EOC - virtual EOC

  https://www.juvare.com/webeoc/

- WHO Framework for a Public Health Emergency Operations Centre

  https://www.who.int/publications/i/item/framework-for-a-public-health-emergency-operations-centre

- British Columbia, The Emergency Operations Centre Operational Guidelines 2nd Edition

  https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/local-government/eoc_operational_guidelines.pdf

11.5 Chapter 5 - Types, Scale and Scope of Mock Exercises

- WHO Simulation Exercise Manual

  https://www.who.int/publications/i/item/WHO-WHE-CPI-2017.10

- FEMA, Virtual Exercise Best Practices

  https://www.fema.gov/sites/default/files/documents/fema_virtual-exercise-best-practice.pdf

- ITU, Emergency Telecommunications Tabletop Simulation Guide

  https://www.itu.int/en/ITU-D/Emergency-Telecommunications/Documents/Publications/2020/TTX_Guide.pdf

- FEMA, Homeland Security Exercise And Evaluation Program (HSEEP)

  https://www.fema.gov/sites/default/files/2020-04/Homeland-Security-Exercise-and-Evaluation-Program-Doctrine-2020-Revision-2-2-25.pdf

11.6 Chapter 6 - Planning

- UNDRR, Words into Action Guidelines, Design and conduct of simulation exercises

  https://www.preventionweb.net/files/53348_simulation.pdf

- Simulation exercises in public health settings - Step-by-step exercise design

  https://www.ecdc.europa.eu/sites/default/files/documents/simulation-exercises-public-health-settings-step-by-step-exercise-design.pdf

- FEMA, Inclusion, Diversity, Equity and Accessibility in Exercises: Considerations and Best Practices Guide

  https://www.fema.gov/sites/default/files/documents/fema_inclusion-diversity-equity-accessibility-exercises.pdf

- Pan American Health Organization, Guidelines for developing emergency simulations and drills

  https://www.preventionweb.net/publication/guidelines-developing-emergency-simulations-and-drills

11.7 Chapter 7 - Preparation

- FEMA, Safe Exercise - best practices

  https://www.fema.gov/sites/default/files/documents/fema_safe-exercise-best-practice_06072021.pdf

11.8 Chapter 8 - Conduct

- The Australian Institute for Disaster Resilience, Managing Exercises handbook

  https://knowledge.aidr.org.au/media/10506/handbook_managing_exercises_web_2023.pdf

- Swedish Civil Contingencies Agency (MSB), Handbook: Evaluation of exercises

  https://www.preventionweb.net/publication/handbook-evaluation-exercises

11.9 Chapter 9 - Documentation and Follow up Actions

- FEMA, Sample After Action Report

  https://www.hsdl.org/c/view?docid=466926

11.10 Chapter 10 - Media and Public Awareness

- SDG Handbook - Engaging with the media

  https://www.sdgaccountability.org/working-with-informal-processes/engaging-with-the-media/

- Global Disaster Preparedness Centre - Public Awareness and Public Education

  https://preparecenter.org/topic/public-awareness-and-public-education/

Annexure

Annexure I - Broad Methodology of NDMA Exercises

Annexure II - Sample IRS Notifications

Annexure III - Emergency Support Functions and Responsibilities

Annexure IV - Sample Participant Feedback Form

Annexure V - Sample Exercise Evaluation Form

Annexure-I

BROAD METHODOLOGY OF NDMA EXERCISES

The sequence of actions are as follows:

Step	Event	Participation
Step-I (D minus 15 days)	Training in the Incident Response System (IRS) and associated aspects	• Notified IRS Officials • State and district-level DM officials • ESF Officials • First Responders and other stakeholders
Step-II (D minus 10 days)	Orientation & Coordination Conference	• State Revenue and DM department • SDMA • Exercise participants
Step-III (D minus 02 days)	Tabletop Exercise (TTEx)	• Chaired by Chief Secretary/ Principal Secretary (Revenue and DM) • Conducted by NDMA • Exercise participants
Step-IV (D day)	Mock Exercise (ME)	• Conducted by NDMA and State administration • IRS Officials • State and district-level DM officials • ESF Officials • First Responders and other stakeholders
Step-V (D plus 15 days)	Documentation and Followup actions	Joint effort by NDMA and the State/UT

Notes:

1. **IRS Training:** Following aspects are covered by the Exercise Controller from NDMA:
   - Institutional and legal DM framework in India.
   - Emergency support functions.

- Organisation, role of various IRS appointments, activating IRT, Incident Action Plan (IAP), setting up IRS facilities, mobilisation of resources, response and documentation.
- Leveraging technology in DRR, disaster communication, early warning, resource mapping, building situational awareness and EOC operations.

2. **Orientation & Coordination Conference:** Aims and objectives of the exercise are explained to the participants and their roles are delineated. The conduct of the TTEx and Field Exercise is explained and dates finalised. Resources and preparations required for the impending TTEx and ME are discussed and coordinated. Senior Leadership in the State is briefed.

3. **Tabletop Exercise (TTEx):** TTEx starts with discussion on DM Plans and the state of preparedness. Scenario based on one of the State's main hazards is presented along with the opening narrative. TTEx is then progressed by the Exercise controller and facilitators through progressive narratives and injects. The participants are expected to respond based on existing DM Policies, Plans and Procedures. Evaluators evaluate the decision making and other responses of the participants and rapporteurs document the TTEx.

4. **Mock Exercise (ME):** Multiple sites are activated in each district of the State. Emergency situations are simulated as per the exercise scenario and narratives. Incident Command Post (ICP) is established at each site. First responders are mobilised along with resources and various response activities are carried out as per the Incident Action Plan. Each site has a facilitator and set of evaluators. Best practices, lessons learnt and gaps observed are documented.

5. **Documentation and Followup actions:** Feedback and After Action Report (AAR) is prepared by NDMA. Exercise report is prepared and shared with all concerned by the State/UT.

6. Step I and Step II are sometimes conducted together. Step-I may be omitted if the State has already conducted the same as part of its training calendar.

7. It is feasible to conduct the first three steps through video conferencing

Annexure-II

SAMPLE IRS NOTIFICATIONS

GOVERNMENT OF ASSAM
REVENUE AND DISASTER MANAGEMENT DEPARTMENT
DISPUR :: ASSAM

NOTIFICATION

No. RGR/ASDMA/08/ 2014/ 01 Dated 20th May 2014

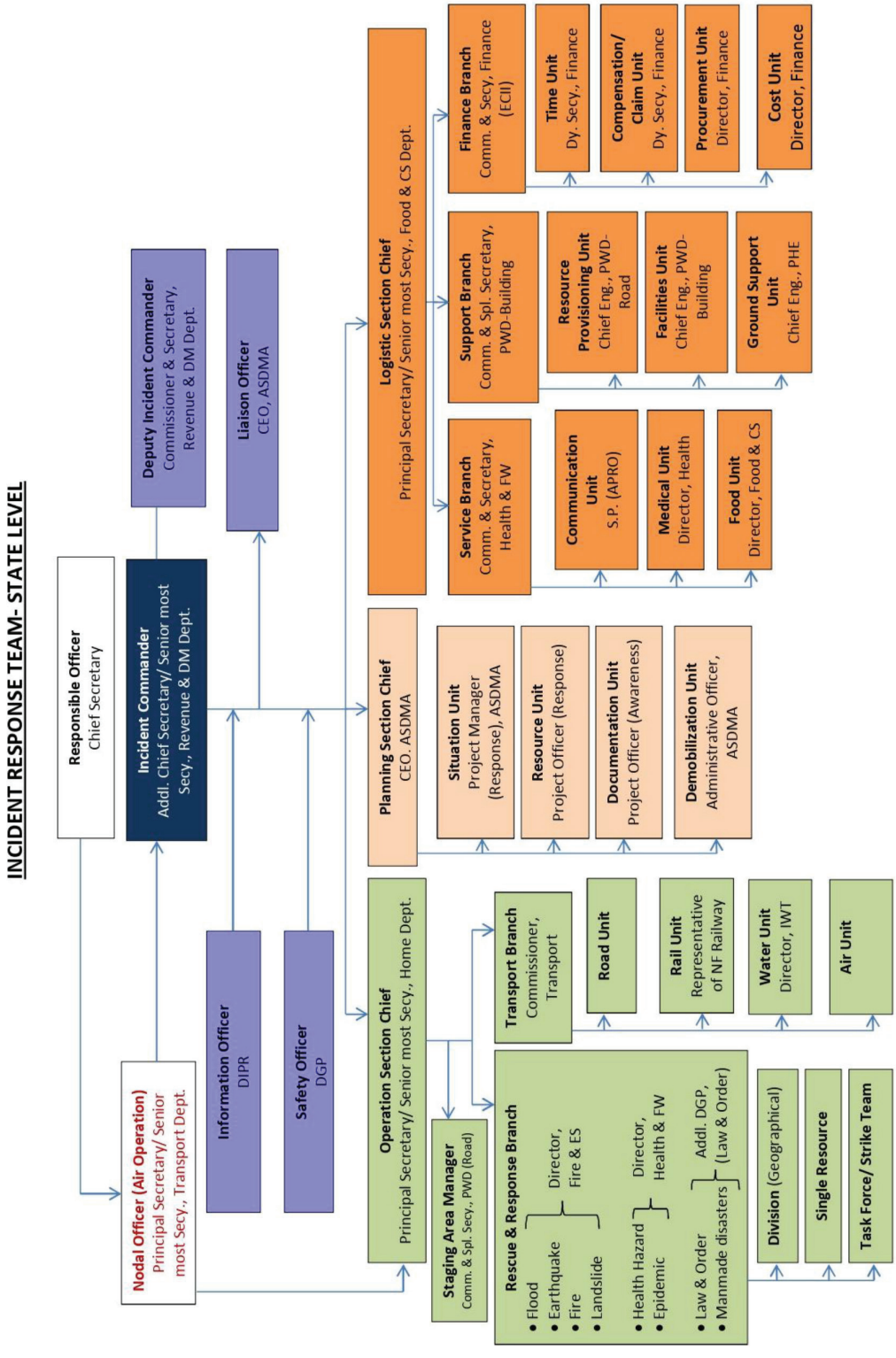
Government of Assam has accepted Incident Response System (IRS) as the preferred disaster response system in the State. For implementation of the same the State level Incident Response Team (IRT) is hereby notified as follows-

1. **Responsible Officer:**	Chief Secretary to the Govt. of Assam
2. **Incident Commander**:	Senior most Secretary, Revenue & DM Dept.
3. **Nodal Officer (Air Operation)**:	Senior most Secretary, Transport Dept.
4. **Deputy Incident Commander:**	Comm. & Secretary, Revenue & DM Dept.
5. **Safety Officer:**	Director General of Police (DGP), Assam
6. **Liaison Officer**:	Chief Executive Officer, Assam State Disaster Management Authority (ASDMA)
7. **Information & Media Officer:**	Director of Information and Public Relation
8. **Operation Section Chief:**	Seniormost Secretary, Home Dept.
a. **Staging Area Manager**:	Commissioner & Spl. Secretary, PWD (Road)
b. **Rescue & Response Branch**:	
i. **Natural Disasters**:	Director, Fire & Emergency Service
ii. **Epidemic & Health Hazard**:	Director, Health & Family Welfare
iii. **Manmade Disasters**:	Addl. DGP, Law and Order
c. **Transport Branch (Road, Rail, Water & Air Unit)**:	Commissioner, Transport
9. **Planning Section Chief:**	Chief Executive Officer (CEO), Assam State Disaster Management Authority (ASDMA)
a. **Situation Unit**:	Project Manager (Response & Recovery), ASDMA
b. **Resource Unit**:	Project Officer (Response & Recovery), ASDMA
c. **Documentation Unit**:	Project Officer (Awareness), ASDMA
d. **Demobilization Unit**:	Administrative Officer, ASDMA
10. **Logistic Section Chief:**	Senior most Secretary, Food & Civil Supply Dept.
a. **Service Branch**:	Commissioner & Secretary, Health & FW Dept.
i. **Communication Unit:**	S.P., Assam Police Radio Organization (APRO)
ii. **Medical Unit**:	Director, Health & FW Dept.
iii. **Food Unit**:	Director, Food & Civil Supply Dept.
b. **Support Branch**:	Commissioner & Spl. Secretary, PWD (Building)
i. **Resource Provisioning Unit:**	Chief Engineer, PWD (Road)
ii. **Facilities Unit:**	Chief Engineer, PWD (Building)
iii. **Ground Support:**	Chief Engineer, PHE
c. **Finance Branch**:	Commissioner & Secretary, Finance (ECII) Dept.
i. **Time Unit**:	Deputy Secretary, Finance Dept.
ii. **Compensation/ Claim Unit**:	Deputy Secretary, Finance Dept.
iii. **Procurement Unit**:	Director, Finance Dept.
iv. **Cost Unit**:	Director, Finance Dept.

The State Level Incident Response Team (IRT) will be activated by the Responsible Officer in the event of occurrence of any major emergencies/ disasters.

This will come into force with effect from the date of publication of this notification.

(Shri Jitesh Khosla)
Chief Secretary to Government of Assam
Dispur, Guwahati-06


INCIDENT RESPONSE TEAM- STATE LEVEL
Responsible Officer
Chief Secretary
Incident Commander
Addl. Chief Secretary/ Senior most Secy., Revenue & DM Dept.
Deputy Incident Commander
Commissioner & Secretary, Revenue & DM Dept.
Liaison Officer
CEO, ASDMA
Nodal Officer (Air Operation)
Principal Secretary/ Senior most Secy., Transport Dept.
Information Officer
DIPR
Safety Officer
DGP
Logistic Section Chief
Principal Secretary/ Senior most Secy., Food & CS Dept.
Planning Section Chief
CEO. ASDMA
Operation Section Chief
Principal Secretary/ Senior most Secy., Home Dept.
Finance Branch
Comm. & Secy, Finance (ECII)
Time Unit
Dy. Secy., Finance
Compensation/ Claim Unit
Dy. Secy., Finance
Procurement Unit
Director, Finance
Cost Unit
Director, Finance
Support Branch
Comm. & Spl. Secretary, PWD-Building
Resource Provisioning Unit
Chief Eng., PWD-Road
Facilities Unit
Chief Eng., PWD-Building
Ground Support Unit
Chief Eng., PHE
Service Branch
Comm. & Secretary, Health & FW
Communication Unit
S.P. (APRO)
Medical Unit
Director, Health
Food Unit
Director, Food & CS
Situation Unit
Project Manager (Response), ASDMA
Resource Unit
Project Officer (Response)
Documentation Unit
Project Officer (Awareness)
Demobilization Unit
Administrative Officer, ASDMA
Staging Area Manager
Comm. & Spl. Secy., PWD (Road)
Transport Branch
Commissioner, Transport
Road Unit
Rail Unit
Representative of NF Railway
Water Unit
Director, IWT
Air Unit
Rescue & Response Branch
• Flood
• Earthquake
• Fire
• Landslide
Director, Fire & ES
• Health Hazard
• Epidemic
Director, Health & FW
• Law & Order
• Manmade disasters
Addl. DGP, (Law & Order)
Division (Geographical)
Single Resource
Task Force/ Strike Team

GOVERNMENT OF ASSAM
REVENUE AND DISASTER MANAGEMENT DEPARTMENT
DISPUR :: ASSAM

NOTIFICATION

No. RGR/ASDMA/08/ 2014/ 02 Dated 20th May 2014

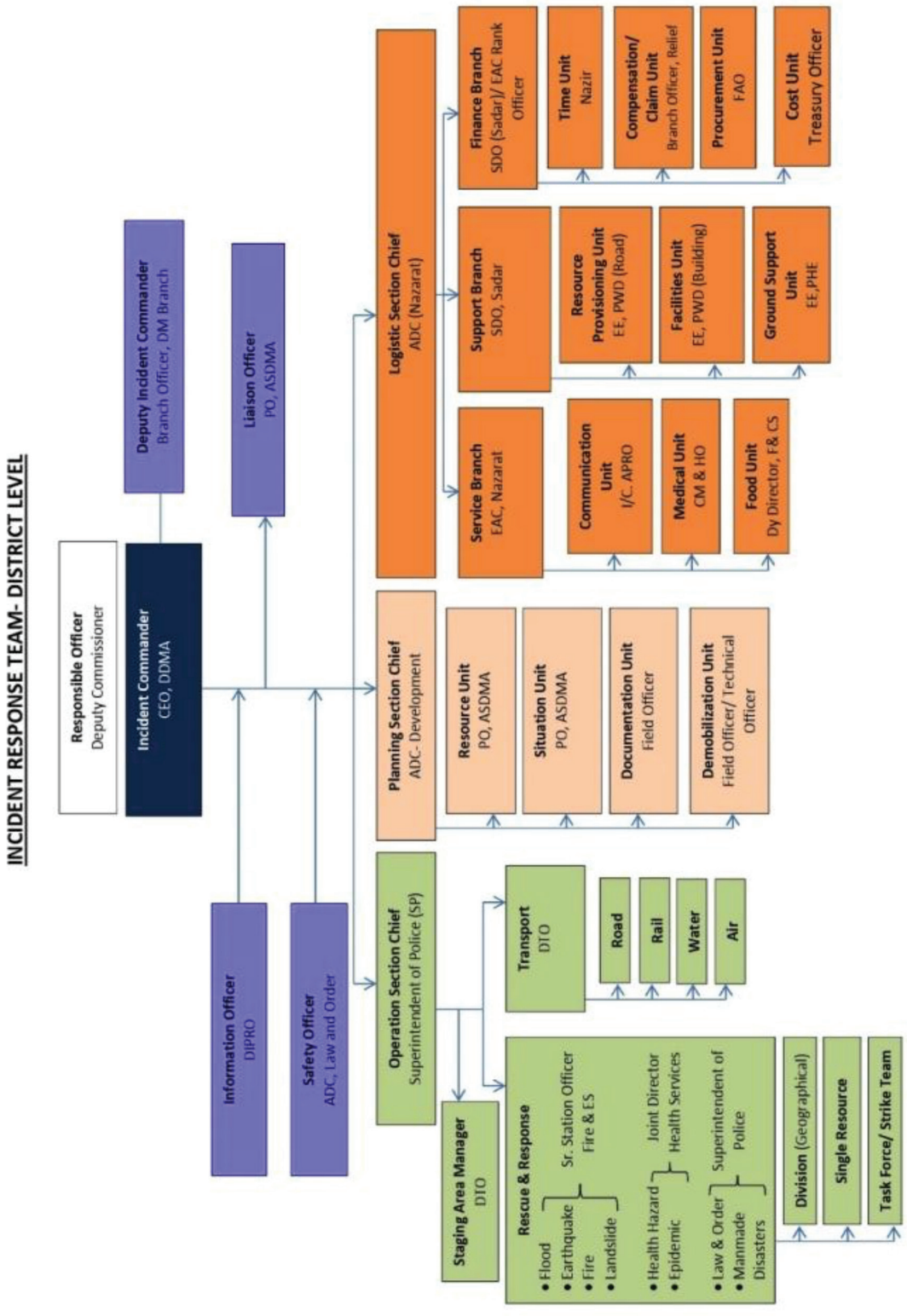
Government of Assam has accepted Incident Response System (IRS) as the preferred disaster response system in the State. For implementation of the same the District level Incident Response Team (IRT) is hereby notified as follows-

1. **Responsible Officer:**	Deputy Commissioner
2. **Incident Commander**:	Chief Executive Officer (CEO), District Disaster Management Authority (DDMA)
3. **Deputy Incident Commander:**	Branch Officer, Disaster Management (DM) Branch
4. **Safety Officer:**	Addl. Deputy Commissioner, Law and Order
5. **Liaison Officer**:	Project Officer, District Disaster Management Authority (DDMA)
6. **Information & Media Officer:**	District Information and Public Relation Officer (DIPR)
7. **Operation Section Chief:**	Superintendent of Police (SP)
a. **Staging Area Manager**:	District Transport Officer (DTO)
b. **Rescue & Response Branch**:	
i. **Natural Disasters**:	Sr. Station Officer, Fire & Emergency Service
ii. **Epidemic & Health Hazard**:	Joint Director, Health & Family Welfare
iii. **Manmade Disasters**:	Superintendent of Police
c. **Transport Branch (Road, Rail, Water & Air Unit)**:	District Transport Officer (DTO)
8. **Planning Section Chief:**	Addl. Deputy Commissioner, Development
a. **Situation Unit**:	Project Officer, DDMA
b. **Resource Unit**:	Project Officer, DDMA
c. **Documentation Unit**:	Field Officer, DDMA
d. **Demobilization Unit**:	Field Officer/ Technical Officer, DDMA
9. **Logistic Section Chief:**	Addl. Deputy Commissioner, Nazarat
a. **Service Branch**:	EAC, Nazarat.
i. **Communication Unit:**	In-charge, APRO
ii. **Medical Unit**:	CM & HO, Health & FW Dept.
iii. **Food Unit**:	Deputy Director, Food & Civil Supply Dept.
b. **Support Branch**:	SDO, Sadar
i. **Resource Provisioning Unit:**	Executive Engineer, PWD (Road)
ii. **Facilities Unit:**	Executive Engineer, PWD (Building)
iii. **Ground Support:**	Executive Engineer, PHE
c. **Finance Branch**:	SDO, Sadar/ EAC Rank Officer
i. **Time Unit**:	Nazir
ii. **Compensation/ Claim Unit**:	Barnch Officer, Relief Branch
iii. **Procurement Unit**:	Finance & Accounts Officer (FAO)
iv. **Cost Unit**:	Treasury Officer

The District Level Incident Response Team (IRT) will be activated by the Responsible Officer in the event of occurrence of any major emergencies/ disasters.

This will come into force with effect from the date of publication of this notification.

(Shri Jitesh Khosla)
Chief Secretary to Government of Assam
Dispur, Guwahati-06


INCIDENT RESPONSE TEAM- DISTRICT LEVEL
Responsible Officer
Deputy Commissioner
Incident Commander
CEO, DDMA
Deputy Incident Commander
Branch Officer, DM Branch
Liaison Officer
PO, ASDMA
Information Officer
DIPRO
Safety Officer
ADC, Law and Order
Logistic Section Chief
ADC (Nazarat)
Finance Branch
SDO (Sadar)/ EAC Rank Officer
Time Unit
Nazir
Compensation/ Claim Unit
Branch Officer, Relief
Procurement Unit
FAO
Cost Unit
Treasury Officer
Support Branch
SDO, Sadar
Resource Provisioning Unit
EE, PWD (Road)
Facilities Unit
EE, PWD (Building)
Ground Support Unit
EE, PHE
Service Branch
EAC, Nazarat
Communication Unit
I/C. APRO
Medical Unit
CM & HO
Food Unit
Dy Director, F& CS
Planning Section Chief
ADC- Development
Resource Unit
PO, ASDMA
Situation Unit
PO, ASDMA
Documentation Unit
Field Officer
Demobilization Unit
Field Officer/ Technical Officer
Operation Section Chief
Superintendent of Police (SP)
Transport
DTO
Road
Rail
Water
Air
Staging Area Manager
DTO
Rescue & Response
• Flood
• Earthquake
• Fire
• Landslide
Sr. Station Officer Fire & ES
• Health Hazard
• Epidemic
Joint Director Health Services
• Law & Order
• Manmade Disasters
Superintendent of Police
Division (Geographical)
Single Resource
Task Force/ Strike Team

Annexure-III

EMERGENCY SUPPORT FUNCTIONS AND RESPONSIBILITIES

The Emergency Support Functions (ESF) are the functions and tasks that are required to be carried out during disaster response and are common to all types of disasters and emergency situations. The responsibilities of these functions overlap amongst a number of ministries, departments and organisations. Hence for effective coordination, certain agencies of Central and State Governments will play a lead role, while others will be in a supporting role.

These primary and secondary agencies must be invited to participate in the MEs depending on the objectives of the ME. The NDMP 2019 specifies the responsibilities of these agencies in a responsibility matrix and they need to be exercised on these during the ME.

The table below lists the ESFs alphabetically as identified in the NDMP 2019 along with the primary and secondary agencies at the Centre and State Level. This will assist in determining participation for any ME

S No.	ESF	Central Government		State Government	
		Primary Agency	Support Agency	Primary Agency	Support Agency
1.	Communication	MCOM, DOT	MOR, MOCI, MOD, Telecom Service Providers	IPRD	SDMA, RD, DMD$, SEOC, DDMA
2.	Cultural Heritage Sites, their Precincts and Museums — Protection & Preservation	MOCU	MHUA, MTOU, MOLJ	ARHD	SDMA, DMD$, DDMA, SEOC, SDRF, F&ES, ULBs, PRIs, CUD, TOD, SPWD
3.	Data Collection and Management	MHA, NDMA	NIDM, MOIB, MCOM, MOST, MOES, MOJS, MOEFCC	DMD$	State/UT, RD, SEOC, SDMA, DDMA, Bureau of Eco and Statistics

4.	Disposal of animal carcasses	MAFW, MAHDF	MHA, MHFW	AHD	State/UT, SDMA, RD, DMD$, SEOC, DDMA, AGD, Police, all other relevant Depts
5.	Drinking Water/ Dewatering Pumps/ Sanitation Facilities	MDWS, MFPI	MOJS, MORD, MHFW, MCAFPD	WSD	State/UT, SDMA, RD, DMD$, SEOC, DDMA, HFWD, CDEF
6.	Early Warning, Maps, Satellite inputs, Information Dissemination	IMD, CWC, INCOIS, DRDE, GSI, NRSC, SAC	Relevant Ministries and agencies	DMDS	State/UT, SDMA, RD, SEOC, DDMA
7.	Evacuation of People and Animals	MHA	MOD, CAPF, MRTH, MOR, MOCI, NDRF, CDEF	DMDS	State/UT, SDMA, SDRF, RD, SEOC, F&ES, DDMA, CDEF
8.	Fodder for livestock in scarcity-hit areas	MAFW, MAHDF	MRTH, MOR	AHD	State/UT, SDMA, RD, DMD$, SEOC, DDMA, EFD, AGD, Animal Welfare Orgs
9.	Food and Essential Supplies	MCAFPD, MFPI	MRTH, MOCI, MOR, MSJE, MHA, FCI	FCSD	State/UT, SDMA, RD, DMD$, SEOC, DDMA, CDEF
10.	Fuel	MPNG	MOD, MOR, MRTH, MOCI	FCSD	State/UT, SDMA, RD, DMD$, SEOC, DDMA
11	Housing and Temporary Shelters	MHUA, MORD	MHA, MRTH, MOR, HUDCO, BMTPC, CBRI	UDD	State/UT, SDMA, RD, DMD$, SEOC, DDMA

12	Management of the dead people	MHA, NDMA, NDRF	MOD, CAPF, MHFW, MHA, MRTH, MOR, CDEF	SDRF	State/UT, SDMA, RD, DMD$, SEOC, F&ES, DDMA, CDEF
13	Media Relations	MOIB, MHA, NDMA	MCOM, MOST, MOES, MOJS, MOEFCC	IPRD	State/UT, SDMA, RD, DMD$, SEOC, DDMA
14	Medical	MHFW	MOD, CAPF, MOR	HFWD	State/UT, SDMA, RD, DMD$, SEOC, SDRF, F&ES, DDMA, CDEF
15	Power	MPWR	MNRE, MPNG, Power generating/ distribution companies	SEB, DISCOM	State/UT, SDMA, RD, DMD$, SEOC, DDMA
16.	Public Health	MHFW	MOD, CAPF, MOR	HFWD	State/UT, SDMA, RD, DMD$, SEOC, SDRF, F&ES, DDMA, CDEF
17.	Rehabilitation and Ensuring Safety of Livestock and other Animals, Veterinary Care	MAFW, MAHDF	MRTH, MOR	AHD	State/UT, SDMA, RD, DMD$, SEOC, DDMA, EFD, AGD, Animal Welfare Orgs
18.	Relief Employment	MORD, MOPR, MHA	MLBE, MOJS, MDWS, MAFW	COR	State/UT, AGD, DRD, DMD$, SDMA, DDMA
19.	Relief Logistics and Supply Chain Management	MHA, ministries with hazard-specific responsibility	MOD, MOR, MRTH, MOCI, MCAFPD, MFPI, MAFW	DMD	State/UT, SDMA, RD, SEOC, DDMA

20.	Search and Rescue of People and Animals	MHA, NDRF	MOD, CAPF, MHFW, MHA,MRTH, MOCI, MOR, CDEF	DMD	State/UT, SDMA, RD, SEOC, SDRF, F&ES, DDMA, CDEF
21.	Transportation	MRTH, MOR, MOCI	MHA, MOD, NHAI, MOSH, NDRF, MHFW	TRAD	State/UT, SDMA, RD, DMDS, EOC, DDMA,EFD, SPWD, Airport Officer

DMDS : Disaster Management Department (i.e. the State's nodal department for DM)

Annexure-IV

SAMPLE PARTICIPANT FEEDBACK FORM

Part - I: Particulars of the participant		
1.	Name of the Participant	
2.	Organisation	
3.	Role in the exercise	
4.	Location (place of deployment)	

Part - II: Conduct of Exercise (Please rate the following from 1 to 5, with 1 indicating extremely poor and 5 indicating excellent)		
1.	The exercise was well organized and structured	
2.	Briefing before the start of exercise was adequate and useful	
3.	The exercise scenario was realistic	
4.	The exercise narratives and injects were designed well to bring out relevant lessons	
5.	Facilitators effectively led the exercise and managed the discussions well.	
6.	The arrangements for the exercise were well coordinated.	
7.	The exercise contents were relevant to my work.	
8.	The exercise enhanced my decision making and problem-solving abilities in respect of disaster management.	
9.	The exercise gave me a better understanding of everyone's roles and responsibilities in a disaster.	
10.	The exercise enabled me to engage with other stakeholders in emergency response and improved my ability to work with them.	
11.	Adequate time was allotted for all activities	

Part III: Please answer the following questions briefly		
1.	What were the areas of strength noticed during the exercise in respect of performance of participants?	
2.	What are the areas of improvement?	
3.	How can the conduct of the exercise be improved?	
4.	Are there any areas in which further training is required?	
5.	What were the key lessons learned?	
6.	What actions do you and/or your organisation need to take to improve preparedness for disasters?	

Annexure-V

SAMPLE EXERCISE EVALUATION FORM

Part - I: Particulars of the Evaluator		
1.	Name of the Participant	
2.	Organisation	
3.	Role in the exercise	

Part - II: Conduct of exercise (Please rate the conduct of the exercise on the following parameters from 1 to 5, with 1 indicating extremely poor and 5 indicating excellent)			
S No	**Parameter**	**Points**	**Notes/Remarks**
1.	Aptness of the scenario and narratives		
2.	Preparation of venues		
3.	Availability of required resources		
4.	Inter agency coordination		
5.	Effective briefings and timely flow of information		
6.	Communication arrangements		
7.	Logistics and administrative arrangements		
8.	Time management		
9.	Safety and security arrangements		
10.	Fulfilment of the exercise objectives		
11.	Media engagement & public awareness		
12.	Overall conduct of the exercise		

Part - II: Performance of the participants and organisation (Please rate from 1 to 5, with 1 indicating extremely poor and 5 indicating excellent)			
1.	Functioning of the EOC		
2.	Understanding of the IRS system		
3.	Understanding of existing DM policies, plans and SOPs		
4.	Situational awareness		
5.	Ability to assess the emerging situations		
6.	Planning and distribution of responsibilities		
7.	Working of the chain of command		
8.	Decisions making under stress and time pressure		
9.	Optimal resource utilisation		
10.	Time taken to be effective at incident site		
11.	Action as per SOPs		
12.	Innovative solutions to solve problems		
13.	Observation of safety norms		
14.	Leadership		
15.	Cooperation		

Part III: Please answer the following questions briefly		
1.	What were the areas of strength?	
2.	What are the areas of improvement?	
3.	How can the conduct of the exercise be improved?	
4.	Are there any areas in which further training is required?	

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