सत्यमेव जयते

Training Module on Preparation of State Disaster Management Plans (SDMP)



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Resilient India - Disaster Free India

National Institute of Disaster Management
(Ministry of Home Affairs, Government of India)

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on
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JUNE 2022

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Training Module on Preparation of State Disaster Management Plans (SDMP)

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सत्यमेव जयते
आज़ादी का अमृत महोत्सव

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Foreword

At the global level, there has been considerable concern over natural hazards and subsequent disasters which take immense human toll and economic losses also aggravate. It was in this background that the United Nations General Assembly, in 1989, declared the decade 1990-2000 as the International Decade for Natural Disaster Reduction with the objective to reduce loss of lives and property and restrict socio-economic damage through concerted international action, especially in developing countries. Government of India brought a paradigm shift in the approach to disaster management by enacting the Disaster Management Act 2005. This was further strengthened with the development of a National Disaster Framework which is encouraged to be all inclusive and included mainstreaming of Disaster Risk Reduction (DRR).

The national vision is to build a disaster resilient nation by developing a holistic, proactive, multi-hazard and technology driven strategy for DRR. This can be achieved through a culture of prevention, mitigation and preparedness to reduce the impact of disasters on people. Alongside, “Prime Minister's 10-point Agenda” on Disaster Risk Management (DRM), under its realm calls for all developmental sectors to assimilate principles of DRM, invest in risk mapping and building resilient infrastructure and resources including all economic development sectors. The agenda action points also

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lay thrust on building local capacities and initiate mass awareness measures. It is in this context that the National Disaster Management Authority (NDMA) has come up with the National Disaster Management Plan 2019 and Guidelines for formulation of State Disaster Management Plans so that the States can take more proactive measures for better preparedness. These guidelines can go as a useful tool for all States and Union Territories (UTs) in developing their respective State Plans which in turn will help practitioners and vulnerable communities to become more disaster resilient. Further, the National Institute of Disaster Management (NIDM) is mandated to develop training modules, organise training programmes and aid the State Governments and State training institutes in the formulation of State level policies, disaster management plans and any other assistance for capacity-building of all relevant stakeholders.



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Preface

India envisages as priority, achieving two major goals in the coming years, i.e. (i) Ease of living for common citizens and (ii) Making India into a five trillion economy by the year 2024. Combining both the goals to be achieved will require concerted efforts to achieve this vision. As is known, disasters disrupt development and invariably have detrimental repercussions on the affected States' Domestic Product (SDP) leading to a slowdown in the growth rate. To cope, developmental funds are dovetailed towards providing relief and other assistance. Therefore, to be able to achieve the desired targets of Sustainable Developmental Goals (SDGs), progress and expansion should remain resilient and uninterrupted. To cater to this concern, the Ministry of Home Affairs (MHA) has been assigned to the agenda of National Disaster Management Act 2005 forward by investing in prevention, mitigation, preparedness and eventually risk reduction. Ease of living for common citizen in context of disaster risk reduction and management accounts for realizing differential risk assessments and impact across all vulnerable groups from various hazards making inclusive developmental efforts a fundamental imperative. India is a multi-hazard prone country and is frequently affected by different hazards and keeping this in view, ease of living can be achieved by building capacities contributing towards better governance at State and District levels. To become a disaster resilient nation, reducing the losses due to physical, environmental and socio-economic factors is imperative. States and UTs in India have major role in promoting and implementing DRR agenda and the Disaster Management Plan at state level is a key instrument towards strategic and planned approach for risk assessment, prevention-mitigation, emergency response, capacity and recovery resources, in systemic ways.

This publication on State Disaster Management Plan (SDMP) Module is a humble attempt to convert the SDMP Guidelines developed by NDMA into a Training Module with an intent to be used as a guiding tool for the sole purpose of training and capacity building across the States and UTs in preparations of their disaster management plans. I would like to compliment my colleagues Asst. Prof. Dr Sushma Guleria and Jr. Cons. Ms. Kavya Mohan for this wonderful initiative and putting in sincere efforts on this. We hope that the Module will be of great use to all stakeholders at not just at the State levels but also at district and local levels in their endeavour for building their resilience. It is hoped that the present module will provide an insight to the trainees about the framework to be used for understanding about preparation of disaster management plans.



(Dr. Anil K. Gupta)
(HOD- ECDRM Division)

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(Sushma Guleria)

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1. Introduction

India is reckoned as one of the most disaster-prone countries amongst few others in the world, and therefore, Disaster Risk Reduction (DRR) and Management (DRM) initiatives require profound interventions and are comprehensive activity. Though the roots of present-day disaster management in India may be traced back to colonial period, the nature and scale of managing disasters in current times is surely a product of the global and domestic push over the last few decades. In contemporary times, effective and efficient disaster management strategies have become a global movement given the massive loss of lives and property entailed by these catastrophic events. As a result, almost all the countries in general, and those which are most disaster prone like India in particular, have evolved a comprehensive framework of disaster management consisting of legal framework, policy perspective, and implementation machinery along with ancillary support systems. The perception about disaster and its management has undergone a change following the enactment of the Disaster Management Act, 2005. The definition of disaster is now all encompassing, which includes not only the events emanating from natural and man-made causes, but even those events which are caused by accident or negligence. There was a long felt need to capture information about all such events occurring across the sectors and efforts made to mitigate them in the country and to collate them at one place in a global perspective. India's geo-climatic conditions as well as its high degree of socio-economic vulnerability, makes it one of the most disaster-prone country in the world. A disaster is an extreme disruption of the functioning of a society that causes widespread human, material, or environmental losses that exceed the ability of the affected society to cope with its own resources.

A disaster is not bound by political, social, economic or geographic boundaries. When it occurs, it impacts all. Globally, there has been an increase in the number of natural disasters over the past few years. The impact of such a calamity, however, does not remain confined to its physical component but transcends beyond it and impacts the socio-economic conditions of affected persons and places. India has been actively pursuing a paradigm shift in disaster management from a relief centric approach in the past to the current holistic one, encompassing all facets of disaster management. The understanding and approach to management of disasters, however, remain myopic and need to be broadened. A holistic approach needs to include events which may not be catastrophic and sudden, impacting large number of the people at one go, but may take a slow epidemic form with huge tolls over a period of time, such as road accidents

which result in maximum number of causalities: little or no attention is given to their prevention. Any approach to disaster management should consider that a single death in any disaster is more than a loss of human life; it impacts the entire family and puts the environment around them under stress.

India has made long strides in several areas towards strengthening the institutional mechanism, response capacities and the financial arrangement for different activities relating to disaster management. However, the example of Tsunami in Japan (2011) is a grim reminder that despite the best preparedness and highest response standard, disasters remain a challenge to humankind. We are yet to demystify nature and its fury which sometimes goes beyond the human imagination. The challenge before us is therefore, to strive towards higher levels of understanding, preparedness, mitigation efforts and response mechanisms. This in turn needs to be backed by better coordination among different central ministries, state government, Panchayat Raj Institutions, academic institutions, the corporate sector, civil societies and citizens at large.

Recognizing the hazard and vulnerability profile of the country, the requirement for protecting lives and assets from disaster as well as to prevent erosion of development gains attained over several years, the Government of India has been systematically addressing various challenges faced by the country. Traditionally, like many other countries, the focus was on response. The shift to a holistic approach started with the preparation of the Vulnerability Atlas and constitution of the High Powered Committee in the late nineties. The Ministry of Home Affairs was entrusted with the responsibility of coordinating disaster management activities at the national level. Soon after, in 2003, a framework for addressing disaster management in holistic manner was conceptualized and outlined in the national disaster management framework prepared by MHA. Subsequently, the National Disaster Management Act 2005 was enacted and the National Disaster Management Authority was established. Formation of similar structures by State governments at the State and District levels were made mandatory, and the National Disaster Management Policy 2009 was announced.

Recognizing that flawed development had aggravated various types of vulnerabilities, the need to consider disaster risk as a development problem was emphasized for the first time in the tenth Five year Plan (2002-2007). Certification of measures taken to ensure risk reduction and “do no harm” approach under development projects is now required before securing approval of funds. The government has also set up an expert group to identify measures required to reduce the existing risk as well as the measures

required to avoid creating new risks. Though States have amended development control regimes, the capacity to enforce the provisions in these instruments are not adequate. Therefore, greater importance on training large number of government and non-government functionaries as well as capacity development of the construction professionals is required. There are several good practices in the country, and a variety of measures to promote such information and knowledge-sharing will have to be encouraged. Additionally, issues of up-scaling will have to be addressed.

The geo-climatic zone in which India is located, the large land mass located in vulnerable areas along with the physical, social, and economic vulnerability of people living in high risk area makes it one of the most disaster prone countries in the world. Floods, droughts, earthquakes, cyclones and landslides are common hazards that India faces. Natural hazards have affected nearly six percent of the population and twenty four percent of deaths in Asia caused by disasters have occurred in India.

The need to eliminate the underlying vulnerabilities through systematic integration of disaster risk reduction in development programmes is being actively pursued at the National and State levels. Achieving India's' development goals and sustainable development are not possible unless we ensure that all development are disaster resilient. This would entail putting in place legal instruments, appropriate institutional arrangements, building capacities at all levels to carry out a variety of risk reduction measures and developing appropriate tools and guidelines. Against this backdrop, this Module tries to capture the need to develop a plan as well as outline some of the priority area that need focus in the near future.

It is in this context, that this Module is designed to cater specifically to disaster managers. The idea and National vision is to build a safer and disaster resilient India by developing a holistic, proactive, multi-disaster and technology driven strategy for DM. This will be achieved through a culture of prevention, mitigation and preparedness to reduce the impact of disasters on people. The entire process will center stage the community and will be provided momentum and sustenance through the collective efforts of all government agencies supported by Non-Governmental Organisations (NGOs).

DURATION

The duration of the training programme is for three days only. The Module can be clubbed with a short pre or post training Brainstorming meet in order to facilitate the preparation of the SDMP.

GUIDANCE NOTE FOR TRAINERS/ FACILITATORS

Who can facilitate this Training?

The facilitator will ideally have practical experience and a good conceptual understanding of Disaster Risk Reduction (DRR) including knowledge of mainstreaming issues and challenges of the apt disaster risk management and mitigation measures. Facilitators/ Trainers can be identified from National Institutes, Consultants with domain experience of disaster management and related aspects. Facilitators need to be confident trainers, with a working knowledge of monitoring and evaluation practices.

Who Shall Use this Module and Group Size

This training module is developed for state and district level functionaries like Disaster Management Practitioners, Revenue Officials, Trainers in Disaster Management, State Institutes, Civil Defense Volunteers, Middle level officials from various line departments including Police, Fire, Forest, Health, Women and Child Development, Municipalities, Elected Representatives from Gram Panchayat, Community Based Organization (CBO) and Non-governmental Organization (NGO) members. After completing the programme, these participants will be expected to participate/ facilitate in the preparation of the State DM plans of their respective States. Since this is simulation/ group exercise-based training programme, the ideal number of participations per programme should not be more than 30. It is also encouraged to have a good number of women participations in the programme. As it is hard to achieve these numbers for a variety of reasons, it is important to initiate the process of seeking nominations fairly in advance.

About the Training Module

Section 23 of the DM Act 2005 provides that there shall be a DM plan for every State. It outlines the broad coverage of the plan as well as the requirements of consultation in the preparation of the State plans. It also provides for annual review and updating of the plan, and enjoins upon the State governments to make provisions for financing the activities to be carried out under these plans. It provides for the departments of the State governments to draw up their own plans in accordance with the State plan. The State plans shall be prepared by the State Executive Committee (SECs) in conformity with the guidelines to be issued on related matters by the State Disaster Management Authority (SDMA) having regard to the guidelines laid down in this regard by the National Disaster Management Authority (NDMA), and after such consultation with

local and district authorities and the people's representatives as the SEC may deem fit. Such a State plan prepared by SEC shall be approved by the SDMA.

Ideally, State DM plans should be made after vulnerability assessment and risk analysis of the respective State has been undertaken. It is felt that the preparation of plans cannot, and should not, await the outcome the disaster risk analysis. On the basis of extant information and knowledge, a plan should be formulated by every State and updated regularly adding fresh inputs on an ongoing basis. The entire module is learner centered where the involvement of the participants will play a major role as they eventually play lead role in facilitating such plan preparations.

The Module is divided into 3 Sub-modules and each Sub-module is divided into different learning units. Each session begins with a statement of its purpose, process, the skills needed by the facilitator, and materials required. All the modules, learning units and sessions therein are built on the basis of the principles of adult learning and it has been tried to keep the sessions based on experiential learning methods. While the focus of training approach and methodology is on experiential methods, the module uses a combination of traditional learning methods, such as presentations and discussions, along with more participatory and experiential learning approaches, e.g. case studies, group work, and reflections on personal experience. A list of hand outs, sources, references and further readings is also provided in the Module.

The Module has been designed in a particular order; yet, it is flexible in usage and allows the trainers to revise it as per the clientele group and specific contexts. The modules and sessions can be used in the order presented, on their own, or in combination with other individual sessions and modules. The material can be adapted by the facilitator and contextualized. Other case studies and relevant references can be added or substituted. The way the sessions are delivered will largely depend upon the expertise the facilitators bring in the sessions. Rough estimated timings for sessions are offered, but these should be adapted to fit the time available and the level of participants.

The approach to the preparation of the State DM plan should be holistic and address all the hazards the State vulnerabilities. It should take into account past lessons and experiences; build on good existing systems at different levels. It should address the need to streamline the systems and develop operational and management procedures. This Module is developed from the NDMA Guidelines on State Disaster Management Plan (SDMP) preparation which were formulated in 2007 and the intent is to train all States to develop their respective SDMPs in a standardized format.

Venue

This is a classroom based programme and so, the venue can be any Revenue Office Premises/ State Institutes/ premises/ any other suitable Training Hall.

Language of Instruction

The medium of instruction most suited will be use of the local language. However, external Resource Persons who are called for specific sessions may use Hindi as an alternative local language or English wherever suited.

Objectives

The aim of the State DM plan is to ensure that the following components of DM are addressed to facilitate planning, preparedness, operational, coordination and community participation. Flowing from the National vision and the aforementioned approach, the objectives guiding the policy formulation are:

- Promoting a culture of prevention and preparedness by ensuring that DM receives the highest priority at all levels.
- Ensuring that community is the most important stakeholder in the DM process.
- Encouraging mitigation measures based on state-of-the-art technology and environmental sustainability.
- Mainstreaming DM concerns into the developmental planning process.
- Putting in place a streamlined and institutional techno-legal framework for the creation of an enabling regulatory environment and a compliance regime.
- Developing contemporary forecasting and early warning systems backed by responsive and fail-safe communications and Information Technology (IT) support.
- Promoting a productive partnership with the media to create awareness and contributing towards capacity development.
- Ensuring efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society.
- Undertaking reconstruction as an opportunity to build disaster resilient structures and habitat.
- Undertaking recovery to bring back the community to a better and safer level than the pre-disaster stage.

Structure of the Module

The module has been divided into four sub modules. The detailed work plan is as follows:

Day 1

Topic	Time
Introduction of the participants/ Expectation from the course Setting the tone of the training programme	30 minutes
Sub Module 1: Realm of Disaster Management in India (330 minutes)	
Basic Concepts of Disaster Management	90 minutes
Hazard, Vulnerability and Capacity Analysis	90 minutes
Risk Assessment	30 minutes
Group Work on HRVC Analysis: Field/ Simulation based	120 minutes

Day 2

Topic	Time
Sub Module 2: Preparation of State Disaster Management Plan (SDMP) (330 minutes)	
The Disaster Management Act 2005- Paradigm shift	30 minutes
Group Work on SDMP- Review/ SWOT Analysis	60 minutes
National Vision	15 minutes
The State Plan: Key responsibilities of Agencies	30 minutes
Guiding Principles for the preparation of State Plans	30 minutes

Day 3

Topic	Time
Sub Module 3: Disaster Risk Reduction and Management: Inclusive Approach (330 minutes)	
Basic features of SDMP	60 minutes
Group Work on SDMP- Review/ SWOT Analysis	60 minutes
The Framework for preparation of SDMP	60 minutes
General and Disaster specific Action Plan	60 minutes
Cross-cutting issues	90 minutes

Day 4

Topic	Time
Sub Module 4: State Disaster Management Plan: Step by Step Guide (330 minutes)	
State Disaster Management Plan: Process	60 minutes
SDMP: Template for ministries/ Departments	15 minutes
Group Work on Preparation of SDMP	165 minutes

Day 5

Topic	Time
Sub Module 5: State Disaster Management Plan: Review and Validation Process (180 minutes)	
Funding Arrangements	15 minutes
Drill, Review and Updation Process	30 minutes
Evaluation and Validation Mechanism	15 minutes
Group Presentation: Participants	90 minutes
Valediction & Road Map ahead	30 minutes

Opening the course

As opening session is going to set the tone of the programme, it has to be planned and conducted prudently. Run an opening session of not more than one hour on the first day of the course. This session is the opportunity to share the purpose and objectives of the training course, lay out the agenda, and set ground rules. It is also an opportunity for the participants to introduce themselves and their experience, explain their motivation for joining the training, and state their expectations from the course. You may want to use an 'ice-breaker' exercise like the one below to facilitate participants get to know each other, and to put them at ease, comfort and motivate participants to interact freely. Following days can have scope for half-an-hour recapitulation sessions before beginning the day formally.

Rapport Building

Building rapport and trust with the participants is essential in adult learning-Andragogy. The whole idea to make a session interesting and receptive will largely depend upon how comfortable the participants feel in presence of their Trainer. For this, a relationship of trust, friendship and rapport is the key to facilitation of appropriate participation.

Knowing Each Other

After a brief introduction about yourself, ask the participants to assemble in the middle of the training hall. Once the participants are fully with you, ask them to start walking inside the training hall in any direction they wish. After about 30-40 seconds, ask them to increase the pace of their walk. After another 60 seconds, ask the participants to walk as fast as they can without hurting anyone or bumping into each other. This milling around activity loosens people up both physically and mentally. End by telling people to group into pairs of twos' by either identifying the person having a date of birth closest to theirs or assign two people with the same number and ask them to assemble. This process will require monitoring and facilitation. Partners in each pair can then be asked to know the following about each other:

- Name and current profile
- Educational background
- Work Experience
- Expectations from the training
- Any Hobby etc.

After about 5-10 minutes, ask each pair to introduce to the class their partner/ buddy and their expectations from the training to the entire group. This entire exercise can be completed in a stipulated time(30 minutes approx).

Feedback from participants

Feedback is the way to learn about the training sessions as well the Resource Persons and their efficacy from the participants' perspective. This can be conducted as an end of module feedback from the participants. Concurrent feedback can also be observed and tapped as it is for learning about participants' reactions, responses and percent reviewed. Based on the feedback, facilitators can assess the strengths, weakness and gaps of the sessions and refine the module accordingly. This process can be done at the end of each day by spending about 15 minutes on feedback or on the final day of the course, a dedicated slot can be marked for feedback.

SUBMODULE 1

Realm of Disaster Management in India

Learning Objectives

At the end of the session, participants should be able to:

- Explain the basic concepts of disaster management and analyze the stages of DM cycle.
- Explain the process of conducting hazard, vulnerability, capacity and risk analysis of the village.
- Illustrate the tools that can be used for carrying out the hazard, vulnerability, capacity and risk analysis.

Duration: (10.00 a.m-17.00 p.m: excluding time for Lunch and Tea Breaks)

Equipment and Materials Needed:

Flip Charts, Markers, Pens, Sticky notes, Laptop, LCD/Projector, Chart papers, and Blackboard.

USEFUL HANDOUTS: 1,2,3 & 4

Method(s):

Interactive lecture presentation

Questions and Answers

Group Activity

Discussion & Use of Audio-Video Aid

Session Plan

The trainer/facilitator should start the session with an informal interaction with the participants to first know their understanding about the subject of disaster management and various terms, disaster and development linkages, institutional set-up in the country for DM etc. This can be more like an expectation setting exercise. Then make a brief presentation explaining the basic concepts in disaster management and highlighting the critical linkages across development, disasters and climate

change. Follow it up with an open house discussion inviting comments and questions. Trainers' may divide the timings for the various sessions as per their convenience (flexi-mode).

Wrapping up the discussion: Form 4-6 groups of participants (depending upon the size of the batch/ total number of participants) and ask them to discuss the inter-sectoral nature of disaster risk reduction measures along with development agenda and their mainstreaming in the State plans in the light of their own work experience in their respective fields. They can carry this out as a group work. Ask the working groups to share their findings and analysis in a presentation in the plenary. Groups will have the freedom to use power point, flip charts, cards, or just speech for making this presentation. Give 5 minutes at the end for some questions and answers or scope for discussion on each presentation. Close the session with a presentation summing up the key learning from the session and highlighting the points from Sub Module1.

Context

This learning unit aims at helping the participants understand the basic concepts, terminologies used in Disaster Management. It also helps examine the critical linkages across development and disasters in the specific context of preparation of State level DM plans.

Disasters are sometimes classified according to whether they are "natural" or "human-induced." It was during the Eleventh five-year plan document preparation that the Government of India gave impetus to mainstreaming disaster risk reduction as one of the priorities programmes in the development planning process and disaster management. As mentioned in the report of the working group on disaster management for the eleventh plan and also in the various initiatives towards this effort, the way forward comprised of the following-

- Policy guidelines at the macro level that would inform and guide the preparation and implementation of disaster management and development plans across sectors,
- Building in a culture of preparedness and mitigation,
- Operational guidelines of integrating disaster management practices into development, and specific developmental schemes for prevention and mitigation of disasters,
- Having robust early warning systems coupled with effective response plans at district, state and national levels,

- Building capacity of all stakeholders,
- Involving the community, NGOs, CSOs and the media at all stages of disaster management,
- Addressing gender issues in disaster management planning and developing a strategy for inclusive approach addressing the disadvantaged sections of the society towards disaster risk reduction, and
- Addressing climate risk management through adaptation and mitigation.

To reduce underlying vulnerabilities and the exposure to current and future losses and damage caused by natural hazards and disasters it is crucial to systematically mainstream DRR into various crucial sectors in synergy with climate change adaptation and natural resources management. The World Conference on Disaster Risk Reduction which was held from 18 to 22 January 2005 in Kobe, Hyogo, Japan, and adopted the present Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (here after referred to as the "Framework for Action"). The Conference provided a unique opportunity to promote a strategic and systematic approach to reducing vulnerabilities and risks to hazards. It underscored the need for, and identified ways of, building the resilience of nations and communities to disasters. Further to this, the Sendai Framework for Disaster Risk Reduction 2015-2030 that was adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, on March 18, 2015 outlines seven clear targets and four priorities for action to prevent new and reduce existing disaster risks: (i) Understanding disaster risk; (ii) Strengthening disaster risk governance to manage disaster risk; (iii) Investing in disaster reduction for resilience and; (iv) Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction. It aims to achieve the substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries over the next 15 years. Juxtapose, the Sustainable Development Goal encompasses the agenda of people, planet and prosperity. The SDGs will form the overarching international political vision relating to sustainability during the lifetime of the new Future Earth initiative. The SDGs goals may help create a fresh global narrative around a common future to mobilize collective action and help develop a shared understanding of interconnected risks and solutions. This learning unit captures the basics of disaster management and also tries to analyze its linkages with development and the changing climate variations so as to enable us address the impact of these inter-linkages across various sectors with respect to the SDGs and SFDRR.

Session 1.1: Basic Concepts of Disaster Management

Training Methodology: Power Point Presentation, Discussion & Audio-Video

Duration: 90 minutes

Training Note: The trainer/ facilitator is encouraged to utilize initial few minutes of the session by asking the participants to brainstorm and discuss on what they know about disaster management and related terms. The Trainer can use few Audio-Video clippings to make the session interesting.

Technical Notes

Disasters have always been a result of human interaction with nature, technology and other living entities. Sometimes unpredictable and sudden, sometimes slow and lingering, various types of disasters continually affect the way in which we live our daily lives. Human beings as innovative creatures have sought new ways in which to curb the devastating effects of disasters. However, for year's human conduct regarding disasters has been reactive in nature. Communities, sometimes aware of the risks that they face, would wait in anticipation of a disastrous event and then activate plans and procedures. Human social and economic development has further contributed to creating vulnerability and thus weakening the ability of humans to cope with disasters and their effects.

Disaster Management is the process of reducing the risk of, and vulnerability to hazards. Traditionally Disaster Management meant the measures taken to bring quick and effective relief to disaster hit areas. However, contemporary studies of disaster management focus on preventing disasters by pre-planning effective measures for regions that are prone to disaster; both human-induced as well as natural. Disaster management can thus be defined as the body of policy and administrative decisions and operational activities which pertain to the various stages of a disaster at all levels.

To understand Disaster Management, it is necessary to understand the concepts of Vulnerability, Risk, Hazard and Disaster that are embedded in the process of Disaster Management. These have been discussed below:

Hazard is a natural or man-made phenomenon that may cause physical damage, economic loss and threaten human life and well-being or has the potential to cause damage to objects, buildings and the environment. Such phenomena may affect different places singularly or in combination at different times. The hazard has

varying degrees of intensity and severity. A hazard is measured and defined by its nature (type of hazard), location and extent, scope and intensity (damage potential) and its probability of occurrence, duration and frequency (repetition cycles) (DM Act, 2005).

As per the High-Power Committee Report of 2001, it followed a highly process-oriented and participatory approach at the national, state and district levels involving all concerned governments, ministries, departments, scientific, technical, research & development organizations, social science institutions and covering more than a hundred non-governmental organizations. As the deliberations of the Committee intensified into a nation-wide consultation at all levels, the country continued to face several disasters including Orissa Super-cyclone of October, 1999, drought in various parts of the country and the worst ever earthquake in Gujarat in January, 2001. It is said that disasters offer a unique opportunity to learn, and the Committee indeed tried to learn lessons from various disasters which took place in the country and outside, and to incorporate their lessons in its thinking in terms of improving the proposed strategy to cope with disasters. The set-up that the committee is proposing would provide for such a process of continuous learning at all levels 33 potential hazards have been identified for Indian context which can be further classified based on their origin as follows:

Disasters identified by the High-Powered Committee

Water and Climate related disasters	Geologically related disasters	Chemical, Industrial and Nuclear related disasters	Accident related disasters	Biologically related disasters
Floods and heavy rainfall Cyclones and Hurricanes Hailstorm	Landslides and Mudflows Earthquakes Dam	Chemical and Industrial Disasters Nuclear	Forest Fires Urban Fires Mine Flooding Oil Spill Major Building	**Biological Disasters and Epidemics Pest Attacks Cattle**
Cloud Burst Heat Wave	Failures/ Dam Bursts Mine Fires	Disasters	Collapse Serial Bomb Blasts Festival related Hazards/ Stampede	**Epidemics Food Poisoning**
Cold Wave Snow Avalanches Droughts Sea Erosion Thunder and Lightning			**Electrical Disasters and Fires Air, Road and Rail Accidents Boat Capsizing Village Fire**	

List of few prominent disaster events in the country

Name of Event	Year	State & Area	Fatalities
Eluru outbreak	2020	Andhra Pradesh	01 dead, 450 infected
Chemical Factory blast	2020	Ahmedabad, Gujarat	12 dead, 9 injured
Tarique Garden Collapse	2020	Mahad	at least 12 dead, 60 trapped
Bird Flu	2020	Kerala, Rajasthan, Madhya Pradesh, Himachal Pradesh	4,29,480 birds dead; about 40,000 culled
Srisailam hydroelectric power plant fire	2020	Telangana	09 dead
Vijaywada Covid-19 Facility Fire	2020	Andhra Pradesh	11 dead, 22 injured
Dahej Chemical Plant Exlosion	2020	Dahej, Gujarat	05 killed, 57 injured
Uttrakhand Forest Fire	2020	Uttarakhand	02 dead, 46 fires reported, 71 hectares affected
Aurangabad Railway Accident	2020	Aurangabad	16 dead; 01 injured
Visakhapatnam Gas Leak	2020	Visakhapatnam, Andhra Pradesh	11 dead, more than 1000 affected,
Oil and Gas Leak	2020	Assam	02 dead, large scale local evacuations, environmental damage to nearby Dibru-Saikhowa National Park
Covid-19 Pandemic	2020	Pan India	144 K (until November 2020)
Cyclone Nivar	2020	Tamil Nadu, Puducherry, Andhra Pradesh	08 dead; 1,112,000 affected; 2,294 houses/ huts damaged; 6133 homes left stranded
Locust attack	2020	Gujarat, Rajasthan, Maharashtra, Punjab, Haryana, Madhya Pradesh, Delhi NCR and Uttar Pradesh	Originated in East Africa in 2019, affected 23 countries through April 2020
Cyclone Burevi	2020	Tamil Nadu and Kerala	11 dead, 5 missing
Floods	2020	West Bengal, Gujarat, Assam, Bihar, Karnataka, Maharashtra, Tamil Nadu, Madhya Pradesh, Kerala, Meghalaya, Jammu & Kashmir, Uttar Pradesh, Chhattisgarh, Nagaland & Punjab	death toll reached 396 people , 700,000 evacuated people, and around 14,350,000 affected people across the co untry

Name of Event	Year	State & Area	Fatalities
Landslide	2020	Kerala	43 dead and 28 missing
Cyclone Amphan	2020	Odisha and West Bengal	86 people died in West Bengal
Cyclone Vayu		Gujarat	4 injuries
Cyclone Nisarga		Goa, Maharashtra and Gujarat	6 deaths and 16 injuries, 100,000 people evacuated
Cyclone Fani	2018	Ganjjam, Gajapati,Khurda andJajpur.	8 lakh people evacuated.
Kerala floods	2015	Kerela	
Floods	2014	Jammu & Kashmir	-
Cyclone HudHud	2014	September 2014	-
Odisha Floods	2013	Odisha	21 Fatalities
Andhra Floods	2013	Andhra Pradesh	53 Fatalities
Cyclone Phailin	2013	Odisha and Andhra Pradesh	23 Fatalities
Floods/Landslides	2013	Uttarakhand and Himachal Pradesh	4,094 Fatalities
Cyclone Mahasen	2013	Tamil Nadu	08 Fatalities
Uttarakhand Floods	2013	Uttarkashi,Rudraprayag and Bageshwar	52 Fatalities
Cyclone Nilam	2012	Tamil Nadu	65 Fatalities
Assam Floods	2012	Assam	-
Cyclone Thane	2011	Tamil Nadu, Puducherry	47 Fatalities
Odisha Floods	2011	19 Districts of Odisha	45 Fatalities
Sikkim Earthquake	2011	North Eastern India with epicenter near Nepal Border and Sikkim	97 people died (75 in Sikkim)
Cloudburst	2010	Leh, Ladakh in J&K	257 people died
Drought	2009	252 Districts in 10 States	
Krishna Flood	2009	Andhra Pradesh, Karnataka	300 people died
Kosi Floods	2008	North Bihar	527 deaths, 19,323 livestock perished, 2,23,000 houses damaged, 3.3 million persons affected
Cyclone Nisha	2008	Tamil Nadu	204 deaths
Kosi- Bihar Floods	2008	Bihar	434 Dead bodies
Tsunami	2004	Tamil Nadu, Kerala, Karnataka	10,749 casualties, 5,640 people missing
Gujarat Earthquake	2001	Kutch	13,805 death, injured another 167,000
Orissa Super Cyclone	1999	Bhubaneswar	more than two lakh animals were killed and 25 lakh people were marooned
Maharashtra Earthquake	1993	Latur	10,000 people died, while another 30,000 were injured.

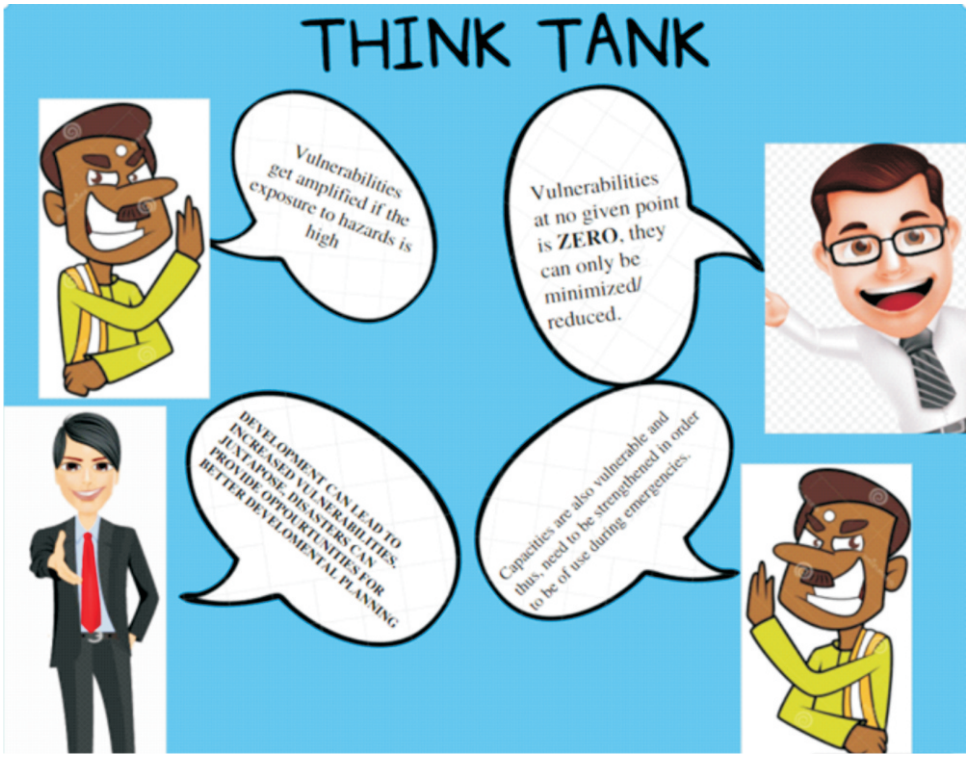
Source: Wikipedia

National Policy for Disaster Management was brought out by NDMA in 2009. The hazard maps prepared for the Vulnerability Atlas of India (2006) was referred in National Policy for describing the extent of earthquakes, flood and cyclone hazards in the country. The objectives of the policy, inter alia, include promoting a culture of prevention, preparedness and resilience at all levels through knowledge, innovation and education, besides mainstreaming disaster management into development planning process. Given the increasing concern about the impact of disasters, the broader global awareness of the social and economic consequences of disasters caused by natural hazards developed as the decades progressed. The present Sendai Framework for Disaster Risk Reduction 2015-2030, which was adopted at the Third UN World Conference on Disaster Risk Reduction (WCDRR) is built on the basis of the experience matured in the implementation of the Hyogo Framework for Action and other relevant international frameworks. India is also committed to make all efforts to contribute to realization of the global targets by improving the entire disaster management cycle in India by following the recommendations in the Sendai Framework and by adopting globally accepted best practices. A mile stone in the history of disaster management in India is the National Disaster Management Plan which has been drawn by NDMA in 2016 and updated in 2019, with the vision "Make India disaster resilient, achieve substantial disaster risk reduction, and significantly decrease the losses of life, livelihoods and assts-economic, physical, social, cultural, and environmental – by maximizing the ability to cope with disasters at all levels of administration as well as among communities". Since the publication of Vulnerability Atlas of India (2006), there has been invaluable feedback from users on the Atlas.

Hazard identification and analysis is essential to determine the events which are most likely to affect a community and to make decisions about who or what to protect as the basis of establishing measures for prevention, mitigation, and response. In the face of a particular hazard, it is important to determine how each hazard interacts with each and every dimension of vulnerability. Therefore, a study of vulnerability is a study of what might happen to people or communities and while it is not certain that a crisis might occur; it definitely affects different populations in a different manner.

Vulnerability is a term used to describe exposure to hazards and shocks and can be defined as the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a hazard. It involves a combination of factors that determine the degree to which someone's life, livelihood, property and other assets are put at risk by a discrete and identifiable event (or series or cascade of such events) in nature and society.

Communities or individuals can become more vulnerable if they are more likely to be badly affected by events outside their control. It has two components: exposure to hazards and difficulty (through lack of resources) to cope with, and recover from them. The dimensions of vulnerability include social, geographical, economic, environmental and political processes that influence how hazards affect people in varying ways and with different intensities. Some groups are more prone to damage, loss and suffering in the context of differing hazards and the key variables explaining variations of impact include class, occupation, caste, ethnicity, gender, disability and health status, age and immigration status and the nature and extent of social networks.



The four different types of Vulnerability are:

Physical Vulnerability: The physical vulnerability of an area depends on its geographic proximity to the source and origin of the disasters e.g. if an area lies near the coast lines, fault lines, unstable hills etc. it makes the area more vulnerable to disasters as compared to an area that is far away from the origin of the disaster. Physical vulnerability includes the difficulty in access to water resources, means of communications, hospitals, police stations, fire brigades, roads, bridges and exits of a building or/an area, in case of disasters. Furthermore, the lack of proper planning and implementation in construction of residential and commercial buildings results in buildings those are weaker and vulnerable in earthquakes, floods, landslides and other hazards.

Social Vulnerability: Socially vulnerable community has weak family structures, lack of leadership for decision making and conflict resolution, unequal participation in decision making, weak or no community organizations, and the one in which people are discriminated on racial, ethnic, linguistic or religious basis. Other social factors such as culture, tradition, religion, local norms and values, economic standard, and political accountability also play a vital role determining the social vulnerability of a community.

Economic Vulnerability: Economic vulnerability of a community can be assessed by determining how varied its sources of income are, the ease of access and control over means of production (e.g. farmland, livestock, irrigation, capital etc.), adequacy of economic fall back mechanisms and the availability of natural resources in the area.

Environmental Vulnerability: Livelihoods located in areas experiencing high loss of natural vegetation cover are vulnerable to soil loss and low groundwater recharge. (The latter could lead to reduced freshwater availability in the long-term).

Capacity and Vulnerability are inversely proportional. Capacities represent the resources people have to resist, cope with, or recover from a hazard, or "capacities". Vulnerability is about "not having" while capacities are about "having". Individuals, households, communities and nations have resources that can resist the impact of a hazard and/or recover quickly from them. A hazard does not cause a disaster unless there are people affected by it; people who do not have the capacity to resist. People's

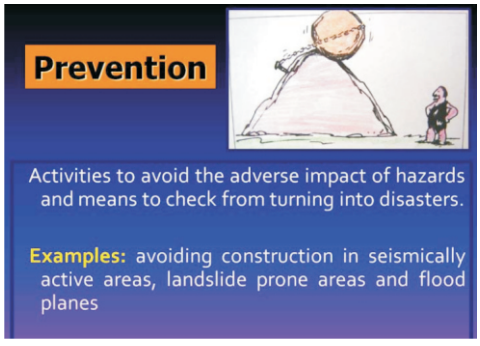


capacities are also highlighted by what are known as "coping strategies". These are responses linked to capacities (or resources) which, in the face of a hazard determine how vulnerable or resilient an individual or household can be towards impact of disasters. Community resilience and capacity to deal with different hazards have been found to be lacking in most human societies.

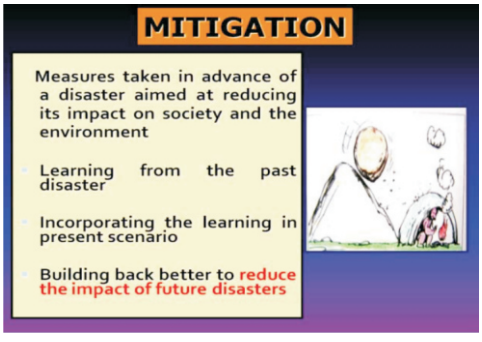
Disaster Management Cycle: Stages and Inter-relations:

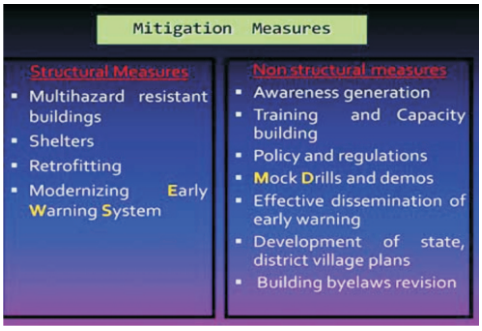
Disaster management aims to reduce, or avoid the potential losses from hazards, assure prompt and appropriate assistance to victims of disaster, and achieve rapid and effective recovery. The disaster management cycle illustrates the ongoing process by which governments, businesses, and civil society plan for and reduce the impact of disasters, react during and immediately following a disaster, and take steps to recover after a disaster has occurred.

Prevention: All the measures taken to ensure that any approaching hazard does not convert into a detrimental disaster event and can be avoided as best possible. It is the concept and intention to completely avoid potential adverse impacts through action taken in advance. Examples include dams or embankments that eliminate flood risks, land-use regulations that do not permit any settlement in high risk zones, and seismic engineering designs that ensure the survival and function of a critical building in any likely earthquake. It is however not always possible to prevent a hazard event from taking place, in this case the task transforms to that of mitigation which aims to minimize the hazard impact.

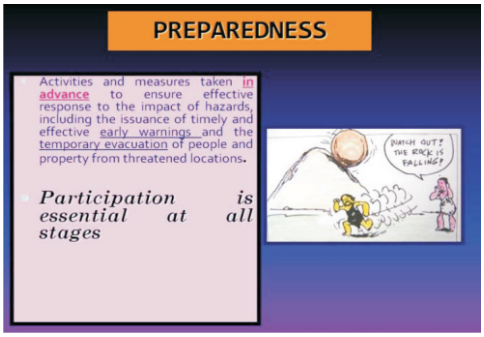


Mitigation: Disaster Mitigation refers to all the steps that are taken to reduce the vulnerability of people to disasters. Thus providing irrigation and water harvesting techniques in drought prone area, creating embankments in flood prone area, and building strong and resistant infrastructure in earthquake prone areas come under mitigation measures. Mitigation is the

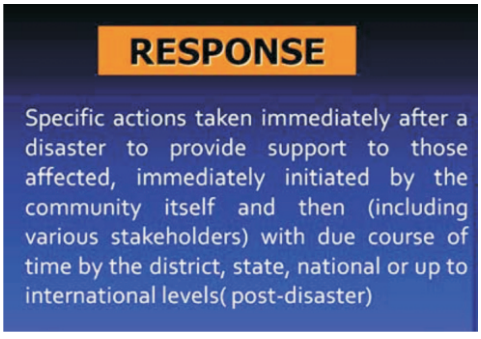




lessening or limitation of the adverse impacts of hazards and related disasters. The adverse impacts of hazards often cannot be prevented fully, but their scale or severity can be substantially lessened by various strategies and actions. Mitigation measures encompass engineering techniques and hazard resistant construction as well as improved environmental policies and public awareness. It should be noted that in climate change policy, "mitigation" is defined differently, being the term used for the reduction of greenhouse gas emissions that are the source of climate change.

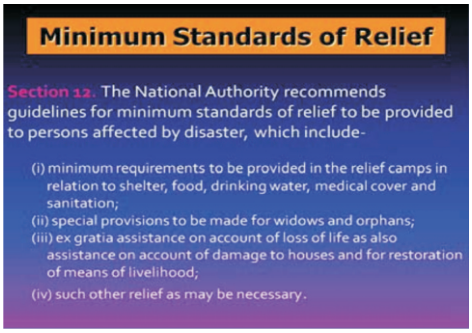


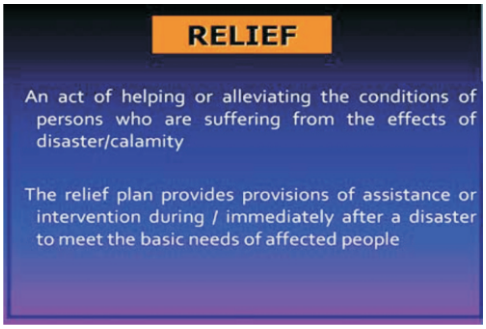
Preparedness: Goal of emergency preparedness programs is to achieve a satisfactory level of readiness to respond to any emergency situation through programs that strengthen the technical and managerial capacity of governments, organizations, and communities. These measures can be described as logistical readiness to deal with disasters and can be enhanced by having response mechanisms and procedures, rehearsals, developing long-term and short-term strategies, public education and building early warning systems. Preparedness can also take the form of ensuring that strategic reserves of food, equipment, water, medicines and other essentials are maintained in cases of national or local catastrophes. During the preparedness phase, governments, organizations, and individuals develop plans to save lives, minimize disaster damage, and enhance disaster response operations.



Response: The aim of emergency response is to provide immediate assistance to maintain life, improve health and support the morale of the affected population. Such assistance may range from providing specific but limited aid, range from providing specific but limited aid, such as assisting refugees

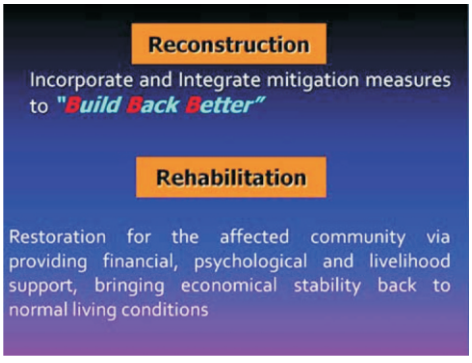
with transport, temporary shelter, and food, to establishing semi-permanent settlement in camps and other locations. The provisions of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected".





Recovery (Reconstruction and Rehabilitation): As the emergency is brought under control, the affected population is capable of undertaking a growing number of activities aimed at restoring their lives and the infrastructure that supports them. There is no distinct point at which immediate relief changes into recovery and then into long-term sustainable development. There will be many opportunities during the recovery period to enhance prevention and increase preparedness, thus reducing vulnerability.

Ideally, there should be a smooth transition from recovery to on-going development. Recovery activities continue until all systems return to normal or better. Recovery measures, both short and long term, include returning vital life-support systems to





minimum operating standards; temporary housing; public information; health and safety education; reconstruction; counseling programs; and economic impact studies. Information resources and services include data collection related to rebuilding, and documentation of lessons learned. The reconstruction phase calls for a build back better (BBB) component wherein there is scope to integrate safe structural measures into the new constructions. Similarly, in Rehabilitation, a holistic approach is advocated whereby not only emphasis on livelihood generation is encouraged but to ensure those impacted psychologically are also well socially established post a disaster.

DISASTER MANAGEMENT CYCLE

Disaster is an event or a series of events which gives rise to causalities and/or damage or loss of property, infrastructure, essential services or means of livelihood on a scale that is beyond the normal capacity of the affected communities to cope with unaided.

Disaster is defined as:

> *"...A serious disruption of the functioning of a society, causing widespread human, material, or environmental losses which exceed the ability of the affected society to cope using its own resources."*

Key Stages of Disaster Management

There are three key stages of activity within disaster management.

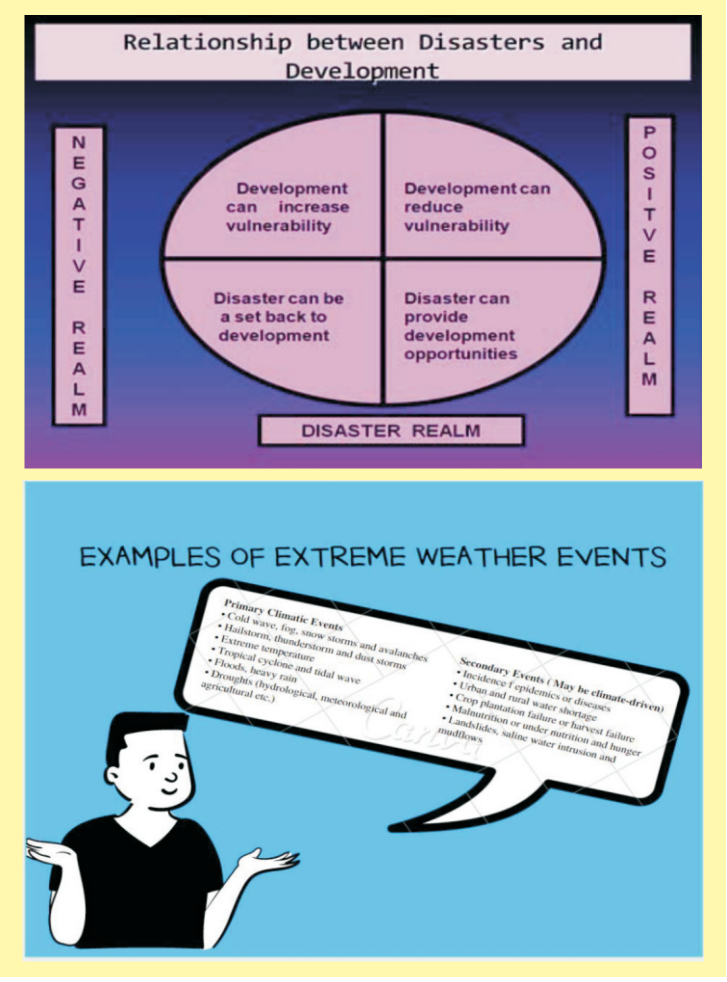
1. **Pre-Disaster:** Here we mostly deal with the impending Hazards and before a disaster to reduce the potential for human, material or environmental losses caused by hazards and to ensure that these losses are minimized when the disaster actually strikes.
2. **During:** It is to ensure that the needs and provisions of victims are met to alleviate and minimize suffering.
3. **Post Disaster:** After a disaster to achieve rapid and durable recovery which does not reproduce the original vulnerable conditions

Traditionally people think of disaster management only in term of the emergency relief period and post disaster rehabilitation. Instead of allocated funds before an event to ensure prevention and preparedness. A successful disaster management planning must encompass the situation that occurs before, during and after disasters. These phases can be best represented as shown in the following figure.

Development

In an evolving economy, development process is an ongoing activity. Long-term prevention/disaster reduction measures for examples like construction of embankments against flooding, irrigation facilities as drought proofing measures, increasing plant cover to reduce the occurrences of landslides, land use planning, construction of houses capable of withstanding the onslaught of heavy rains/wind speed and shocks of earthquakes are some of the activities that can be taken up as part of development plans.

THINK TANK



1.2: Hazard, Risk, Vulnerability and Capacity (HRVC) Analysis

Training Methodology: Power Point Presentation, Brainstorming, Discussion

Situational Analysis

Duration: 30 minutes

Training Methodology: Free Listing

Training Note: A rough sketch of the situation map can be drawn by the participants and the existing situation of the State/ Districts are depicted on the map with the assistance of the trainer. An updated revenue map can be used as a reference for carrying out this exercise. Trainers may like to keep this in mind that a revenue map would only be depicting the geographic area but, other local details need to be captured by the participants on the sketch to be drawn by them.

The situational profile would include information like population, geographical area, temperature, rainfall, agricultural land, cropping pattern, education, economy, occupation, literacy rate, income, rivers, road, industries, hospitals, schools, temples, sex ratio, families below poverty line, livelihood pattern, drinking water sources, critical establishments and other critical infrastructure.

The participants can be asked to depict the following information on the map. The information which can be depicted on the map can be collated and used as a supplement for assessing the current situation of the State/ Districts.

- Other states/ districts in the North, South, East, and Western directions.
- Distance to the nearest states/ district.
- Hills, hillocks, elevated land, inclines, low lying areas, high tide lines etc.
- Nearest water bodies and distance from sea (for coastal States).
- Number of Men, women, children, disabled, elderly and Transgender population. Segregated data for aged population, pregnant mothers, those dependent upon specific medications for their survival etc. can also be mapped.
- Housing Type: Kutcha, Pucca, Semi-kutcha houses.
- Natural resources in the village, for e.g. Lands and fields, Forests/ Trees, Tanks and ponds / Tube Wells / Wells etc.
- Different livelihoods practiced in the village, for e.g. agriculture, fishing, seed collection, weaving, wage labour work and so on.

- List of assets of different communities, for e.g. Boats, fishing crafts, Nets, Irrigation facilities of farmers, implements, chemical and industrial manufacturing plants, other inventories etc.
- Existing safe and risk prone infrastructure in the State/districts and their location.

This information is put up on a map and displayed. The participants study it and suggest any errors or oversights there may have been. The mapping session is important for situational analysis because the following stages to contingency planning depend on the information listed.

Overview of the State:

- Location
- Area and Administrative Divisions

State Disaster Management Authority

Name/ Address with Contact Numbers	Role in SDMA	Responsibilities

State Disaster Management Committee

S. No	Name of Individual /Authority	Designation	Affiliation/Address with contact details	Status / Role in SDMC	Responsibilities

Demographic Details:

Household Details

S. No.	Name of the block	No. of APL -HH				No. of BPL -HH			
		ST	SC	OBC	GEN	ST	SC	OBC	GEN

Population

S. No.	Name of the block	SC		ST		OBC		GEN		TOTAL	
		M	F	M	F	M	F	M	F	M	F

Type of Workers

S. No.	Type of Workers							
	Skilled Workers		Semi Skilled Workers		Unskilled Workers		Total Workers	
	M	F	M	F	M	F	M	F

Literacy Rate in Percentage

Category							
SC		ST		OBC		GEN	
M	F	M	F	M	F	M	F

B. **Topographical Details**

Climate and Rainfall:

S. No.	Month	Average Rainfall (in mm)	Actual Rainfall (in mm)

Rain Recording Stations:

- Total No. of Rain Recording stations in the District.
- Location of Rain Recording stations

(Telephone Numbers of the Rain recording stations)

Month wise Height and lowest Temperature recorded in the District

S. No.	Month	Maximum Temperature (in Centigrade)	Minimum Temperature(in Centigrade)

Geographical Area (in Hectare):

a) Paddy

S. No.	Name of the Block	Agricultural Land (ha)			Grazing land	Forest Land (ha)	Others	Total area
		High	Medium	Low				

b) Non- Paddy

S. No.	Name of the Block	Agricultural Land (ha)		
		High	Medium	Low

Land Holding pattern: (No. of HH)

S. No.	Name of the Block	Big Farmers	Marginal farmers	Small farmers	Agricultural laborers	Landless	Total

Crop Pattern:

S. No.	Name of the Block	Type of Crops	Area Cultivated in (Hect.)	Area under Crop insurance (Hect.)

Livelihood Details:

Name of the GP	Total house holds	Agriculture	Agricultural labour	Other labour	Fishing		Petty Business	Service holder	Other (specify)
					Sweet water	Saline			

Drinking Water Sources:

Name of the block	Tube well		Well	PHD Stand
	Functional	Defunct		

River & Creeks:

S. No.	Name of the river/creek	Name of the Place	Danger level

List of Embankment:

S. No.	Name of the Embankments	Type of Embankments	Length of Embankments

River Carrying Capacity:

S. No.	Gauge Station	Zero level in (Mts.)	Danger Level (in Mts.)

Availability of Irrigation Facility:

S. No.	Name of the Project	Area in Hectares

Minor Irrigation Projects:

S. No.	Particulars	Numbers

Irrigation Facilities and Sources:

Name of the Block	Ponds	Dug Wells	LI points	Drifts/ Shallow TW	River	Creeks	Canal

Infrastructure Facilities and Sources:

S. No.	Name of the Block	PDS Outlet	Post Offices	Police Station/	Pucca building	CHC	PHC	Dispensary	Cyclone shelter	Educational Institutions	Livestock	Cottage Industries	Industries

Industries:

Name of the Block	Name of the Industries	Government/ Private	Type of industry	Manpower employed	Infrastructure available	Investment	Production	Insured or not

Financial Institutions:

S. No.	Name of the Institution	Address	Telephone Number

Communication Facilities:

S. No.	Name of the Block	Telecommunication (Y/N)	No. of Boats		No. of Bus		No. of Trekker		No. of Tractor		No. of Jeeps		No. of Two Wheelers	
			G	P	G	P	G	P	G	P	G	P	G	P

G: Government: P: Private

Power stations and electric installation

Transport and Communications network

- VHF station. Telecommunication links/ IMD system/ other
- Road network- National Highways, State Highway, Major District Roads, Other District Roads, Forest Roads, Classified Village Roads, Panchayat Samiti Roads, Villages Roads, R.L.E.G.P. Road, and Urban Road. (in Kms.)
- Waterways
- Railways
- Internet facilities
- HAM amateur radio stations

****Any other detail to be included**

Hazard Inventory: Tools and Techniques

Duration: 30 minutes

Training Methodology: Power Point Presentation, Brainstorming, Discussion

Training Note: The trainer can initiate the discussion by explaining the concept of hazard and ask the participants to provide their inputs.

Hazard Inventory

It refers to prioritizing disasters based on its frequency and analysis of the estimated losses. This can be carried out by taking the help of elderly people of the particular State/ districts or by a more organized focused group discussion. The assessment can be on the losses that are incurred during various disasters and learn the best practices carried out by the respective communities. This is an important activity as it forms the basis for preparedness and mitigation plans.

The participants would be asked to review and analyze the occurrence of past disasters and hazards. Group discussions along with the elderly population, teachers and children can be held focusing on the disasters and hazards faced by the community for the past one year to past fifteen years, kind and nature of disasters and hazards faced, experience in the last hazard faced, warning issued, damage caused, response to the disaster, relief and rehabilitation process, traditional methods of coping of the community, gaps in management of the hazard, lessons learnt. It can be useful in understanding the nature, intensity and behavior of the past disasters and hazards.

The elderly population can share vital information and experience about the past while the presence of children in the group discussion would ensure that the experience is passed on to the next generation.

The participants may be asked to identify both natural as well as human made hazards. Natural hazards may include floods, drought, earthquake, cyclone, sandstorm, cloudburst etc. depending upon the location and human made hazards for the community may include industrial and chemical accidents, road and railway accidents, fire, epidemic, building collapse, communal violence etc. A seasonal calendar may be developed by the community on the basis of the frequency and time of the occurrence of the hazard.

Tools for hazard analysis

1. **Hazard Mapping:** It is a visual representation of the village by the community. It is a rough spatial overview and sketches of the area and specific locations which are vulnerable to various hazards or which has been hit by disasters in the past. The main feature of hazard mapping is to facilitate discussion on issues pertinent to hazards. Hazard mapping involves:
    - Visual representation
    - Rough spatial overview
    - Sketches of the area, specific locations vulnerable to various hazards
    - Hit by disasters in the past
    - Share experiences on large sheets



2. **Historical Profile or Timeline:** This tool is used to gather information about what happened in the past. It helps in getting an insight in past hazards, changes in their nature, intensity and behavior. It helps to understand the present situation in the community and establish the link between hazards and vulnerabilities. The community may also become aware of the changes that have taken place over the pasts through historical profile or timeline. It is a tool to:
    - Gather information about past
    - Helps get insight in past hazards
    - Helps find changes in the nature, intensity, behavior
    - Helps understand the present situation
    - Establish link between hazards and vulnerabilities
    - Story telling - identify capacity gaps

Trainer's Note: The trainer can keep the following points in mind while guiding the participants in conducting a historical profile of the village.

- Plan a group discussion and ensure that key informants like old people, leaders and teachers are present.
- Invite as many community members as possible, especially the young ones, for them to hear the history of the community.
- Ask the community members if they can recall major events like hazards and its effects, changes in land use, changes in land tenure etc.
- The facilitator can write stories on the blackboard or paper in a chronological order which depicts the history of the specified place.

3. **Seasonal Calendar:** It involves making a calendar showing different events primarily the time of occurrence of hazards throughout the annual cycle. It helps to identify the periods of stress and prepare for the specific stress in normal times before the threat of hazard looms large on the community. Few sample preparations are placed as examples. Participants are free to improvise upon making such maps with various permutations and combinations of hazards, specific livelihoods/ farming or disaster specific.

Months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
On farm livelihood activities												
Rice												
Wheat												
Potato												
Winter Crop												
Vegetables												
Hazard Event												
Flood												
Cyclone												
Drought												
Fire												
Hailstorm												
Thunderstorm												
Pest attack												
Disease Epidemics												

Type of Hazards	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flood												
Earthquake												
Landslide												
Drought												
Storm												
Fire accident												
River erosion												
Industrial hazard												
Bomb blast												
Road accident												

The seasonal calendar contains a lot of information about seasonal changes and related hazards, diseases and other information related to specific months of the year or they could have a year-round impact. It can be used to show weather patterns such as floods or droughts, cyclones, erosion etc and seasonal crops or other livelihood impacts during that specific disaster or multi-hazard disaster period. It can depict the time of occurrence of hazards throughout the annual cycle along with identifying the periods of stress and prepare for specific stress in normal times.

Trainer's Note: The trainer can explain the above chart which is ONLY depictional and guide the participants in chalking out a seasonal calendar for analysing hazards.

4. **Hazard Matrix:** This tool aims at gathering comprehensive information about the past hazards and prioritizing different hazards. It helps in having an insight about the future hazards on the basis of gaps and lacunae in the management of past hazards and disasters. The participants discuss what happened in the last disaster that hit the villages/district/state. Those who do not have any such experience of facing any disaster, may need to rely on the experiences of others.

Hazard Name	Hazard Identification	Vulnerability			Conclusion
	1. Could this hazard affect school? If "NO" go down to next hazard. If 'YES' complete #2-5	2. What is the likelihood of the event occurring at / or in the immediate vicinity of the School?	3. Could school property damage, or loss of use of school property result if this event occurred?	4. Could any person be killed or injured in this event occurred?	5. If you answered "YES" to question #3 or #4, this hazard is significant and must be addressed in your All Hazards Plan.
	[ ] Yes [ ] No	[ ] Low [ ] Moderate [ ] High	[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Yes [ ] No

Trainer's Note:

The trainer can focus on the following questions and collate the information gathered in the form a matrix.

Before the Disaster

a. Was warning communicated to everyone? If so how? If not why? When did it reach? What did each one do after the warning (individuals – families –community)?

b. What precautions were taken or otherwise?

c. What could individuals –families – community protect? What would they haveliked to protect?

During the Disaster

a. What was the experience? The weather (severity, duration of the disaster) - where was everyone and what did they do? Individuals -families - community.
b. Did anyone move to cyclone/flood shelters or safe houses or safe buildings after receiving the warning?

After the Disaster

a. What did everyone do after the disaster subsided?
b. How many deaths and how much damage to property and livelihood? Who faced maximum losses and why?
c. What kind of help was needed? Did help arrive on time?
d. What kind of difficulties were faced? Who had most difficulties? How were the problems solved/addressed?

The exercise gives everyone in the group an opportunity to know how each one fared during the specific disaster and how the villages/district/state emerged as a whole after the disaster and how the area emerged as a whole after the disaster. It also gives an idea of how prepared any community is to face a disaster.

Based on the findings of this exercise, the community will decide on the different ways through which the villages/district/state can be better prepared to respond to the next disaster threat and need based contingency plan can be drawn with priorities listed.

Vulnerability Analysis: Tools and Techniques

Duration: 30 minutes

Training Methodology: Power Point Presentation, Brainstorming, Discussion

Training Note: The trainer can initiate the discussion by explaining the concept of vulnerability and further collate information provided by the participants.

Vulnerability Analysis

The process of vulnerability analysis aims to highlight the weakness in the existing scenario of the village in terms of human beings as well as infrastructure. It involves asking the participants two major questions namely; who is vulnerable and what is vulnerable?

The participants would be asked to identify the more vulnerable population, identify the location of women (pregnant, lactating, widows, single), children, old aged, children, physically challenged, mentally challenged, those dependent on life support systems& medicines, poor people living by the sea or near danger or kutcha houses, livestock and cattle etc. The participants will also try and identify the vulnerable infrastructure like kutcha houses, low lying areas, areas near the water bodies such as the sea and river& direction of wind, livelihood assets such as boats & nets, documents, weak structures, drinking water resources, communication lines, roads, telephone lines etc.

Tools for Vulnerability Analysis

The various tools for vulnerability analysis are as follows:

1. **Transect Walk:** The process involves taking a systematic walk with key informants through the community to explore spatial differences, land use zones by observing, asking, listening, informal interviews and producing a rough sketch of the existing weaknesses in the village which would either lead to a disaster or prevent smooth response to a disaster.

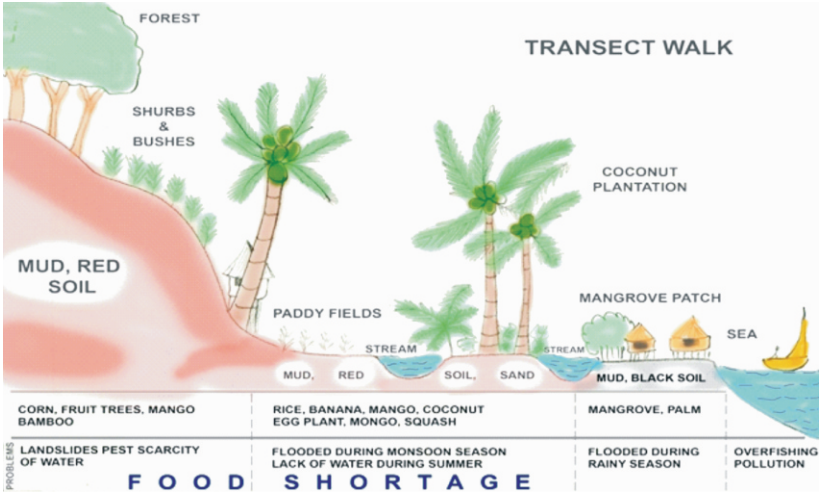


*Image recreated@NIDM

Trainer's Note: The trainer can ask the participants to keep the following points in mind while taking a transect walk of the area.

- Team with 6-10 community members representing the cross section of the area.

- Identify danger zones, vulnerable areas, evacuation sites, local resources used during emergency, human activities contributing to vulnerability etc.
- During a walk, take time for brief and informal interviews at different places in the transect.

2. **Problem Tree:** The tool involves drawing a tree which shows relationship between different aspects of vulnerability. It involves identifying major problems and vulnerabilities as well as root causes and their effects. The trunk represents the problems, the root depicts the causes while the leaves signify the effects.

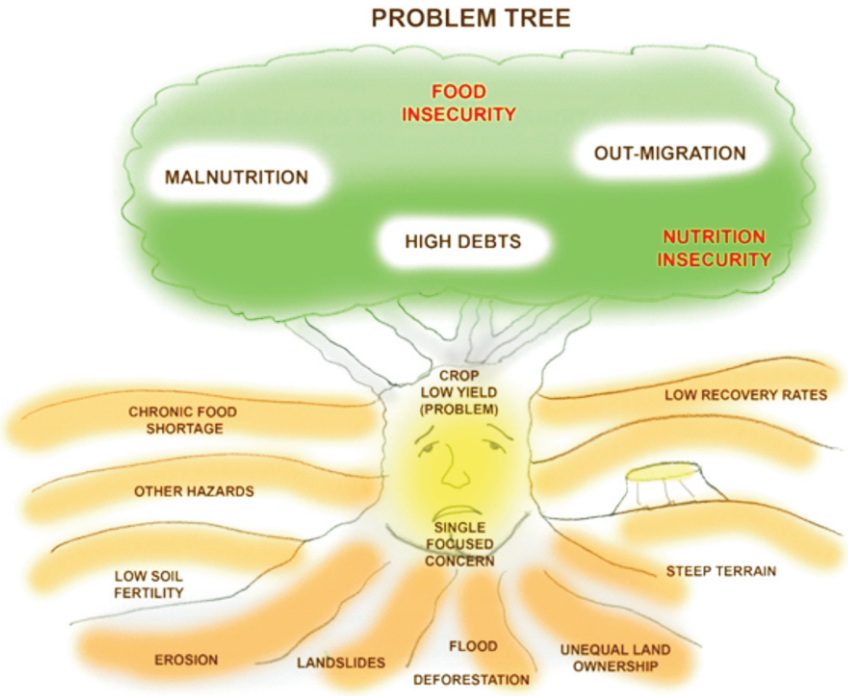


*Image recreated@NIDM

Trainer's Note: The trainer can demonstrate the usage of this tool by performing the following steps:

- Give the participants small pieces of paper and ask them to write one major problem on each card, and put these on the wall.

- Ask two/three volunteers to group the problems according to similarity or interrelationship.
- Make the problem tree with the trunk as problem, root as causes of the problem and leaves as the effect of the problem.
- Ask "But Why" to arrive at the root causes.
- To arrive at effects, ask for consequences of each problem.

3. **Livelihood Analysis:** The tool focuses on the studying the vulnerability of the livelihood of the community to various disasters. The tool analyzes the various livelihood activities that are spread over the year and the impact of hazards on the livelihood activities. It also focuses on understanding livelihood strategies, behaviour, decisions and perceptions of risk, capacities and vulnerabilities from different socioeconomic background.

Trainer's Note: The trainer can inform the participants to keep the following points in mind while conducting a livelihood analysis:

- Decide beforehand which households you will interview and how many you will interview.
- Before conducting the interview; introduce yourself and reason for the interview.
- Start with getting to know the household members, composition, age, gender followed by questions about livelihood and coping strategies.
- Discuss on how household cope in periods of stress.

4. **Vulnerability Assessment:** The vulnerability assessment would focus on the vulnerable community and the vulnerable infrastructure. It assesses the more vulnerable population and the assets of any State.

Trainer's Note: The trainer can sensitize the participants to observe the following steps:

- Ask two simple questions to the participants, who are more vulnerable and what is vulnerable?
- Make a list of the more vulnerable community and the vulnerable assets.
- You can use the following table to tap the weaknesses in the infrastructure of the State/ Districts/Villages which would either; lead to a disaster or pose as a hindrance in responding to a disaster.

Particulars	Location	Alternate Solution
Narrow Road		
Electricity transformer		
Chemical Godown		
Industry Plant		
Encroached Land		
Any Other		

Vulnerability mapping can also be used a tool for depicting the area of the villages in a State which are vulnerable to various hazards. This map can be made separately developed or clubbed with the hazard map.

Capacity/Resource Analysis: Tools and Techniques

Training Methodology: Power Point Presentation, Brainstorming, Discussion

Training Note: The trainer can initiate the discussion by explaining the concept of capacity and collate information provided by the participants.

Resource Analysis

Resource analysis focuses on identifying locally available assets and resources that can be utilized for building the capacities of the community during and after disasters. The local community has a lot of inbuilt strength and capacity for handling the disasters. It is important to capture the capacity and strength of the community in resource analysis for various districts, or even at block/ village levels. Apart from infrastructure and funds, it could be individuals with specific skills, local institutions and people's knowledge as all these have the capacity to create awareness and bring about changes in the community. Resource analysis is therefore not limited to a map depicting the available resources but also plotting of the distribution, access and its use by taking into consideration prevailing sensitiveness within the defined area for assessment. Thus, assessment of resources would involve two components:

a. Human Resource Assessment

b. Material Resource Assessment

The process would involve identifying safe houses and buildings for shelter, strong buildings, elevated uplands and structures, safe evacuation routes, health, medical &

sanitation facilities, swimmers, doctors, nurses, sources of funds to carry out preparedness activities, volunteers for task force etc.

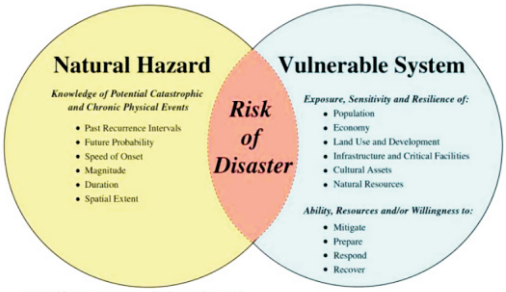
Tools for Resource Analysis

a. **Chapatti Diagram/Venn Diagrams:** Chapattis are round 'circles. These are used to find out the relationships, unions and intersections that exist in a society/community. The tool focuses on identifying various government, non-government and private organizations working in the field of disaster management in the local as well as neighboring area. Various other aspects can also be studied such as the role played by the institutions, their area of interest, their importance in the management of disasters, capabilities of such institutions and the perceptions people have about them.

The Venn diagrams or chapattis are used:

- To carry out institutional analysis that exists in a community.
- Carry both comparison and classification of resources available with different districts or at local levels.
- It categorizes and classifies information.
- It highlights similarities and differences on resources available with States/ Districts/ villages.
- Bring out the differences in power relations that exist.

While drawing chapatti/Venn diagrams a chapatti is given to each institution. The size of each chapatti should correspond to the importance of the institution; the more important the bigger the chapatti. Chapattis are placed near or far away from the community, institutions that interact with the community are placed near the community and those that do not closely interact with that community are placed far from the community. The institutions that work together will have their chapattis touching.



http://pubs.usgs.gov/fs/2011/3008/

Trainers Note: The trainer can keep the following points in mind while the participants prepare the diagram:

- Become familiar in advance with the names of the organizations/private vendors who have resources available with them.
- Ask the community about the extent of linkage between the various organizations and institutions.
- Draw circles to represent each organization or group; size of the circle would indicate the importance.
- Conduct focus group discussions on the history of the organizations, activities undertaken in the community, their performance, level of coordination, important organizations in the time of disasters.

b. **Resource Mapping:** The participants can be asked to locate and depict the various kinds of resources on the map of the village. The resources can include roads, pucca households, health units, religious places, water points, schools, clubs and other such resources highlighted in the following resource matrix.

c. **Resource Matrix:** In this tool general information about the material as well as human resources is collected and presented in the form a matrix. The following matrix can be used as a sample for collecting information about resources available in the village.

Community Resources			
Particulars	Total No	Contact person and Telephone Number	Distance from the village
Hospitals			
Public health Centre			
Dispensaries			
Veterinary Hospital			
Private Hospital			
OPD Facility			
X Ray facility			
Ambulance Service			
Medicine Shops			
General Resources			
Nearest Police Station			
Nearest Fire Station			

General Resources			
Particulars	Total No	Contact person and Telephone Number	Distance from the village
Petrol Pumps			
CNG Depot			
Cremation Site			
Power Sub Station			
Water Pumping station			
Overhead water Tanks			
Underground Water Tanks			
Tube Wells			
Communication and Transportation			
Nearest Telephone Exchange			
Nearest Ham radio Station			
Nearest Railway Station			
Pucca Roads			
Kutcha Roads			
Search and Rescue Equipment			
Crane			
Bulldozer			
Gas Cutter			
Tree Cutter			
RCC Cutter			
Dumper			
Loader			
Rope			
Chain			
Heavy Hammer			
CrowBar			
Hand Saw			
Heavy Axe			
Heavy jack			
Shovels			
Short Ladder			
Generator			
Tarpaulin			
Lamps &Torches			
Open spaces/Community Centers/Schools			
Parks			
Play Grounds			
Sports Complex			
Community hall			

Open spaces/Community Centers/Schools			
Particulars	Total No	Contact person and Telephone Number	Distance from the village
Colleges			
Schools			
Skilled Human Power			
Doctors			
Veterinary Doctor			
ANM			
Paramedical Staff			
Trained Midwives			
Nurses			
Carpenters			
Masons			
Mechanics			
Others			

Resource Type	Details	Number	Government/ Private	Contacts/Owner's name with Telephone No.
Transport and communication	Tractor			
	Trekker			
	Trolley, Rickshaw			
	Four-wheeler			
	Boats			
	Telephone			
	Any other			
Containers	Tankers			
	Overhead tanks			
	Jerry canes			
	Big vessels			
Cleaning and Cutting Equipment	Kodi			
	Kudala			
	Sabala			
	Big saw			
Other Resources	Gen set			
	Pump set			
	Petromax			
	Tent house			
	Gas light			
	Solar Light			
	Biogas			
Temporary Shelter	Tents			
	Tarpaulins/ Polyethene			
	Bamboo			

Emergency Contingency Plan (State/ District-wise)

1	2	3	4	5	6	7	8	9	10	11	12	13
S. No	Name of the Block	No. of Population as per 2001 Census	Present Population (Col. 3+20%)	Amount of food Materials (in KG) Per*						Medicine per week		
				Chuda(@) 200 gms/ Head	Gur @ 50 gms/ Head	Rice (@250 gms/ Head)	Dal (@25 gms/Head)	Salt(10 gms/Head)	K. Olil (50ml /head)	ORS in Packet/Head	Halogen Tabs. (7tabs/Head)	Bleaching powder in KG (50 Gms/ Head)
1												
2												

* Other items to be included as decided by the State/District

Storage facilities with capacity

S.No.	Type of storage structure	Location	Capacity	Contact Person	(Address and Phone no.)	Remarks

Public Distribution System

Name of the Block	No. of PDS retailer counters	Name of the retailers	Contact person and address	Telephone Office/ Res.	Location	Area Coverage / No. of Cards	Remarks

PHC/ PHC New

PHC/PHC New	Name of the G.P. (Location)	Staff Available

Police Station

PHC/PHC New	Name of the G.P. (Location)	Staff Available

Sub Post Offices:-

Name of the Block	Location	No. of Staff Available

Fire Station Information:

S.No.	Name of the fire station	Telephone Number	Disposition of Vehicle & Pumps	Disposition of Man Power
1.			➢	

Identification of Cyclone/ floods shelters (single /Double storied) with capacity:

S.No.	Type of shelter	Capacity (Room and Plinth Area)	Location	Contact person (Address and phone no.)	Facilities Available	Remarks (Single or Double)

Earth moving and Road cleaning equipment's:

Type of Equipment	Contact Person and address	Telephone Offices/ Res.	Remarks

Traders:

Type of Traders	Contact person and address	Telephone Office/ Res.	Remarks
House building materials			
Groceries			
Medicine shop			
Tents Tarpaulins			
Hardware shop			
Rice mill			
Fuel wood			
Electrical Equipment's			
Restaurants			
Farm Inputs			

Transport (Road and water)

Type of Vehicles	Contact person and address	Government/ Private	Telephone Office/ Resi.	Remarks
Tractors				
Bus				
Truck/Mini truck				
Trekker				
Country boats				
Motor boats				

Alternative energy sources (Bio gas and Solar Energy Cells)

Type of sources	Contact person and Address	Phone No.	Remarks
Bio Gas			
Generator			
Pump sets			
Solar Energy Cell			

Private Professionals:

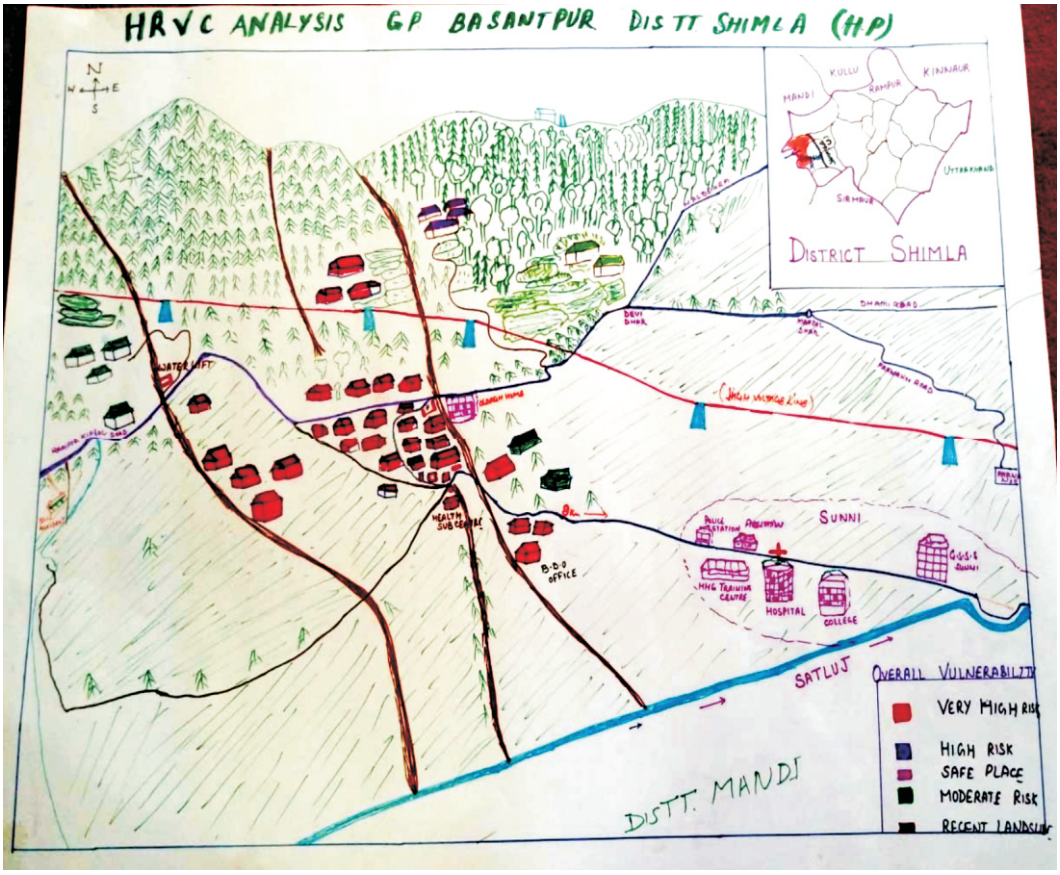
Expertise	Name	Specially	Address	Phone nos.	Service facilities available
Doctor					
Health Practitioner					
Es-service man					
Mechanical /civil engineer					
VAS					
Volunteer trained in Rescue operation					
Volunteers trained in operating special equipment's					
Volunteers trained in first aid					
Skilled Mechanics					
Drivers (Road)					
Motor Boat Drivers					

NGO's

Name of NGOs and CBOs	Area of Operation	Sector	No. of Volunteers	Other Resources	Contact Address

Volunteers Profile:

S.No.	Name of the Block	Name of the NGO/CBO	Name the Volunteers	No. of Volunteers Trained				
				Rescue	First Aid	Ham Radio	Relief and Co-ordination	Damage Assessment



Trainers' Note: While describing the methodology for conducting State level HRVC analysis, participants can be encouraged to include:

a. Key Informant Interviews (With Director-DM, Secretary-Revenue, Chairperson SEC and other relevant stakeholders)

b. Review of Literature (Latest Census data, Economic Survey Reports, NFHS data, other data from studies/surveys conducted by Department(s) of Health and Family Welfare, Women and Child Development, Social Justice & Empowerment and so on), Review of Research Studies from Universities on social and technical dimensions of DRR/DRM in the State), Review of Memorandum of Losses etc.

Risk Analysis

Duration: 30 minutes

Training Methodology: Power Point Presentation, Brainstorming, Discussion

Training Note: The trainer can initiate the discussion by explaining the concept of risk and collate the information provided by the participants.

Risk Analysis

Risk is a measure of the expected losses due to a hazard event of a particular magnitude occurring in a given area over a specific time period. The tool is based on determining the risk by analyzing the vulnerabilities and capacities of the community related to each hazard. On the basis of analysis, the risk is determined for a particular hazard in a ranking order. Further, A very common use of GIS in risk assessment is in the preparation of hazard maps. Hazard maps could be created to show earthquake hazard, landslide hazard, flood hazard or fire hazard. These maps could be created for cities, districts or even for the entire country. GIS is an acronym for geographic information system. It's a specific type of mapping technology that allows you to layer data tied to geographic points. Rather than seeing just a few key features on a static map, GIS mapping allows you to view customizable combinations of data layers in a dynamic tool. A Geographic Information System (GIS) is software that blends the power of a map with the power of a database to allow people to create, manage and analyze information, particularly information about location. GIS can be used to provide general familiarization with the study area, giving the planner a reference to the overall hazard situation and helping to identify areas that need further studies to assess the effect of natural hazards on natural resource management and development potential etc.

Trainer's Note: The trainer can keep the following points in mind while conducting the risk analysis

- Determine the risk by ranking.
- Ask the participants about the hazard which poses the highest risk.
- Explore the reasons due to which a particular hazard poses the risk.
- Consider the vulnerability as well as capacity analysis.

Description	Simulation Scenario
Insignificant Risk	No fatalities, Minimal medical support required. Small number of populations is displaced- temporarily for a short duration. Minimal damage to assets. Community functioning is not disrupted much. Not much visible impact on environment. Financial minimal losses accounted.
Minor	Small number of fatalities noticed. Medical support and hospitalization required. Temporary short displacement of affected population. Significant damaged noticed and community functioning is disrupted. Serious damage to environment but may not have long-term effects. Significant financial loss.
Moderate	Multiple fatalities observed. Numerous injuries and require intense medical attention. Significant number of people displaced for short period. Serious damages noticed which require external assistance. Community functions with difficulty. Severe impact on environment with long-term effects. Serious financial loss.
Major	Numerous fatalities found. Extensive injuries with significant medical help and hospitalization requirements. Large number of displacements seen for a significant duration. Severe damage seen which require external resources. Community functions only partially. Severe permanent damage noticed to environment. Severe financial losses incurred.
Catastrophe	Mass fatalities. Large number of affected populations requires hospitalization. General and widespread displacement seen for extended duration. Widespread extensive damage noticed. Community is unable to function without external support. Widespread severe damage to environment. Immense financial loss accounted.

S. No	Type of hazard	Year of Occurrence	Area affected	Name of Localities	Impacts on Life, Economy and Environment						
					People Killed	People Injured	Homeless/ survivors	Livestock loss	Buildings Damaged	Infrastructure Damaged	Economic Losses (Rs.)

RISK ASSESSMENT - HVCR ANALYSIS - STEPS

1. Type of hazards in the District
2. History of events in the District
3. Seasonality of hazard
4. Vulnerability to hazards
5. Coping Capacity (infrastructure, critical facilities, awareness, resources etc.)
6. Risk Classification and Prioritization

History of Hazards

Seasonality

S. no	Type of Flood	Month of the Year											
		J	F	M	A	M	J	J	A	S	O	N	D

Vulnerability

Elements at Risk	Hazard type				
Population					
Livestock					
Agriculture					
Buildings					
Infrastructure					
Activities					
Environment /Natural Resources					
Any other					

Coping Capacity Assessment (give appropriate scores 0-10)

- Existence of DM System
- Establishment of EOC
- SDMA/ DDMA
- SDMC/DDMC (SDMP&DDMPs developed)
- Availability of Physical, Financial and Human Resources
- Networking, Linkage and Coordination
- Aware, Informed and Prepared Community

Risk Classification and Prioritizations

- Hazard Frequency, Magnitude, Severity of Impacts

HAZARD RISK ASSESSMENT MATRIX

PROBABILITY FREQUENCY OF OCCURRENCE	SEVERITY				
		4 CATASTROPHIC	3 CRITICAL	2 MARGINAL	1 NEGLIGIBLE
	5 FREQUENT				
	4 PROBABLE				
	3 OCCASIONAL				
	2 RARE				
	1 IMPROBABLE				

Priority

S.No.	Type of Hazard	Score
1		
2		
3		

An extensive hazard, vulnerability, resource and risk analysis would form the basis for development of any State/ District/ Village disaster management plan.

NOTE: Risk, Hazard and Vulnerability Assessments must be reviewed at least once every year for new risks and changing conditions—such as new construction—in the area, enrollment of new students/staff etc. also, make a copy of the completed Risk and Hazard Vulnerability Assessment and if required incorporate the findings in the SDMPs. Also, inclusion of process and tools for State level HRVC evaluation / assessment can be included in the session or get inputs via the group activity. Also, status of State and Centrally sponsored Schemes on various aspects of DRR may also be reflected under HRVC analysis.

GROUP WORK (120 minutes)

Training Methodology: Field/ Simulation based & Discussion

The Trainer may ensure that a group exercise must follow the HRVC session so as to ensure that the participants get a better retention of the various tools for collecting information on HRVC aspects. This can be done by forming 4-5 small groups of the entire batch (depending upon the strength of the training batch) and either make them visit nearby area or the training campus itself can be asked to be assessed for the above aspects. Each group can be asked to make presentations of the same.

Reading References:

Basic Concepts- Self Study Programme- NIDM Website (available at www.nidm.gov.in) Standard Operating Procedure for responding to Natural disasters 2010 (http://ndmindia.nic.in/SOP-NDM-2010.pdf)

National Policy on Disaster Management 2009 http://www.ndma.gov.in/images/guidelines/national-dm-policy2009.pdf

National Plan on Disaster Management, India. 2019http://ndma.gov.in/images/policyplan/dmplan/National%20Disaster%20Management%20Plan%20May%202016.pdf

A Study on Mainstreaming DRR and CCA in Development Planning by The Disaster Management Division, Ministry of Home Affairs, Government of India and The United Nations Development Programme https://www.ndmindia.nic.in/images/pdf/Mainstreaming%20Report_Final_sept7.pdf

Hazards, Disasters and Your Community; A primer for Parliamentarians, Government of India

Ministry of Home Affairs: National Disaster Management Division
https://www.ndmindia.nic.in/images/public-awareness/Primer%20for%20Parliamentarians.pdf

DISASTER MANAGEMENT IN INDIA: Government of India. Ministry of Home Affairs; National Disaster Management Division/MHA/GOI/28/06/2004
https://meghomeguards.gov.in/sites/default/files/disaster-management.pdf

Asian Disaster Preparedness Centre (2000), Training module on Community Based Disaster Preparedness, Bangkok, Thailand

Training Trainers for Development, conducting a Workshop on Participatory Training techniques, The CEDPA Training Manual Series, 1995, The Centre for Development and Population Activities, Washington Download at: http://www.cedpa.org

SUB MODULE 2

Preparation of State Disaster Management Plan

Learning Objectives

At the end of the session, participants should be able to:

- Explain the genesis of disaster management and its current Institutional set-up in the country.
- Understand the constitutional mandate and salient provisions of DM Act 2005.
- Explain the need and importance of preparing disaster management at the State level.
- Discuss the key responsibilities of various stakeholders in developing State Disaster Management Plans.

Duration: (10.00 a.m-17.00 p.m: excluding time for Lunch and Tea Breaks)

Equipment and Materials Needed:

Flip Charts, Markers, Pens, Sticky notes, Laptop, LCD/Projector, Chart papers, and Blackboard.

USEFUL HANDOUTS: 6,7 & 8

Method(s):

- Interactive lecture presentation
- Questions and Answers
- Group Work/ Exercise
- Discussion & Use of Audio-Video Aids

Session Plan

The trainer/ facilitator can start the session with a recapitulation of the previous days learning's. This can be done in various creative ways such as posing questions (can be quiz format/ general), asking participants to present it in their own ways, showing various pictures, videos and then reiterating the contents etc. There can be an informal interaction about the contents of Sub Module 2 to know their understanding

about evacuation plans, preparation of disaster management plans and related aspects. Invite them to share their views and make a note of the points either on a flip chart or white board. Then make a brief presentation explaining the need for having disaster management plans (National, State/ District/ Village level etc.). Gradually, move towards the framework of a disaster management plan and its components. Follow it up with an open house discussion inviting comments and questions, observations. Trainers' may divide the timings for the various sessions as per their convenience (flexi-mode).

Wrapping up the discussion: Form 4-5 working groups of participants (depending upon the size of the batch) and group work based on the sub sessions may be given for better brainstorming. Ask the working groups to share their findings and analysis in a presentation format. This also encourages a two-way learning and makes the sessions more interesting and interactive. Give 5 minutes at the end for some questions and answers or scope for discussion on each presentation. Close the session with a presentation summing up the key learning from the session and highlighting the points from Sub Module 2.

Context

It is convincingly believed that India is one of the most disasters prone countries in the world, and therefore, management of disasters have been quite a complex and comprehensive activity. Though the roots of present-day disaster management in India may be traced back to colonial period, the nature and scale of managing disasters in current times is an outcome of the global and domestic push over the last two decades. Further, greater involvement of civil society organizations in management of disasters along with the rise of certain issues and challenges during the course of disaster management (such as law and order, corruption, discrimination in disaster relief etc.) are also prominent aspects that merit critical analysis by way of studying disaster management in India. In contemporary times, effective management of disasters has become a global movement given the massive loss of lives and property entailed by the catastrophic events. As a result, almost all the countries in general, and most disaster-prone countries, like India in particular, have evolved a comprehensive framework of disaster management consisting of legal framework, policy perspective, and implementation machinery along with ancillary support systems. This therefore, advocates and encourages inculcating a culture of safety and resilience across all communities.

The aim of developing any State DM plan is to ensure that the following components of disaster risk reduction and management are addressed to facilitate planning, preparedness, operational, coordination, stakeholder and eventually community participation. The State Disaster Management Plan (SDMP) aims to ensuring that each State is better prepared to face impending hazards and loss from the subsequent disasters are also minimized and encourage resilience building.

Flowing from the National vision and the aforementioned approach, the objectives guiding the policy formulation are:

- Promoting a culture of prevention and preparedness by ensuring that DM receives the highest priority at all levels.
- Ensuring that community is the most important stakeholder in the DM process.
- Encouraging mitigation measures based on state-of-the-art technology and environmental sustainability.
- Mainstreaming DM concerns into the developmental planning process. Putting in place a streamlined and institutional techno-legal framework for the creation of an enabling regulatory environment and a compliance regime.
- Developing contemporary forecasting and early warning systems backed by responsive and fail-safe communications and Information Technology (IT) support. Promoting a productive partnership with the media to create awareness and contributing towards capacity development.
- Ensuring efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society.
- Undertaking reconstruction as an opportunity to build disaster resilient structures and habitat.
- Undertaking recovery to bring back the community to a better and safer level than the pre-disaster stage.

2.1: The Disaster Management Act 2005- paradigm shift

Duration: 30 minutes

Training Methodology: Power Point Presentation, Discussion

Training Note: The trainer/facilitator may like to show some video, encourage participants to share their field experiences or put up some concern/observation related to the particular sub session or in general about rural sector before the start of

the session so as to break the monotony. Trainer can also indulge the group into some playful ice-breaking activities as short breaks during the course.

Technical Notes

Evolution of Disaster Management

India did not have an official policy on disaster management though Governments' role in mitigation measures finds its mention even in the Pre-independence era. Various public policies in India were designed to prevent and mitigate large scale disasters due to natural calamities. For example, India developed a comprehensive food security system which prevented famine after successive droughts, which used to take a toll of millions during the British rule. India adopted integrated poverty reduction strategies since the seventies which enhanced the capability of the poor people to cope with disasters and also promoted micro credit through self-groups, mostly of women, which enhanced resilience of communities.

Despite all these, the attitude towards disaster management approach was marked by fatalism- 'wrath of nature' or 'Anger of God' and Government interventions were limited to relief and rehabilitation assistance.

United Nations General Assembly declared the decade of 1990s as the 'International Decade for Natural Disaster Reduction'. This was also the time when a series of mega disasters such as Latur Earthquake 1993, Orissa Super Cyclone 1999, Gujarat Earthquake 2001, Indian Ocean Tsunami 2004, Jammu & Kashmir Earthquake-2005 etc. had exposed some major flaws in the Indian Disaster Management System. There was a lack of scientific hazard-risk-vulnerability mapping and inadequate early warning system. Since focus was mostly on primitive search and rescue with insufficient relief management, area of community awareness and preparedness initiatives were neglected. New development projects were triggering new disasters and hence, all this corroborated the need for revamping the whole system of disaster management. Thus, In August 1999, a High-Powered Committee (HPC) was constituted to review the existing arrangements for preparedness and mitigation of natural disasters.

HPC was chaired by Secretary, Ministry of Agriculture and was mandated to recommend the measures for strengthening organizational structures at the national, state and district levels. HPC was also to formulate a model plan for natural as well as manmade disasters for drawing up a systematic, comprehensive and holistic approach towards disasters. In 2002, the disaster management division of Ministry of Agriculture was shifted to Ministry of Home Affairs and a hierarchical structure evolved for

disaster management at the national, state and district levels. Even, the Eleventh Five Year Plan (2007-2012) outlined a multi-pronged strategy for total risk management for sustainable development and the States were advised to have Plan Schemes for Disaster Management which resulted in the development of a National Roadmap on Disaster Management and the enactment of DM Act.

State Disaster Management Authority (SDMA)

At the State level, the SDMA, headed by the Chief Minister, will lay down policies and plans for DM in the State. It will, inter alia approve the State Plan in accordance with the guidelines laid down by the NDMA, coordinate the implementation of the State disaster management Plan, recommend provision of funds for mitigation and preparedness measures and reviews the developmental plans of the different Departments of the State to ensure the integration of prevention, preparedness and mitigation measures. As per the CAG report, Gujarat had constituted (September 2003) its SDMA under their State Act of 2003 and Daman & Diu constituted SDMA (March 2005) prior to enactment of DM Act 2005. The remaining 33 states and UTs constituted their SDMAs between February 2006 and December 2010 as per the provisions of the National Act.

State Plans for Disaster Management

Section 23 of the DM Act provides that there should be a disaster management plan for every state. It also directs the departments of the State Governments to draw up their own plans in accordance with the state plan. The plan preparation process essentially aimed at strengthening the communities, elected local bodies and state administration's preparedness and response. The State plans are to be prepared by the State Executive Committees (SECs) in conformity with the guidelines to be issued on related matters by SDMA. The State plans prepared by SECs were to be approved by the respective SDMAs. Details of State Disaster Management Plans (SDMPs) with respective links are provided at the end of sub-module 3 for reading reference. Details of District and UT DMPs are provided in handout 10.

Major Provisions of the DM Act, 2005

- National Disaster Management Authority to be the apex body at national level for formulating disaster management policy and its monitoring (Article 3 of Act).
- Prime Minister to be the Chairman of NDMA (Article 3(2) (a)of Act)
- National Plan to be prepared by National Executive Committee and approved by NDMA (Article 10(2) (b) of Act)
- National Policy for Disaster Management to be prepared by NDMA (Article 6(2)(a)of Act)
- State Disaster Management Authorities to be established (Article 14 of Act)
- State Governments and Central Ministries to prepare their Disaster Management Plans (Article 23 & 37(1)(a) of Act)
- Central Government to institute a National Disaster Relief fund and National Disaster Mitigation fund (Article 46(2) & 47(1) of Act)
- To establish a dedicated force called National Disaster Response force (Article 44 of Act)

Table: Concerned Ministries for Specific Disasters

Drought	Ministry of Agriculture
Epidemics & Biological Disasters	Ministry of Health and Family Welfare
Chemical Disasters	Ministry of Environment, Forests & Climate change
Nuclear Disasters	Ministry of Atomic Energy
Air Accidents	Ministry of Civil Aviation
Railway Accidents	Ministry of Railways
Natural Hazards	Ministry of Home Affairs

GROUP WORK (60 minutes)

Training Methodology: Discussion & Brainstorming

Trainer can divide the batch into 4-6 groups and distribute copies of the DM Act 2005 and ask them to deliberate and discuss amongst their respective groups about the strengths and gaps in the Act along with the major provisions in the Act. Each group can be asked to make presentations of the same.

Session 2.2: National Vision

Duration: 15 minutes

Training Methodology: Power Point Presentation, Discussion

Training Note: The trainer/ facilitator may like to show some video, encourage participants to share their field experiences or put up some concern/ observation related to the particular sub session or in general about developing sectoral/ departmental plans before the start of the session so as to break the monotony. Trainer can also indulge the group into some playful ice-breaking activities as short breaks during the course.

Technical Notes

India supports disaster management capacity building efforts in the Asia Pacific region. The country's role throughout the region as an increasingly capable actor in disaster relief and humanitarian assistance has reinforced India's role promoting connective partnerships throughout the region. Due to location and climate, India itself is one of the most disaster-prone areas of the world. The country is exposed to many natural hazards including floods, cyclones, droughts, and earthquakes and these disasters often cause significant damage to property and loss of life.

The Government of India recognizes the need to shift from a post disaster reactive approach to a pre-disaster pro-active approach which includes preparedness, mitigation, and prevention. The Government of India enacted the Disaster Management Act in 2005, adopted a National Policy on Disaster Management in 2009, and in 2015 adopted three international agreements including the Sendai Framework for Disaster Risk Reduction, Sustainable Development Goals 2015-2030, and the Paris Agreement on Climate Change. The country has adopted a multi-hazard, and multi-sectoral strategy approach, which in turn will create a disaster resilient country. India has membership in a variety of international organizations, including the United Nations (UN), G-20, Association of Southeast Asian Nations (ASEAN) Regional Forum (ARF), International Monetary Fund (IMF), World Bank (WB), and World Trade Organization (WTO). India is an ASEAN dialogue partner, an Organization for Economic Cooperation and Development (OECD) partner under its Enhanced Engagement Program, and an observer to the Organization of American States (OAS). India is also a member of the Indian Ocean Rim Association (IORA). India fosters bilateral and multilateral relationships with ASEAN member states and the U.S. and Australia which include Defense Cooperation, economic trade agreements, disaster response and

assistance and maritime and border agreements. Along with Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, Pakistan, and Sri Lanka, India is a member of the South Asian Association for Regional Cooperation (SAARC). Through its efforts at regional cooperation, India has increased its bilateral trade and investments with its SAARC neighbors. The U.S. is also one of India's most significant trading and foreign investment partners in the world. India's Ministry of Home Affairs has overall responsibility for disaster management along with India's National Disaster Management Authority (NDMA). Components of the national disaster management structure include the National Executive Committee (NEC), which assist the NDMA with overseeing national disaster management activities; the Central Government which maintains the authority to issue guidelines to NEC, and State Governments and State Emergency Committees (SECs) to enable or aid in disaster management. All central ministries are involved in DM post disaster recovery activities. The State Governments are responsible for the primary function of coordinating disaster management activities to include the proper establishment of early warning systems (EWS). The Armed Forces are a significant component of India's disaster management structure and are mandated to assist the civil administration only when the circumstances of the disaster are beyond the State's coping capacity and when requested by the Civil Administration. Additionally, the Central Paramilitary Forces (CPMFs), the State Police Forces and Fire Services, Civil Defense and Home Guards and the State Disaster Response Force (SDRF) play a role in disaster response. India is currently home to over 50 international organizations focused on disaster management, humanitarian needs, international development, human rights, women and children's rights and protections, HIV/AIDS reduction and education, sanitation, food security, sustainable development and health. India has provided monetary and resource aid to regional nations in the aftermath of a catastrophic disasters. Aid has been rendered to the Philippines (2012 Typhoon Pablo, 2013 Earthquake, 2017 Terrorist attacks in Marawai), Maldives (2004 Tsunami), Myanmar (Cyclone Mora 2017, Komen 2015, Cyclone Nargis 2008, and earthquake in Shan State 2010), Sri Lanka (2004 Tsunami) and to Nepal (2015) Earthquake), etc.

India is a member of the South Asian Association for Regional Cooperation (SAARC). The SAARC was established on 8 December 1985, with the signing of the Charter in Dhaka. SAARC is comprised of eight Member States: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. The SAARC's objectives are to:

- Promote the welfare of the people of South Asia as well as improve their quality of life;

- Accelerate economic growth, social progress, and cultural development in the region and to provide all individuals the opportunity to live in dignity and to realize their full potentials;
- To promote and strengthen collective self-reliance among the countries of South Asia;
- To contribute to mutual trust, understanding and appreciation of one another's problems;
- Promoting active collaboration and mutual assistance in the economic, social, cultural, technical and scientific fields;
- Strengthening cooperation with other developing countries, strengthen cooperation among themselves in international forums on matters of common interests; and
- To cooperate with international and regional organizations with similar aims and purposes.

2.3 The State Plan: Key Responsibilities of Agencies

Duration: 30 minutes

Training Methodology: Power Point Presentation, Discussion

Technical Notes

The State Disaster Management Plan (SDMP) should be a document with a dynamic approach by ensuring its periodic review and updation and keeping up with the global best practices and knowledge base in disaster management. It is in accordance with the provisions of the Disaster Management Act 2005, the guidance given in the National Policy on Disaster Management 2009 (NPDM), and the established national practices. The State Governments must shift their focus from reactive response measures to proactive preparedness and preventive mechanisms taking all the stakeholders into account with a view to generating synergy, prevent conflict, optimize use of resources.

Legal Mandate

Section 23 of the DM Act 2005 mandates that there shall be State National Disaster Management Plans (SDMP) for each State of India. The proposed SDMP must comply with the National Policy on Disaster Management (NPDM) of 2009 and conforms to the provisions of the DM Act making it mandatory for the State Governments to have

adequate DM plans. The State Plan shall be prepared by the State Executive Committee having regard to the guidelines laid down by the National Authority and after such consultation with local authorities, district authorities and the people's representatives as the State Executive Committee may deem fit.

In the present context, all SDMPs must be consistent with the approaches promoted globally by the United Nations, in particular the Sendai Framework for Disaster Risk Reduction 2015-2030. It is a non-binding agreement, which the signatory nations will attempt to comply with on a voluntary basis. India will make all efforts to contribute to the realization of the global targets by improving the entire disaster management cycle in India by following the recommendations in the Sendai Framework and by adopting globally accepted best practices. The four priorities for action under the Sendai Framework are:

1. Understanding disaster risk.
2. Strengthening disaster risk governance to manage disaster risk.
3. Investing in disaster risk reduction for resilience.
4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction.

Integrating Sendai Framework into SDMPs

The SDMPs must incorporate substantively the approach enunciated in the Sendai Framework and will help the country to meet the goals set in the framework. By 2030, the Sendai Framework aims to achieve substantial reduction of disaster risk and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries. The SDMP framework states that to realize this outcome, it is necessary to prevent new and reduce existing disaster risk through the implementation of integrated and inclusive measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience by each State. These measures must cover various sectors such as economic, structural, legal, social, health, cultural, educational, environmental, technological, political, and institutional. The plan must include measures that will be implemented over the short, medium, and long-term more or less over the time horizon of the Sendai Framework ending in 2030.

The Role of the State Government as envisaged in the Plan are:

- Building & Capacity Development of the Institutions involved; Training of

department officials from the State Headquarters and districts, members from the community and other stakeholders through a participatory approach in disaster management.

- Planning, Monitoring and Evaluation.
- Knowledge Networking and transfer, spread and adoption of improved and appropriate technology for disaster prevention, response and recovery.
- Review, modification and adoption of appropriate laws, rules, codes and other measures to improve disaster management at all levels.
- Arranging resources from Central Government and sharing resources with neighboring states and other states in need.
- Incorporating disaster management aspects in normal developmental activities
- Financial Matters relating to disaster risk management.
- Building of Inventories.
- Initiating Community Awareness Programme; generating awareness through media and other IEC strategies and workshops for students, teachers and other stakeholders.
- Effective early warning systems and its disseminations, GIS, Remote sensing, Control Room.
- Documentation.

The key responsibilities of DM and emergency response system departments/agencies of the State government could be envisaged as:

- **Planning:** development of strategies and requirement analysis for resource utilization. The establishment of structures, development of systems and testing and evaluation by organizations of their capacity to perform as per allotted roles.
- **Coordinated Execution of Plans:** Increased coordination, convergence and synergy among the departments and institutions should be promoted in order to promote sharing of resources, perspectives, information and expertise through support of training centers, academic and applied research, education and awareness generation programme, etc.
- **Mainstreaming DM Concerns into Development Programmes:** This deals with integration of measures for prevention of disasters and mitigation into developmental plans and projects including mitigation projects and to facilitate provision of adequate funds for DM. Plans may be shown in three broad categories, viz. short, medium and long term. The structural and non-structural measures to be taken may be brought out in each category.

2.4 Guiding Principles for preparation of State Plans

Duration: 30 minutes

Training Methodology: Power Point Presentation, Discussion

Technical Notes

Participatory Approach

The plan preparation process essentially aims at strengthening the communities, elected local bodies and state administration's response and preparedness. The plans should be prepared through a participatory approach including identification of vulnerabilities and risks, and also be holistic, inclusive, sustainable and environment friendly. The plans should be sensitive to the special needs of vulnerable sections such as pregnant and lactating mothers, children, and the elderly and physically and mentally challenged persons. The concerns of women and other vulnerable groups may be specifically addressed.

Community Based DM

During any disaster, communities are always the first responders. Community participation ensures local ownership, addresses local needs, and promotes volunteerism and mutual help to prevent and minimize damage. Therefore, states should make all efforts to assist communities in understanding their vulnerabilities and the lead role that they can play in managing risks with less dependence on external entities, through robust campaigns. Also, arrangements for community-based disaster preparedness should form the basis for preparation of plans.

Guiding Principles—Themes

Underpinning the Plans

- The vulnerability of different parts of the state to different kinds of disasters.
- The measures to be adopted for prevention and mitigation of disasters.
- The manner in which mitigation measures shall be integrated with development plans and projects.
- The capacity building and preparedness measures to be taken.
- The roles and responsibilities of each department of the government of the state in relation to the measures specified above.

The State Plan prepared by the State Executive Committee shall be approved by the State Authorities. The State Plan shall be reviewed and updated annually. Appropriate provisions shall be made by the State Government for financing for the measures to be carried out under the State Plan. Copies of the State Plan shall be made available to the Departments of the Government of the State and such Departments shall draw up their own plans in accordance with the State Plan.

Reading References:

National Disaster Management Plan 2019; National Disaster Management Authority, Ministry of Home Affairs, Government of Indiahttps://ndma.gov.in/sites/default/files/PDF/ndmp-2019.pdf

Disaster Management in India - A report by Ministry of Home Affairs; 09 September 2011

https://www.indiawaterportal.org/articles/disaster-management-india-report-ministry-home-affairs

India: Disaster Management Reference Handbook; Center for Excellence in Disaster Management & Humanitarian Assistance; August 2018https://www.cfe-dmha.org

Standard Operating Procedure for responding to Natural disasters 2010 (http://ndmindia.nic.in/SOP-NDM-2010.pdf)

SUB MODULE 3

Disaster Risk Reduction and Management: Inclusive Approach

Learning Objectives

At the end of the session, participants should be able to:

- Engage in understanding the Framework of State Disaster Management Plans.
- Explain the various vulnerable groups which require additional support in disaster management.
- Explain the importance of integrating cross-cutting concerns in the preparation of disaster management plans at the State level.
- Discuss the Disaster Management Template.

Duration: (10.00 a.m-17.00 p.m: excluding time for Lunch and Tea Breaks)

Equipment and Materials Needed:

Flip Charts, Markers, Pens, Sticky notes, Laptop, LCD/Projector, Chart papers, and Blackboard

USEFUL HANDOUTS: 5,9 & 10

Method(s):

- Interactive lecture presentation
- Questions and Answers
- Group Work
- Problem Solving
- Discussion & Use of Audio-Video Aids

Session Plan

The trainer/ facilitator can start the session with a recapitulation of the previous days learning's. This can be done in various creative ways such as posing questions (can be quiz format/ general), asking participants to present it in their own ways, showing various pictures, videos and then reiterating the contents etc. There can be an informal interaction about the contents of sub module 3 to know their understanding about the need for integration of various cross cutting concerns in the DM plans. Invite

them to share their views and make a note of the points either on a flip chart or white board and gradually, move towards the first learning unit. Trainers' may divide the timings for the various sessions as per their convenience (flexi-mode).

Wrapping up the discussion: Depending upon the size of the training batch, form 4-5 working groups of participants and give them table-top exercises based on the sub sessions for better comprehension. Ask the working groups to share their findings and analysis in a presentation format. This also encourages a two-way learning and makes the sessions more interesting and interactive. Give 5 minutes at the end for some questions and answers or scope for discussion on each presentation. Close the session with a presentation summing up the key learning from the session and highlighting the points from Sub Module 3.

3.1 BASIC FEATURES OF SDMP

Duration: 60 minutes

Training Methodology: Power Point Presentation, Simulation

National Disaster Management Authority has accordingly framed guiding principles for the preparation of State DM plans. An outline to be followed by the States for preparing the plan has also been indicated.

The Framework

The framework of the plan should highlight the paradigm shift in DM from a relief-centric approach to a regime that anticipates the importance of preparedness, prevention and mitigation, and comprises three parts:

(a) General issues including broad vulnerability profile of the state. It will also comprise other thematic issues such as community-based DM, medical preparedness, awareness generation, training needs analysis and development of a state Human Resources (HR) plan, knowledge management, early warning and forecasting system standards for relief, rehabilitation etc.

(b) Disaster specific issues and methodologies.

(c) Cross-cutting issues common to all situations in any disaster. It will specifically deal with implementation, monitoring and review arrangements.

It will be in conformity with disaster specific guidelines, which are being issued from time to time by the NDMA wherein the last chapter of each guideline will detail outlines of the plans to be made. The plan will also address cross-cutting activities in

DM, the vertical and horizontal linkages requiring coordination between the union, state and local governments on the one hand and a host of government departments and agencies on the other.

Coordinating and Monitoring Mechanism

This should include a reference to the following, as part of the coordination and monitoring mechanism:

- The role of elders, senior citizens and locally respected leaders.
- The role of the NGOs, Self Help Groups and other Community Based Organizations (CBOs).
- The role of women as active participants in DM including risk reduction, mitigation, preparedness and awareness generation.
- The role of urban and rural local bodies particularly gram sabhas.

GROUP WORK (60 minutes)

Training Methodology: Discussion & Brainstorming

Form 4-6 working groups of participants (depending upon the batch strength) and provide them with copies of few State DM Plans including may be few copies of District disaster plans for review. Ask them to do a SWOT analysis of the plans. Participants can be briefed to have an in-depth discussion within their respective groups. All the working groups will then be asked to make their presentations which can be followed up by a question and answer session.

3.2 The Framework for preparation of State Disaster Management Plans (SDMPs)

Duration: 60 minutes

Technical Notes

Sections of the Framework: *The framework will comprise sections that deal with:*

- Operational.
- Administrative.
- Financial.
- Legal Aspects.
- Process.

Operational

The plan should:

(a) Consider the socio-cultural realities of the state, and should be equity based—recognizing the differential needs of all sections of the society, including marginalized groups such as the elderly, pregnant and lactating mothers, children, physically and mentally challenged persons etc. It should specifically address the concerns of women.

(b) Be in harmony with national, district, block, village and community level plans and should incorporate implementation strategies as well as indicate specific monitoring and evaluation mechanisms. The latter should also be able to capture the qualitative outcomes.

(c) Develop a base line and identify the total risk and also agree on the minimum acceptable level of risk. It must capture all aspects of the DM cycle from preparedness to recovery. However, the initial plan formulation need not await completion of the risk assessment exercise.

(d) Include a reference to the components of the state Human Resource Development (HRD) plan for DM, which specific emphasis on features specifically such as:

- Training needs analysis.
- Involvement, besides the Administrative Training Institutes (ATIs), of other sectoral training and educational institutions in the exercise.

(e) Contemplated professional training for micro planning, which should adopt the multi-hazard approach and develop inbuilt simulation techniques for the application of the plan.

(f) Describe the role of the Emergency Operations Centre (EOC): time bound action plans must be indicating for creating facilities for environment scanning, intelligence gathering, operations and logistics management under one roof for holistic and efficient management of disasters at the state and district level.

(g) Arrangements must be made and procedures must be laid down for manning the EOC on 24 X 7 X 365 basis. The plan must also cover in detail the indigenized Incident Command System at the state, district and local body levels.

(h) Incorporate Medical Preparedness and Mass Casualty Management: The following points must be reflected in the State plan:

- Listing of all hospitals and primary health centers including private nursing homes and their capacities.

- Emergency casualty management plans at the local, district and state level.
- For effective management of big cities like Delhi and Mumbai, nearby medical facilities must also be built into plans. Availability of mobile hospitals and/or plans for acquiring the same.

(i) Outline various life-line structures/infrastructure (e.g., bridges, roads, school buildings, hospitals, communication network etc.) and also highlight the arrangements for the maintenance and management of these structures during disasters.

(j) Take note of the fact that 12/14 battalions of the National Disaster Response Force (NDRF), co-existing with the proposed National Disaster Mitigation Resource Centers (NDMRCs) have already been positioned at different locations to cover the entire country. These NDMRCs have been evolved to help the states in capacity development, running of mock drills and facilitating the process of central assistance to the states. State governments should take all steps to upgrade and strengthen the Civil Defense and Home Guards, in sync with the efforts being made by the GoI in this regard.

(k) In major cities (with a population exceeding 10 lakhs), municipal corporations have a large administrative system including departments like engineering, public health and revenue, and sometimes fire services. These should provide a good mechanism for coordinated response in case of any crisis/disaster. Therefore, management of major cities should be planned as a unit. In metropolitan cities it is also advisable to make the urban metropolitan government directly responsible for DM.

(l) Include the essentials of a scientific approach in damage assessment exercise so that timely and adequate relief can be provided.

(m) Identify emergency management problems with spatial aspects appropriate for Geographic Information System (GIS). GIS can be part of the solution to many emergency management problems. Evaluation the costs of institutionalizing GIS as an emergency management tool in terms of staffing, training, data collection, hardware and software.

(n) Lay due emphasis on the conduct of mock exercises and drills for different disasters. These exercises are essential for role clarity of the stakeholders concerned at the district level and for synergizing coordination of various emergency support functions. In case of water and climate related hazards, exercises in different vulnerable areas of the state may be planned before the

onset of the rainy season. For other kinds of disasters, exercises may be planned at regular intervals as considered appropriate.

(o) Describe the mechanism of convergence of existing national, state, district and local resources.

(p) Address logistic issues in preparedness, response, rehabilitation and recovery related matters.

(q) Incorporate modalities for inter-state coordination as worked out in consultation with the neighboring states.

(r) Include details of inter-country coordination as worked out for states sharing common international boundaries in consultation with the central government and the NDMA.

(s) Include requirements of infrastructure, communication, training and HRD in a phased manner.

Administrative

i) As per the provisions mentioned in the 15th finance Commission, the plan must be in accordance with the development plans of the State five-year plans. The plan should also be in conformity with the state DM policy.

ii) The systems and institutions for implementation of the plans must be clearly identified and spelt out. The plan should explicitly take note of the available NDRF, Civil Defense, Home Guards, youth and students' organizations etc., The National Cadet Corps (NCC), National Service Scheme (NSS) and Nehru Yuva Kendra (NYK) networks. With the 15th Finance Commission making provision for utilization of 10% of the State Disaster Risk Management Funds (SDRMF) for the purpose of Capacity Building, specific plans for capacity building and training should alsobe included in a separate chapter.

iii) Public-Private Partnerships will be factored into the DM approach and the modalities through which these will work also need to be incorporated.

iv) Knowledge Management—the following aspects will be covered in this section:

Establishment and operation of Community Service Centre's (CSCs). The CSCs are an essential component of realizing the goal of becoming aknowledge-driven society. These centers form the core for the use of ICT for rural development and are designed to build around several other initiatives and programmes, such as self-help groups, skill building, microcredit, micro-enterprises, markets, literacy and education, agriculture, health, governance and entitlements etc.

- Measures for documenting the indigenous local practices for DM.
- Regular up-dation of the resource Inventory.

(v) As disasters do not recognize man-made boundaries, inter-state, inter-district coordination issues will have to be prominently factored into the plan.

(vi) DM involves a multi-disciplinary approach of many initiatives converging at the district and local level. It is here that there is greater need for inter-disciplinary coordination and monitoring. The facilities of the DM cells in all administrative training institutes should be fully utilized and strengthened to contribute to the development of DM related skills.

(vii) Interface with Panchayati Raj Institutes/CBOs, NGOs and the community at large and utilizing their assistance should be clearly brought out.

(viii) A mechanism must be put in place to ensure that the plan is updated on a regular basis (at least once in a year) and is able to accommodate changes over time.

Financial

The plan should:

i) Be supported with necessary budget provisions for short, medium- and long-term activities. The DM Act, 2005 mandates the constitution of a State Disaster Response Fund at the state level and District Disaster Response Funds at the district level. The modalities for the creation of these funds as well as guidelines for their utilization may be included in an annexure to the plan document. If it is not possible to put in place such a fund, in the near future, a reference to the establishment of these funds should be made in the plan.

ii) Incorporate details regarding building in DM concerns into developmental plans. Details of mitigation and capacity development measures must be spelt out.

iii) Be a component sub-plan of the state's annual and five-year plans, indicating upfront the allocation of each of the departments involved along the lines of the tribal area sub-plan.

iv) Reflect the provision of adequate funds for the requirements of relief material when disaster strikes, estimated on the basis of past experience. Care should also be taken to make full provision for the requirements of forces deployed on these occasions. Availability of funds for district and local authorities from the plans should be ensured.

v) Furnish, while referring to external aid, details of the nodal arrangements for coordination.

Legal

This section will cover aspects such as:

i) The responsibility of the SEC:
   - To coordinate and monitor the implementation of the national policy, the national plan and the state plan.
   - To provide information to the NDMA relating to various parameters of DM.
   - To earmark funds for prevention and integration of disasters in their development plans and projects.

ii) Put in place techno-legal regimes; e.g., amending building bye-laws, bringing in flood plain zoning legislation etc.

3.3 General and Disaster Specific Action Plan

Duration: 60 minutes

Technical Notes

The world over Disaster Preparedness or Disaster Risk Reduction (DRR) is becoming the most prominent theme for Disaster Management. It is not possible to eliminate the possibility of disasters due to ever changing vulnerabilities of any place. However, with due care and proper preparation, the risks and damages from disasters can be reduced considerably. India is prone to various natural and manmade disasters. The country has faced several devastating disasters including earthquakes, tsunamis and river floods in recent years. Accordingly, India was one of the pioneering countries to establish a three-level disaster management institutional set up. Considerable time has elapsed since the enactment of the DM Act in 2005. Governments at the central and state level have initiated various mitigation projects. There are also several internationally aided projects for disaster risk reduction being carried out in the country. Institutional set ups at the national, state and district levels have been formed. The nodal ministries responsible for DRR work have been designated for various manmade and natural disasters. Therefore, it is the right time to assess the level of preparation in the country to manage disasters and few natural and human-induced hazards and their subsequent conversion into disaster need customized planning and strategies for efficient management.

Part II: Disaster Specific Action Plan

Chapter I: Floods

Chapter II: Cyclone

Chapter III: Earthquakes

Chapter VII: Landslides

Chapter V: Chemical Disasters (including emphasis on offsite plans—preparation and rehabilitation)

Chapter VI: Nuclear Disasters

Chapter VII: Biological Disasters

Chapter VIII: Oil Spills and Mine Disasters

Chapter IX: Tsunami

Coordination and Implementation

Coordination, as between and amongst the various agencies involved in DM and ensuring implementation of the tasks entrusted to them is an important statutory responsibility of authorities at various levels. The plan should explicitly spell out the cross cutting nature of activities that constitute DM and the vertical and horizontal linkages required between government departments, scientific and technical institutions, NGOs, CBOs and local bodies and describe how ensuring of implementation of their functions will be done by the SDMA/SEC/DDMA etc.

Coordination of efforts amongst various government departments and other stakeholders generates synergy and involves the bringing together of agencies and functionaries to ensure effective performance. It is primarily concerned with the systematic acquisition and application of resources (personnel and equipment) in accordance with the requirements demanded by emergencies. Monitoring mechanisms incorporating, inter alia, quality and outcome indicators should also be spelt out. Through the installation of a regular Management Information System (MIS), clear responsibilities should be cast upon the various agencies to report either to the SDMA/SEC/DDMA in regard to the subject matter to be reported upon, the authorities to whom the report has to be sent together with specific time lines, frequency and reporting formats. To focus attention on areas that are not functioning as required, the principle of management by exception should be followed.

3.4 Cross-cutting Issues

Duration: 90 minutes

Training Methodology: Power Point Presentation, Discussion, Audio-Video

Training Note: The trainer can plan what they want to achieve by preparing the same. Facilitator may like to show some video, encourage participants to share their views on integration of more vulnerable groups in their plans, addressing their concerns and brainstorm to discuss on what they understand about inclusive approach in DRR.

Technical Notes

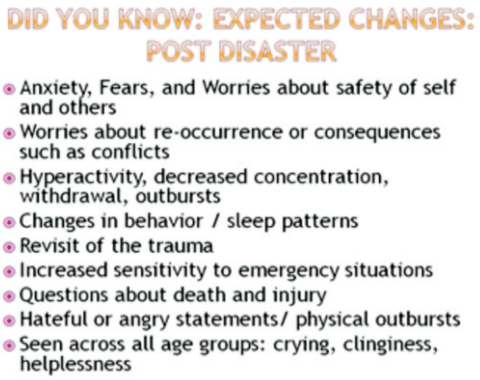
Cross-cutting issues like the environment, gender, vulnerable groups and their specific needs, psychological impact and its counselling post disasters are relevant to all aspects of development. Environment and development should be seen as one and the same thing. Long term development is not possible if rivers are polluted, the climate is changing, soil depleted and biodiversity destroyed as a result. On the other hand, people cannot be expected to care about the environment as long as their family live in poverty. Gender equality is a goal in itself, but no country can reach its potential if 50% of their labor force, talent and ingenuity are not used. If only female farmers had the same access to land, technology, financial services, education and markets as men, agricultural production would increase and the number of hungry people would be reduced by over 100 million! Mainstreaming cross-cutting issues means that all development initiatives should have a positive effect on issues such as gender, environment etc. The process of mainstreaming involves innovation, flexibility, learning and acceptance of new norms. DRR & its cross-cutting issues are intricately related - bridging and addressing complex cross-cutting issues, through a systematic effort that requires interdisciplinary; multi-level approaches; multi-stakeholders' participation.

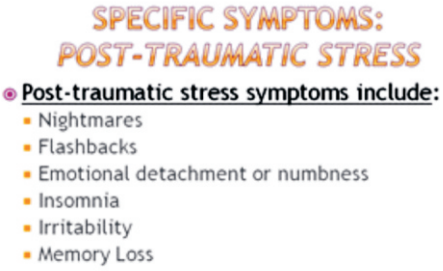
(Inclusive approach for more Vulnerable section)

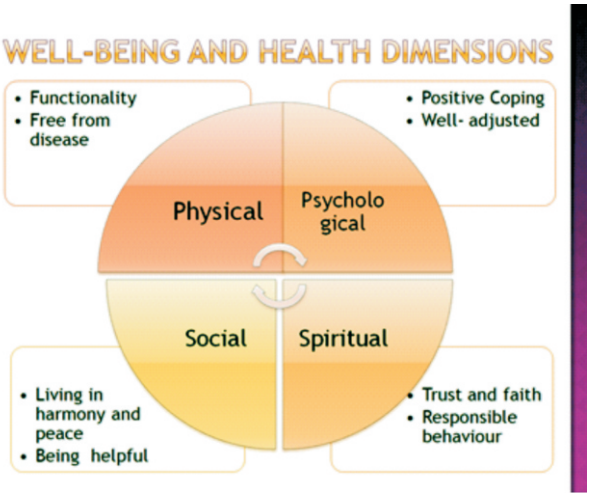
A more vulnerable group is defined as a group which has some special needs in a disaster and cannot comfortably or safely access; and use the standard resources offered in disaster preparedness, relief and recovery. Need to address the requirements of such sections which may vary from disaster to disaster must be emphasized and included in all planning's.

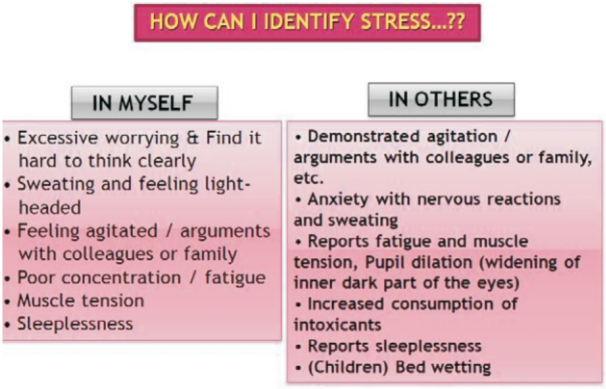
Categories: *Includes but is not limited to:*

- Women
- Children
- Old aged
- People with Disabilities
- People with critical needs/ co-morbid patients
- Migrants (especially during epidemic and pandemic spread)
- Depression patients (National Mental Health Survey of 2015-16 shows 15% Indians have some mental health concerns)











What needs to be done?

- Warning design Varied and simple in message format which can be understood by the vulnerable group.
- Mobility Evacuation and delivery of services.
- Health care access.
- Aid Distribution: Proactive in providing, reaching and distributing aid which is sensitive to the vulnerable groups.
- Establish mechanisms to support the more vulnerable group to access their entitlements.
- Create opportunities for them to participate in decision making.

Pre-Disaster Scenario

- Preparing special plans for vulnerable groups. Integrating them with their disaster management plans.
- Random acts of planning and preparedness should be discouraged.

Thrust areas

- Policies should be more specific and sensitive to the more vulnerable group.
- Disasters should be used as window of opportunity to empower the vulnerable group.
- Personal Preparedness for people with Special Needs.
- Community-based Preparedness for people with Special Needs.
- Infrastructure Preparedness for people with Special Needs.

Reading References:

Psycho-social Care in Disaster Management: A Training of Trainers (ToT) Module: https://www.nidm.gov.in/PDF/modules/psychosocial.pdf

Gender and Disaster Management: A Training of Trainers (ToT) Module: https://www.nidm.gov.in/PDF/modules/gender.pdf

Disaster Management Plan of Ministry of Health and Family Welfare, Government of Himachal Pradesh, 2017https://www.hpsdma.nic.in/WriteReadData/LINKS/DMP%20-%20Dept%20of%20Health%20_%20Family%20Welfare%20-%2020189948d1fb-b092-40d4-82d8-dc9214f23cad.pdf

Mainstreaming cross-cutting issues & Lessons from DAC Peer Reviews: mainstreaming cross-cutting issues advancing gender equality and environmental sustainability: © OECD 2014

https://www.oecd.org/dac/peer-reviews/Final%20publication%20version%20of%20the%207%20Lessons%20mainstreaming%20cross%20cutting%20issues.pdf

Corporate Social Responsibility (CSR) and Disaster Risk Reduction (DRR); South Asia Disasters.net; Issue 151, October 2016

https://www.preventionweb.net/files/51179_51179151snetcsranddrr.pdf

SUB MODULE 4

State Disaster Management Plan: Step by Step Guide

Learning Objectives

At the end of the session, participants should be able to:

- Engage in understanding the Process of preparation of SDMP.
- Discuss the Disaster Management Template

Duration: (10.00 a.m-17.00 p.m: excluding time for Lunch and Tea Breaks)

Equipments and Materials Needed:

Flip Charts, Markers, Pens, Sticky notes, Laptop, LCD/Projector, Chart papers, and Blackboard.

USEFUL HANDOUT: 3,5,6,9 &10

Method(s):

- Interactive lecture presentation
- Questions and Answers
- Group Work
- Discussion & Use of Audio-Video Aids

Session Plan

The trainer/ facilitator can start the session with a recapitulation of the previous days learning's. This can be done in various creative ways such as posing questions (can be quiz format/ general), asking participants to present it in their own ways, showing various pictures, videos and then reiterating the contents etc. There can be an informal interaction about the contents of sub module 4 to know their understanding about the need for integration of various cross cutting concerns in the DM plans. Invite them to share their views and make a note of the points either on a flip chart or white board and gradually, move towards the first learning unit. Trainers' may divide the timings for the various sessions as per their convenience (flexi-mode).

Wrapping up the discussion: Depending upon the size of the training batch, form 4-5 working groups of participants and give them group activity/ exercise based on the sub sessions for better comprehension. Ask the working groups to share their findings and analysis in a presentation format. This also encourages a two-way learning and makes the sessions more interesting and interactive. Give 5 minutes at the end for some questions and answers or scope for discussion on each presentation. Close the session with a presentation summing up the key learning from the session and highlighting the points from Sub Module 3.

4.1 State Disaster Management Plan: The Process

Duration: 60 minutes

Training Methodology: Power Point Presentation, Simulation

Training Note: The trainer/ facilitator is encouraged to utilize initial few minutes of the session by asking the participants to brainstorm and discuss on what they know about the desired outline for preparation of SDMP and related aspects. The Trainer can use few Audio-Video clippings to make the session interesting.

Technical Notes

This section will:

i) Designate the nodal department for coordinating formulation of the state plan.

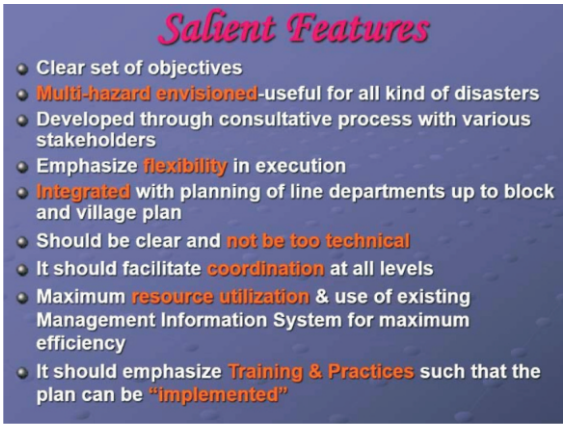
ii) Identify the focal point in each relevant department; consisting of a core group of officers and provide for adequate training to professionalize their approach.

iii) Involve administrative/ technical institutions for providing technical support.

iv) Describe nodal department(s) for involvement of NGOs, CBOs, corporate sector, youth organizations, educational institutions, Panchayati Raj Institutions (PRIs), urban local bodies, media and other stakeholders—and the modalities of such partnerships.

v) Outline the logistics management in all aspects of DM from preparedness to recovery.

vi) Describe the consultative process with local authorities, district authorities and people's representatives.





Part I: General

Chapter I: Introduction

- State profile—social, economic and demographic.
- Vision.
- Theme.
- Objectives.

Chapter II: Vulnerability Assessment and Risk Analysis

- History of vulnerability of the state to the disasters of different types.
- Hazard risk assessment and vulnerability mapping.
- The probable threat of man-made disasters.
- A hazard profile of the state together with maps and details of zonation, if any, undertaken. The district hazard profile in the GIS format should also be included, if available. The plan should also refer to emerging concerns such as urbanization, environment protection, population explosion etc.

Chapter III: Preventive Measures

- Man-made disasters.
- Natural Disasters—specific to the state.
- Early warning and dissemination systems.
- Prevention and mitigation plans; short, medium and long term with structural and non-structural measures required to be taken together with identification of nodal department(s) for each activity.

- Training needs analysis and development of state HR plan (to be added as annexure).

Chapter IV: Mainstreaming DM Concerns into Developmental Plans/ Programmes/Projects

- This includes economic and social infrastructure like irrigation, power, drinking water, sanitation, roads, buildings, schools and hospitals, housing, heritage monuments etc.
- Elements of impact assessment, risk reduction, and the "do no harm" approach. To be build into the developmental plans of each department while building in DM concerns into such plans.
- Classification of disasters and residual agenda.
  - What will be done?
  - How it is to be done?
  - Who will do it?
  - By when?

[in a brief manner logistics management details to be incorporated in respective Standard Operating Procedures (SOPs)]

Chapter V: Preparedness Measures

- Resource availability—national and state resources: government, private, civil society:
- Inventory of human and material resources should be included in IDRN/ SDRN with modalities for regular updating on quarterly basis.
- Community Based Disaster Management (CBDM).
- Training, capacity building and other proactive measures:
  - Civil Defense.
  - Home Guards.
  - NCC.
  - NSS.
  - NYK.
  - Educational and training institutions.
  - Civil society, CBOs, corporate entities.
  - Fire brigade.

- State Disaster Response Force.
- Civil police.

- Media—electronic, print and through folk media, inter personal communication.
- Awareness generation.
- Outline an effective GIS process for collecting and analysing spatial data for emergency management problem solving.
- Techno-legal regime.
- Medical preparedness-nominate/ designate hospitals, doctors and paramedics to cover emergency health management including trauma and psycho-social care.
- Knowledge management

Take steps to invent to rise Indigenous technological knowledge for combating disasters and validate it for appropriate use.

- Arrange for the use of ICT tools and resources such as Community Service Centers.
- Fail-safe communication including last-mile connectivity.
- Testing of the plans—through mock drills and rehearsals.
- Lessons learnt—to be incorporated at the time of updating of plan.

Chapter VI: Response

The design of plans developed for immediate response which would be initiated on a trigger mechanism basis upon the occurrence of a calamity of extreme nature.

- Incident Command System (suitably modified/indigenized).
- Emergency Operation Centers.
- Alert mechanisms—early warnings etc.
- Disaster risk reduction framework, policy, act of the state/state road map for hazard risk management.
- Probabilistic scenario-building for different levels of various disasters to which different areas of the state are vulnerable.
- The yearly schedule for the conduct of mock exercises for different disasters in different parts of the state at specified locations. Some exercises should be undertaken without prior intimation to enable a correct assessment of the level of preparedness.
- Procedure for the activation of plans—upon occurrence of any disaster.

Chapter VII: Partnership with other stakeholders

- The roles of academic institutions and scientific and technical organizations which have an important function in DM may be spelt out from early warning to recovery, together with names and designation of the nodal persons.
- Media.

Chapter VIII: Financial Arrangements

- Arrangements for the funding of the components of the state plan.
- Provision of funds for specific mitigation projects aimed at improving prevention, preparedness, and mitigation in requirement of specific disasters at the national, state and district levels (these would have to be prioritized and phased over time).
- Steps taken for the constitution of the Disaster Response Fund and Disaster Mitigation Fund both at the state and district level which can also serve as a source for funding of various activities as mandated by the DM Act, 2005.
- Detailed SOPs of each department to make provision in its annual budget for funds to carry out the activities set out in its own DM plan and role and responsibilities of all other stakeholders.

4.2 Disaster Management: Template for Ministries/ Departments

Duration: 15 minutes

Disaster Management Plan (Template for Ministries / Departments)

Two parts:

- Part-I National Component
- Part-II Contingency Plan for the Ministry/Dept.

As per Section 37, Disaster Management (DM) Act 2005, every Ministry/ Department of the Government of India shall have a Disaster Management Plan as per specifications mentioned in this Section of the Act.

Preliminaries

Profile of the Ministry

Describe mandate, domain of activities, whether the Ministry/ Dept. has any primary nodal responsibilities for Disaster Management or supporting roles.

*(**Explanatory Note** - to be described as per provisions of Sections 36, 37 and as Nodal Ministry or a Ministry which houses a nodal agency for warning or any special responsibility vested with regard to disaster management)*

Rationale

- Part-I: In accordance with the NDMP
- Part-II: Contingency Plan for business continuity
- Legal Mandate: As per DM Act and other relevant Acts, Roles and Regulations for addressing issues relating to disaster management/concerning issues.
- Compliance, conformity and alignment with National Disaster Management Plan (NDMP).
- Conforming to global best practices.
- Aligning with national priorities, national commitments to international commitments and priorities of NDMP (Post-2015 Global Frameworks; SDG; Climate Change; PM's Ten-Point Agenda for Disaster Risk Reduction; Social Inclusion and Mainstreaming DRR).

Scope of the Plan

- Disaster Management Cycle (from NDMP to provide clarity for full scope of DM responsibilities).
- Roles envisaged in Disaster Management as per notifications: Nodal Responsibilities or supporting role (Briefly describe with reference to relevant notification and references in NDMP).
- If Nodal Ministry/Dept. for any disaster - Summarize role envisaged.
- Synopsis of the role in National Disaster Management Plan.
- Contingency Planning for business continuity – importance of ensuring the functioning outlining the key functions of the ministry (for continued operations of the services of the Ministry in the aftermath of a disaster).

Vision

Optional, but desirable

Time Frames

- Short, Medium and Long-Term - as per NDMP; most activities, irrespective of time frames, will run concurrently; only some take longer to complete.
- As explained in NDMP, Short, Medium and Long do not imply an order of priority but the time needed for completion

- Describe how the ministry is committed to realizing the goals of NDMP, ministry/dept. will have timeframe-specific details, etc.

(Though the Plan is to be revised periodically as mandated in DM Act, 2005, it also needs to be aligned with NDMP and Sendai Framework. So the programmes and activities outlined in the Plan should be in coherence with the time lines mentioned in NDMP, i.e., short, medium and long term. A brief note can be provided in this section about how time lines have been considered in this Plan)

Institutional Framework for Disaster Management

Note: The institutional framework must support emergency functions, it cannot be same as normal business. The institutional capabilities should be for effective and quick support to national response in any disaster, anywhere in India. This will also depend on the DM responsibilities and roles envisaged for the ministry/dept in the NDMP. The concept of Incident Command with clarity in chain of command must be adopted.

- Institutional Framework (of the Ministry/ Dept.) dedicated for DM covering all phases of the DM cycle (see 1.3)
- National level and other Establishments (Regional/ Divisional/ State)
- Formation of DRR Cell with specified Functions (DRR Cell to be headed by a Nodal Officer, not below the rank of Joint Secretary)

***(Explanatory Note:** With the provisions mentioned above, but not limited to, Ministries / Departments need to briefly deliberate upon rationale of the Plan and other basic information. This will help in easy understanding of the purpose of the plan and also expectations from all those concerned. The Plan will not be limited to any one office. It is rather for whole of the Ministry / Department to ensure disaster risk reduction of all concerned and to ensure effective delivery mechanism at the time of any disaster at all levels. NDMP and Section 36 and 37 of the DM Act 2005 need to be referred to for providing above mentioned relevant information and for understanding the roles and responsibilities of Ministries and Departments of Government of India and about the formulation of DM Plan).*

Hazard, Risk, Vulnerability & Capacity Analysis (HRVC)

Disaster Risks, Vulnerabilities and Challenges

Highlight what is relevant to the Min/Dept.; Abstract from NDMP highlighting what is relevant to the Min/Dept. based on those described in NDMP. No need to repeat details from NDMP. Elaborate those relevant to the ministry/ dept. HRVC analysis to be conducted by Nodal Ministries only for respective disasters. Other

Ministries/Departments to develop strategies on their vulnerabilities, risks and capacities.

Understanding Disaster Risks

- Role of the Ministry/ Dept. in understanding and addressing various hazards described in the NDMP
- Mapping of Hazards, Risks and Vulnerabilities and emerging concerns – those relevant to the Ministry/ Dept.
- Capacity Analysis – Existing and those that must be developed

(Explanatory Note: For effective planning process, it is important and first step to understand our strengths and weaknesses and threats we are prone to. Each Ministry / Department should make provisions for Hazard, Risk, Vulnerability and Capacity Analysis as part of the plan. Rest of the activities will be derived from the findings of HRVCA.)

Hazard specific Prevention and Mitigation Measures

- Short, Medium and Long-term measures – as envisaged in NDMP.
- Instead of narrative and long description, the approach used in NDMP – i.e., a matrix giving plan and responsibility framework – should be used for each Thematic Area and Sub-Thematic Area given in the NDMP where the Ministry/ Dept. has a role

Illustration/ Example: Ministry of Earth Sciences

Hazard: Cyclone and Wind

Thematic Area for DRR: Understanding Risk

S.No	Sub-Thematic Area for DRR (as per NDMP)	Plan Components (from the responsibility-Centre column of NDMP, Responsibility Framework, Chapter 7)	Responsible Section/Agency of the Ministry/ Dept.	Recurring/ Regular	Short Term	Medium Term	Long Term
	Observation Networks, Information Systems, Research, Forecasting, Early Warning	Promote research and studies - both in-house and extra-mural by providing research grants to researchers and institutions	IMD	x	x	x	x
		Enhancement of Observational Network Stations (ONS)	IMD		x		

SN	Sub-Thematic Area for DRR (as per NDMP)	Plan Components (from the responsibility-Centre column of NDMP, Responsibility Framework, Chapter 7)	Responsible Section/Agency of the Ministry/ Dept.	Recurring/ Regular	Short Term	Medium Term	Long Term
		Modernization of observation network, equipment, systems, technology	IMD		x	x	
		Land - and Ocean-based observation systems	IMD		x	x	x

- Implementation should be given in terms of important action points vis-à-vis time frame, i.e., short, medium and long-term – as in NDMP
- Hazard specific Action Plans, as envisaged in NDMP but not limited to those
- In accordance with relevant hazard-specific guidelines issued by NDMA with emphasis on the domain/ mandate of the ministry/ dept.

*(**Explanatory Note:** Following the HRVCA, Ministry / Department must formulate certain action plans for mitigation and better preparedness against each of the disasters it may be prone to. These hazards and interventions for risk reduction need to be prioritized based on their severity and the vulnerability of the Ministry / Departments to the same. NDMP and Hazard specific NDMA guidelines may be referred to for the preparation of specific prevention and mitigation measures.)*

Mainstreaming DRR

- Investing in DRR – structural measures (creating Disaster Resilient infrastructures).
- Investing in DRR – non – structural measures.
- Strategies for sustainable development practices.
- Disaster Risk Governance – Programmes and policies of the Ministry / Department contributing towards DRR.

*(**Explanatory Note:** Ministries and Departments conduct various developmental programmes and projects. For sustainability of the developmental gains, mitigation and prevention should become part of, and integrated in to the development process, which is mainstreaming DRR).*

Inclusive DRR

- Importance of special focus on more vulnerable groups – see NDMP, summarise the reasons based on relevant sections of NDMP.

- Gender concerns, including sexual minorities (LGBTQI).
- SC/ST or any other vulnerable group based on the geographical area and specific context.
- Children
- Aged/Senior Citizens
- Persons with Disabilities/ Physically Challenged.

*(**Explanatory Note:** Though disasters do not discriminate, there are some sections of society which are more vulnerable to disasters due to their additional physical, social, economic or other vulnerabilities. Therefore, the plan should identify and address the concerns of these more vulnerable sections of the society to make the plan inclusive.)*

Coherence of Disaster Risk Management across Resilient Development and Climate Change Action

- Sustainable Development Goals and DRR: Ministry/Dept's role/ plans to meet India's SDG commitments; specific activities relating to DRR – in accordance with the monitoring framework used by Ministry of Statistics & Prog. Implementation and Niti Aayog.
- Climate Change Risk Management and DRR - Ministry/Dept's specific role/ plans to meet India's commitments for addressing global climate change and specific activities relating to DRR – in accordance with the monitoring framework used by Ministry of Statistics & Prog. Implementation and Niti Aayog.
- Explain how this plan (i.e., Ministry/Dept. DMP) is aligned to the Sendai Framework – follows the approach adopted in NDMP for that.

*(**Explanatory Note:** A disaster could set back decades of development and it is necessary to make incorporate make development disaster resilient. Anthropogenic (caused by human activities) climate change alters the pattern (frequency, distribution, intensity, etc.) of all the hydro-meteorological extreme events, which in turn aggravates the impacts of resulting disasters. Therefore, globally, there is an emphasis on adopting a comprehensive approach towards disaster risk management by bringing about coherence and mutual reinforcement of various measures contributing to DRR across development agenda, disaster risk management and steps to address climate change. Each Ministry/ Department must strive to for coherence and reinforcement of all efforts for DRR.)*

Capacity Development and Communication

Capacity Development

- Overall capacity building of Ministry / Department – Institutional / Human Resource.

- Sector wise planning.
- Yearly Calendar, keeping in view short, medium and long-term time frames used in the NDMP.

*(**Explanatory Note:** Once the plan is formulated there is a need to have and build capacity of required institutional and human resources. The Ministry / Department should have regular schedule of such capacity building measures.)*

Communication Strategy

- Internal - within the ministry and its associated agencies/ entities
- External (with other agencies)

*(**Explanatory Note:** Communication plays very important role in plan implementation and management of disasters. There will be need for both internal and external communications - with other stakeholders - during various phases of disaster management. Strategies should be prepared accordingly.)*

Coordination - Horizontal and Vertical Linkages

- Inter-agency Coordination
- Coordination with State Governments
- Coordination with other stakeholders, like NGOs, Private sector, civil society etc.

*(**Explanatory Note:** Disaster Management is a multi-dimensional, multi-level and multi-stakeholder issue and hence it would require horizontal and vertical linkages with all concerned stakeholders and also coordination with state governments for effective implementation of the plan. These should be planned accordingly.)*

Preparedness and Response

Preparedness

- Strategies and corresponding Human Resource Planning (based on Institutional Framework and HRVC analysis process at all levels as explained above).
- Lay down strategies and activities for preparedness and response phases, such as early warning, search & rescue (SAR), relief, coordination etc.
- Description of teams and nodal officers with their respective roles and responsibilities.
- Flow chart of activities with timelines.

*(**Explanatory Note:** Timely and proper deployment of human resource and sequencing of actions to be taken can make a response effective. This should be clearly spelt out in the Response Plan.)*

Early Warning / Alert System

- Internal and External (On-site and off-site plans for field entities, as applicable depending on the role of the Ministry/ Dept.)
- Control Room – Structure / Protocols / Activation and Deactivation
- Procedures for receiving and disseminating warnings (Nodal agencies responsible for issuance of early warning need to develop appropriate strategy for timely and effective dissemination of early warning and forecasts to all concerned).

*(**Explanatory Note:** Transmission of and receiving the early warning can make a big difference. The plan needs to clearly lay down structural and procedural details of early warning with clearly laid down responsibilities and formats to be used.)*

Hazard Specific Response Plans

(For major hazards relevant to the role of the ministry/ dept.)

- Follow the approach in NDMP – use table/matrix, not narratives
- Define scenario / Hazard / Incident
- Define precautions (Dos and Don'ts)
- Define impact zones
- Identify resources required for scenario/ hazards / incident under consideration and their positions
- SOP and relevant manuals – must be developed in addition to the DMP
- Action Plan

Task	Agency/Person Responsible	Remark
Raise alert		
Assess and Notify		
Activate Control Room		
Establish command		
Prioritize actions		
Mobilize and deploy resources		
SAR/Evacuation		
Establish Relief operations		
Assess situation dynamics to readjust action plan		

*(**Explanatory Note:** Disasters have some similarities and also some peculiarities. The plan should explain common terms for response planning for various disasters and also specific strategies to deal with them.)*

Activation of Response Plan:

- Ministries/Departments to develop their SOPs for actions to be taken by all concerned on the receipt of early warning or on the occurrence of a disaster and prescribe intensified response activities for the range of – 72 hrs to + 72 hrs vis-à-vis disaster event, where early warning available or for +72 hrs on the occurrence of a disaster, if early warning not available.

*(**Explanatory Note:** Ministries/Departments to develop strategy for activation of response plan, explaining initiation of process and sequencing of response activities and designation of responsibilities and coordination between stakeholders.)*

Logistics / Service Delivery Mechanism during Disasters - how to ensure and extend continued support to disaster affected

- Preparedness Plan for uninterrupted functioning of Ministries / Departments when many other States are affected.

*(**Explanatory Note:** Disasters not only affect individuals and structure in any organization but it also hampers the whole functioning of the organization at a time when it is most needed. For Ministries concerned with relief, the plan should, therefore, foresee all possible scenarios and develop an effective logistics / service delivery mechanism at the time of a disaster, considering worst case scenario.)*

Recovery and Reconstruction

Roles envisaged for the ministry/ dept. in different aspects:

- Recovery and Reconstruction
- Damage, Loss and Need Assessment
- Early, mid and long-term recovery (linkages with other recovery programmes of central and state governments).
- Build Back Better Approach

*(**Explanatory Note:** End of response is not end of responsibility. There are a lot of activities and actions that need to be initiated and taken up following the end of response phase. The required actions along with roles and responsibilities of all concerned stakeholders should be clearly laid down in the plan for recovery and reconstruction phase.)*

Budgetary Provisions

*(**Explanatory Note:** A plan and disaster management cannot be successful without suitable budgetary provisions. Budgetary provisions should be made for different activities and for different phases of disaster management.)*

Plan Management

- Development, Approval, Implementation, Review and Revision
- Documentation of incidents/best practices/lessons learned

*(**Explanatory Note:** A plan has to be a dynamic and action-oriented documents hence it would require to be updated and improved on regular basis. A system of its development, approval, implementation, review and revision should be clearly laid down in the plan. It is also important to learn from each disaster. Disaster result in many best practices and lessons learnt. These should be carefully documented and preserved for future references. The plan should indicate a system for that.)*

Annexure

- Maps (Hazards location with respect to geospatial references)
- Resources (Hazard specific resource mapping)
- Directories (Emergency Contact Numbers)
- Other important / related references
- Index (for quick reference to relevant sections)

Part-II

Emergency Contingency and Business Continuity Plan for the Ministry/ Department

(Internal - Ministry/Dept. own Disaster Management)

- Institutional Arrangements for Response/ Incident Command System
- Prevention and Mitigation of Disasters
- Preparedness
- Mitigation
- Ensuring Business Continuity of the Ministry/ Dept.
- Monitoring
- Recovery

(Note: The National Disaster Management Plan (NDMP) referred to in this document is the draft NDMP which is currently under revision. A copy of the draft NDMP is being shared along with this template. This draft NDMP is only for the purpose of reference for the preparation of DM Plan

of Ministries / Departments and should not be considered as final NDMP and not to be used for any other purpose.)

Annexure to the Plan

- Relief codes—important government orders.
- Damage/need assessment format.
- Emergency telephone directory.
- The main state river basin/road/transport networks.
- List of NGOs at national, state and district/sub-district level functioning in the state.
- List of training/technical institutions.

Incident Response System (IRS)

Realisation of certain shortcomings in response and a desire to address the critical gaps led Government of India (GOI) to look at the world's best practices and in this pursuit a decision was taken to closely look at the Incident Command System (ICS) of US which was identified as one of the global best practices in disaster management by the High Power Committee on disaster management constituted by the Government of India. The complexity of incident management coupled with the need for multiagency and multi-functional involvement on incidents was the main rationale for the development of a single standard incident management system that can be used by all emergency response disciplines. This need resulted in the development and implementation of Incident Command System (ICS). The Incident Response System (IRS) provides a systematic, proactive approach guiding the concerned departments and agencies at all levels of government, the private sectors and Non-Governmental Organizations to work flawlessly in disaster situation.

GROUP WORK (165 minutes)

Training Methodology: Group Discussion & Brainstorming

Trainer can divide the batch into 4-5 groups and based on the district/ State they belong to and based on the SDMP Framework, ask them to deliberate and discuss amongst their respective groups and develop an outline of State/ District DM Plan. Each group can be asked to make presentations of the same on the final day of the training. Participants can be also engaged in generating their ideas and thoughts on how the different districts or line department disaster plans can be integrated in any SDMP.

Reading References:

State Disaster Management Plan of Government of Meghalaya: Revenue and Disaster Management Department; 2006 http://megrevenuedm.gov.in/msdma/plans/state-disaster-mgmt-plan.pdf

State Disaster Management Plan of Gujarat: Gujarat State Disaster Management Authority: http://www.gsdma.org/Content/state-level-disaster-management-plan-4160

State Disaster Management Plan of Government of Rajasthan Disaster Management & Relief Department Jaipur, Rajasthanhttp://dmrelief.rajasthan.gov.in/documents/sdmp-eng.pdf

SDMPs

Andhra Pradesh State Disaster Management Plan: https://apsdma.ap.gov.in/view-dm_plans

Arunachal Pradesh State Disaster Management Plan: https://sdma-arunachal.in/state-level-disaster-management-plan/

Assam State Disaster Management Plan: http://sdmassam.nic.in/dmp.html#ddmp

Bihar State Disaster Management Plan: http://www.bsdma.org/DMP.aspx?id=1

Chhattisgarh State Disaster Management Plan: http://sdma.cg.gov.in/SDMP%20English.pdf

Goa State Disaster Management Plan:https://sdma.goa.gov.in/

Gujarat State Disaster Management Plan: http://www.gsdma.org/

Haryana State Disaster Management Plan: http://www.hdma.gov.in/en/projects-programsdistrict-ddmp/district-ddmp-english

Himachal Pradesh State Disaster Management Plan, 2017 (updated): https://hpsdma.nic.in/index1.aspx?lsid=14&lev=1&lid=11&langid=1

Jharkhand State Disaster Management Authority: https://www.jharkhand.gov.in/PDepartment?department=1bc964f6f1e70dcba774fd80fe1118e0

Karnataka State Disaster Management Plan:https://atimysore.gov.in/wp-content/uploads/final-english-ksdmp-2019-20.pdf

Kerala State Disaster Management Plan:https://sdma.kerala.gov.in/sdmp/

Madhya Pradesh State Disaster Management Plan:http://www.mpsdma.mp.gov.in/uploads/media/MP-SDMP-2307141.pdf

Maharashtra State Disaster Management Plan:https://msdma.maharashtra.gov.in/pdf/MSDMP.pdf

Meghalaya State Disaster Management Plan:http://msdma.gov.in/sdmp.html

Mizoram State Disaster Management Plan:https://dmr.mizoram.gov.in/page/mizoram-state-disaster-management-plan-2020

Nagaland State Disaster Management Plan:https://nsdma.nagaland.gov.in/state

Odisha State Disaster Management Plan:https://www.osdma.org/state-dm-plan/#gsc.tab=0

Punjab State Disaster Management Plan:https://revenue.punjab.gov.in/?q=disaster-management-plans

Rajasthan State Disaster Management Authority: http://www.dmrelief.rajasthan.gov.in/

Sikkim State Disaster Management Authority: http://www.ssdma.nic.in/Home/ContentFor?MenuID=64&ContentFor=Content_SubMenu

Tamil Nadu State Disaster Management Authority: https://tnsdma.tn.gov.in/pages/view/State-Disaster-Management-Policy

Tripura State Disaster Management Authority: https://tdma.tripura.gov.in/

Uttar Pradesh State Disaster Management Authority: http://upsdma.up.nic.in/

Uttarakhand State Disaster Management Authority: http://usdma.uk.gov.in/

West Bengal State Disaster Management Plan: http://wbdmd.gov.in/Pages/plan.aspx

Kerala Village Disaster Management Plan: https://sdma.kerala.gov.in/disaster-management-plans/

Village Disaster Management Plans (VDMP)

Odisha: https://www.osdma.org/plan-and-policy/village-disaster-management-plan/#gsc.tab=0

Kerala, Peringara: https://sdma.kerala.gov.in/wp-content/uploads/2018/11/VDMP-English-Peringara2018.pdf

Kerala, Munreothuruthu: https://sdma.kerala.gov.in/wp-content/uploads/2018/11/VDMP-English-Munreo2018.pdf

IRS

Training Module Incident Response System Basic & Intermediate: https://www.nidm.gov.in/PDF/modules/irs-1.pdf

Advanced Incident Response System (IRS): https://www.nidm.gov.in/PDF/modules/irs-6.pdf

Incident Response system: Area Command Course (Participant Manual): https://www.nidm.gov.in/PDF/modules/irs-7.pdf

Training Module- IRs: Liaison Officer: https://www.nidm.gov.in/PDF/modules/irs-8.pdf

Training Module- IRs: Safety Officer: https://www.nidm.gov.in/PDF/modules/irs-10.pdf

Training Module INCIDENT RESPONSE SYSTEM Integrated Planning Section Chief: https://www.nidm.gov.in/PDF/modules/irs-3.pdf

Training Module INCIDENT RESPONSE SYSTEM Incident Commander: https://www.nidm.gov.in/PDF/modules/irs-2.pdf

Training Module Incident Response System Operation Section Chief: https://www.nidm.gov.in/PDF/modules/irs-4.pdf

Training Module Incident Response System Logistics Section Chief: https://www.nidm.gov.in/PDF/modules/irs-5.pdf

SUBMODULE 5

State Disaster Management Plan: Review and Validation Process

Learning Objectives

At the end of the session, participants should be able to:

- Explain the various funding mechanisms available at State level for DRR
- Engage in understanding the importance of Drills
- Discuss the Evaluation & Validation mechanisms in SDMP

Duration: (10.00 a.m-15.00 p.m: excluding time for Lunch and Tea Breaks)

Equipments and Materials Needed:

Flip Charts, Markers, Pens, Sticky notes,
Laptop, LCD/Projector, Chart papers, and Blackboard.

USEFUL HANDOUT: 7 & 9

Method(s):

- Interactive lecture presentation
- Brainstorming

Session Plan

The trainer/ facilitator can start the session with a recapitulation of the previous days learning's. This can be done in various creative ways such as posing questions (can be quiz format/ general), asking participants to present it in their own ways, showing various pictures, videos and then reiterating the contents etc. There can be an informal interaction about the contents of sub module 5 to know their understanding about the need for integration of various cross cutting concerns in the DM plans. Invite them to share their views and make a note of the points either on a flip chart or white board and gradually, move towards the first learning unit. Trainers' may divide the timings for the various sessions as per their convenience (flexi-mode).

Wrapping up the discussion: Depending upon the size of the training batch, form 4-5 working groups of participants and give them group activity/ exercise based on the sub sessions for better comprehension. Ask the working groups to share their findings and

analysis in a presentation format. This also encourages a two-way learning and makes the sessions more interesting and interactive. Give 5 minutes at the end for some questions and answers or scope for discussion on each presentation. Close the session with a presentation summing up the key learning from the session and highlighting the points from Sub Module 3.

5.1 Funding Arrangements

Duration: 15 minutes

Training Methodology: Power Point Presentation, Discussion

Training Note: The trainer/ facilitator is encouraged to utilize initial few minutes of the session by asking the participants to brainstorm and discuss on what they know about the different funding options available at National, State and District levels for DRR.

Technical Notes

To ensure the long-term sustenance and permanency of the organization, funds are generated and deployed on an ongoing basis. Financial mechanism for disaster management is already in place at National, State and District level. Additionally, there are various projects, programmes and initiatives catering to different phases of disaster management at nation, state and district level.

Centre Level

a. National Disaster Risk Management Fund

This fund has been created under the legal framework of National Disaster Management Act, 2005 and now the 15th Finance Commission recommended the creation of funds for Disaster Mitigation along with Disaster Response, now together be called as "National Disaster Risk Management Fund (NDRMF) and State Disaster Risk Management Fund (SDRMF). Under the existing guidelines, it is available for assistance from various natural hazards and human-induced activities.

In case of calamity of severe nature, when State Disaster Risk Management Fund is insufficient to meet the relief requirements, additional central assistance is provided from NDRMF to the State Governments by following the laid down procedures. The Commission recommended retaining the existing cost-sharing patterns between the centre and states for disaster management funds. The cost-sharing pattern between

centre and states is: (i) 90:10 for north-eastern and Himalayan states, and (ii) 75:25 for all other states. State disaster management funds will have a corpus of Rs 1.6 lakh crore (Center's share is Rs 1.2 lakh crore).

The allocated grants for NDRMF is Rs. 12,390 crore for FY 2020-21

Recommended grants for SDRMF is Rs. 28, 983 crore for FY 2020-21

Allocations for SDRMF will be further sub-divided into:

- Response and Relief- 40%
- Recovery and Reconstruction- 30%
- Mitigation-20%
- Capacity Building-10%

b. Prime Minister's National Relief Fund (PMNRF)

PMNRF provides immediate relief to families of those killed in natural calamities and to the victims of major accidents and riots. The fund is raised entirely by public contributions.

State Level

a. State Budget

State Authorities submits the budget to the State Government for approval in the prescribed form for the next financial year showing the estimated receipts and expenditure, and the sums which would be required from the State Government during that financial year. States also allocates funds in the State Budget for relief activities. In addition, funds may be available through the SDRMF.

b. State Disaster Risk Management Fund

There is a provision for State Disaster Risk Management Fund which is made available to Commissioner of Relief, Revenue Department. This is meant for meeting expenditure for providing immediate relief to the victims of various natural and human-induced hazards and subsequent disasters.

c. Chief Minister Relief Fund

This provides immediate support to the distressed people affected by the natural calamities, or few specified human-induced accidents and disasters.

Other Sources of Funds

a. Public Private Partnership

There are projects/schemes in which funding can be done by a public sector authority and a private party in partnership. In this State Government along with Private organizations and with Central Government share their part.

b. Grant In-aid

State government may receive a grant in aid from Central Govt., World Bank, other departments, bilateral or multilateral funding agencies, etc. to carry out specific projects/schemes related to disaster management/ mitigation/ capacity building.

c. Loan

Authority may borrow money from the open market with the previous approval of State government to carry out disaster management functions as described in DM Act 2005.

d. Recovery Measures

The State governments shall finalize and implement select recovery measures such as imposing tax surcharge levies (central), imposing local taxes, facilitation of funding responsibility sharing by beneficiaries etc.

e. Corporate Social Responsibility (CSR)

While India has a long-standing tradition of corporate philanthropy, there is today an increased focus on CSR or corporate social responsibility with the government issuing clear guidelines on expenditure regarding activities classified as CSR. The clause 135 of the Companies Act 2012 provides a framework for private and public companies to spend 2% of their profits after tax on socially responsible activities in thematic areas suggested under schedule VII of the bill. Disaster Risk Reduction (DRR) positively impacts the economics, social welfare and natural resources of a country. Corporates would be fostering both national welfare and their business sustainability by contributing CSR donations into DRR. This can be taken up for:

- Promotion of Education
- Capacity and Skill building
- Livelihood protection and enhancement

- Empowerment of Women and Gender equity
- Environmental sustainability
- Rural Development
- Poverty alleviation

5.2 Review and Updation of Plans

Duration: 30 minutes

Training Methodology: Power Point Presentation, Simulation/ discussion

Technical Notes

The plan should include a schedule for submitting Action Taken Reports at prescribed periodicity, confirming that their components have been duly updated. Plan maintenance is a dynamic process of updating the plan on a periodic basis. The back-bone of maintaining the plan is carrying out mock drills and updating the plan based on the lesson learnt as an outcome of the mock exercise which consists of identifying the gaps and putting in place a system to fill the same.

Drill

There should be adequate provisions made to prepare, review and update State Disaster Management Plan as provided for in the DM Act Section 22 (1) & Section 23 (5). He shall also ensure that disaster management drills and rehearsals are carried out periodically.

While updating the plan the following aspects need to be considered:

a. The plan must be update once every year (annually)
b. Critical analysis of the outcome of exercises & mock drills must be a part of plan testing.
c. Incorporation of lessons learnt in the updated plan as an outcome of mock exercises through identification of gaps and suggestive measures.

The plan must be thoroughly tested and evaluated once in a year. The plan testing should preferably be organized in consultation with the stakeholders.

The main objectives of plan testing are to:

a. Determine the feasibility and compatibility of facilities, backup and procedures
b. Identify areas in the plan that needs modification.

c. Identify training needs of key stakeholders.
d. Assess the ability of the organization/department to respond to disasters.

After plan testing and incorporation of lesson learnt, a copy of the revised and updated plan must be sent to the following officials:

a. National Disaster Management Authority
b. Chief Secretary, State Government
c. Principal Secretary, Revenue Department
d. Head of all line Departments
e. State Emergency Operation Center (EOC)
f. District Emergency Operation Centers (EOCs)
g. IMD
h. CWC / any other relevant department

All the departments, which have specific roles and responsibilities in State Disaster Management Plan, must have a system to ensure that all officers of their departments who have a specific role to play are fully up to date with their responsibilities/tasks.

Mock Exercise

Preparedness measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations must also formulation of emergency plans along with training of personnel's' and conducting drills.

Drills are conducted so as to:

- Test the Plan and Modify, if necessary
- Ensure current applicability of the Plan
- Train Staff, Media, Community
- Gain Recognition for the Emergency Management Programme
- Legal and Contractual Obligation
- Test Communication Network
- Reveal Conflicts & Planning gaps
- Reveal Procedural, Policy & Resource Gaps

- Improve Coordination
- Clarify Roles and Responsibilities
- Assess & Improve Individual Performance
- Use it as a training tool
- Identify Training Needs & Evaluate Training Effectiveness
- Practice working as a team

Steps in conducting a Drill

- Orientation Seminar
- Table Top Exercise
- Functional Exercise
- Full-scale Exercise

a. Mock exercise debriefing and evaluation is of critical importance that these insights are collected from participants (who participated in the exercise) and used to modify the plan.

b. Debriefing is very effective as it is carried out immediately after the exercise. It also includes documentation in terms of recommendations and improvements of the plan.

Review & Updation of Plan

The State Disaster Management Plan should be reviewed and updated annually. Concerned Ministries can be updated on a regular basis for specific disasters as has been mentioned in our National Disaster Management Plan 2019. The plan updation process should begin preferably in January in each year and should be completed by month of April, based on inputs from the following:

a. Drills and rehearsals

b. Recommendations from all departments in their Annual DM Report

c. Lessons learnt from any disaster event in their State, other states and or countries

d. Directions from Ministry of Home Affairs, National Disaster Management Authority, Government of India, etc.



5.3 Evaluation & Validation Mechanism

Duration: 15 minutes

Training Methodology: Power Point Presentation, Simulation

Training Note: The trainer/ facilitator is encouraged to utilize initial few minutes of the session by asking the participants to discuss on the importance of feedback, various mechanisms to collect feedback and validation process.

Technical Notes

Training evaluation is the process that examines the effectiveness of your educational and training programs. Validation is the process that certifies the training employees are receiving meets expected standards. Since Evaluation and Validation are concerned with learning outcomes, many a times, certification is based upon measurable performance. To ensure objectivity, training evaluators have a set of standard evaluation protocols to guide their work. Protocols provide a means for consistent testing each time a training program is evaluated. Evaluation protocols are step-by-step checklists that training evaluators are required to follow. Consistent training evaluation drives improvement of training processes through the identification of discrepancies and inconsistencies in training. Consistent evaluation

enables training managers to report to senior leadership that training is being conducted according to expected standards. Validation is the certification process that assures trainees have achieved the skills and knowledge training was intended to provide. Validation not only certifies the final results of training but validates that the entire training program is designed correctly. At the conclusion of a training program, employees should have the skills to move on to the next step in their education or to progress in their job. Many critical training programs must be validated by agencies such the National, State level based Training Institutes, State Disaster Management Authorities or specific experts may be invited for this purpose.

Sample

Develop five questions that you can use to evaluate participants "reaction" to the training (Level 1)

1. Please give your opinion about the information and materials that you received beforehand. Was it useful in making your preparation for the course?

   1 unsatisfied 2 satisfactory 3 satisfied 4 excellent 5 any other comment

2. Are you satisfied with the travel arrangements? Circle the most appropriate

   1 terrible 2 poor 3 good 4 very good 5 excellent

3. Would you like to help us in improving the residential facilitated with your suggestions?

4. Did you face any travel related issues? Y( ) n( ). If yes then what?

5. In terms of your training need, please rate the relevance of this training programme

   1 irrelevant 2 very relevant 3 relevant

Select one sub-objective of the training design and develop a methodology and or question to evaluate "learning" from the training (Level 2)

- Objective
  - Describe basic terminologies used in DRR
- Method used can be:
  - **Matching:** you give set of definitions on one side of the page and meanings on another

- **Pre-test/post-test:** Set of objective Questions based on basic concepts/terminologies of DRR

Based on the objective of the training design, develop a methodology to evaluate "behaviour change" from training (Level 3)

- Survey can be the methodology
  - Assumption – survey after 1 year of practice
    - How many trainings has he/she conducted within that year and did it include components of DRR?
    - Any new specific training program introduced launched on mainstreaming DRR? Any new module/manual developed on DRR integration?
    - Any new research project he/she has developed, proposed etc?
    - Any Programmes launched or IEC (Information Education and Communication) introduced?

Based on the objective of the training design, formulate measurable impact indicators to evaluate "Result" from the training (Level 4)

1. Assess number of training programs that have components of DRR in pre and post training.
2. Check the new case study for integration of components of DRR have been taken up.
3. Check if post training the DM plans of respected State/district has components of DRR.
4. Developmental initiatives/community empowerment programs/development schemes of that area have components of DRR.

EVALUATION - REACTION

1. Please give your opinion about the information and materials that you received beforehand. Was it useful in making your preparation for the course?
   a. Excellent
   b. Very Good
   c. Good
   d. Satisfactory
   e. Any Other

2. Are you satisfied with the travel arrangements? Circle the most appropriate.
   a. Excellent
   b. Very Good
   c. Good
   d. Poor
   e. Terrible
3. Would you like to help us in improving the residential facilitated with your suggestions?
4. Did you face any difficulty in/during nomination process? Y ( ) n ( ). If yes then what?
5. In terms of your training need, please rate the relevance of this training programme?
   a. Very relevant
   b. Relevant
   c. Irrelevant

EVALUATION - LEARNING

- Explain different phases of DM cycle
- Explain the tools used for Hazard and Vulnerability analysis

PRE-TEST

1. Do you think DRR and Climate Change are related? If yes how?
2. How do you think the terms hazards and disasters related to climate change?
3. Write few components of DM plan.
4. What is the difference between Mitigation and Preparedness.

Group Presentations (90 minutes): The groups formulated on day 4 to develop an outline of State/District DM Plan can make formal presentation of their work and also initiate discussion amongst the batch and get inputs to refine the plans.

A formal Valedictory session can be organized to discuss the conduct of the entire Training, new insights, way forward and take feedback to improve the course content etc. (30 minutes)

Handouts

Handout 1: Basic Terms of Disaster Risk Reduction- UNISDR (2009)

Acceptable Risk: The level of potential losses that a society or community considers acceptable given existing social, economic, political, cultural, technical and environmental conditions.

Adaptation: The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Biological hazard: Process or phenomenon of organic origin or conveyed by biological vectors, including exposure to pathogenic micro-organisms, toxins and bioactive substances that may cause loss of life, injury, illness or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Building code: A set of ordinances or regulations and associated standards intended to control aspects of the design, construction, materials, alteration and occupancy of structures that are necessary to ensure human safety and welfare, including resistance to collapse and damage.

Capacity: The combination of all the strengths, attributes and resources available within a community, society or organization that can be used to achieve agreed goals.

Capacity Development: The process by which people, organizations and society systematically stimulate and develop their capacities over time to achieve social and economic goals, including through improvement of knowledge, skills, systems, and institutions.

Climate: The average of weather over at least a 30 year period. Note that the climate taken over different periods of time (30 years, 1,000 years) may be different. The old saying is climate is what we expect and weather is what we get. (NOAA/CPC)

Coping Capacity: The ability of people, organizations and systems, using available skills and resources, to face and manage adverse conditions, emergencies or disasters. (ISDR)

Climate change: (a) The Inter-governmental Panel on Climate Change (IPCC) defines climate change as: —a change in the state of the climate that can be identified (e.g.,

by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcing or to persistent anthropogenic changes in the composition of the atmosphere or in land use‖. (b) The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as ―a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

Climate Extreme: A rare climatic situation, generally resulting from cumulative occurrence of weather extremes, causing extraordinary economic and social (loss of life or livelihood) damage. (IPCC, 2001 Third Assessment Report; Easterling et al., 2000)

Critical facilities: The primary physical structures, technical facilities and systems which are socially, economically or operationally essential to the functioning of a society or community, both in routine circumstances and in the extreme circumstances of an emergency.

Climate Mean: The arithmetic average or the middle point between two extremes. (NOAA/CPC) also called climate normal.

Contingency planning: A management process that analyses specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations.

Environmental Impact Assessment: Process by which the environmental consequences of a proposed project or programme are evaluated, undertaken as an integral part of planning and decision-making processes with a view to limiting or reducing the adverse impacts of the project or programme.

Exposure: People, property, systems, or other elements present in hazard zones that are thereby subject to potential losses.

Forecast: A weather forecast, or prediction, is an estimation based on special knowledge of the future state of the atmosphere with respect to temperature, precipitation, and wind. Weather forecasts are now routinely provided for up to 14 days in advance and outlooks for seasonal and longer timescales. (NOAA/CPC)

Geological hazard: Geological process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Greenhouse gases: Gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation of thermal infrared radiation emitted by the Earth's surface, the atmosphere itself, and by clouds.

Hazard: A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Hydro meteorological hazard: Process or phenomenon of atmospheric, hydrological or oceanographic nature that may cause loss of life, injury or other health impacts, propertydamage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Land-use planning: The process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long term economic, social and environmental objectives and the implications for different communities and interest groups, and the subsequent formulation and promulgation of plans that describe the permitted or acceptable uses.

Livelihood: Comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base. (Scoones 2007)

Mitigation: The lessening or limitation of the adverse impacts of hazards and related disasters.

National platform for disaster risk reduction: A generic term for national mechanisms for coordination and policy guidance on disaster risk reduction that are multi-sectoral and interdisciplinary in nature, with public, private and civil society participation involving all concerned entities within a country.

(Natural) Hazard: Natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. (ISDR)

Non-structural measures: Any measure not involving physical construction that uses knowledge, practice or agreement to reduce risks and impacts, in particular through policies and laws, public awareness raising, training and education.

Preparedness: The knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions.

Prevention: The outright avoidance of adverse impacts of hazards and related disasters.

Public awareness The extent of common knowledge about disaster risks, the factors that lead to disasters and the actions that can be taken individually and collectively to reduce exposure and vulnerability to hazards.

Recovery: The restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.

Resilience: The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Response: The provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduces health impacts, ensures public safety and meet the basic subsistence needs of the people affected.

Retrofitting: Reinforcement or upgrading of existing structures to become more resistant and resilient to the damaging effects of hazards.

Risk: The combination of the probability of an event and its negative consequences. (ISDR)

Risk assessment: A methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend.

Risk management: The systematic approach and practice of managing uncertainty to minimize potential harm and loss.

Risk transfer: The process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household, community, enterprise or state authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.

Socio-natural hazard: The phenomenon of increased occurrence of certain geophysical and hydro meteorological hazard events, such as landslides, flooding, land subsidence and drought that arise from the interaction of natural hazards with overexploited or degraded land and environmental resources.

Structural measures: Any physical construction to reduce or avoid possible impacts of hazards, or application of engineering techniques to achieve hazard-resistance and resilience in structures or systems;

Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Technological hazard: A hazard originating from technological or industrial conditions, including accidents, dangerous procedures, infrastructure failures or specific human activities, that may cause loss of life, injury, illness or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Vulnerability: The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

Handout 2: Hyogo Framework for Action (2005-2015)

BUILDING THE RESILIENCE OF NATIONS AND COMMUNITIES TO DISASTERS

The HFA is a 10-year plan to make the world safer from natural hazards.

It was endorsed by the UN General Assembly in the Resolution A/RES/60/195 following the 2005 World Disaster Reduction Conference.

Weblink: https://www.unisdr.org/files/8720_summaryHFP20052015.pdf

Priorities for Action: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation. Strong national and local commitment is required to save lives and livelihoods threatened by natural hazards. They must also allocate sufficient resources to support and maintain them. This includes: Creating effective, multi-sector national platforms to provide policy guidance and to coordinate activities; Integrating disaster risk reduction into development policies and planning, such as Poverty Reduction Strategies; and, Ensuring community participation, so that local needs are met. 1 Make Disaster Risk Reduction a Priority Collaboration is Key Madagascar's National Platform for Disaster Reduction includes: Government departments, such as Education, Water, Transport and Communication, Agriculture and Livestock, Land, and the Office of the Prime Minister; NGOs; the media; the donor community; and the UN. It carries out disaster reduction training, and has enhanced disaster preparedness by constructing cyclone refuges.

Priorities to Identify, assess, and monitor disaster risks - and enhance early warning: Identify, assess, and monitor disaster risks –and enhance early warning. To reduce their vulnerability to natural hazards, countries and communities must know the risks that they face, and take actions based on that knowledge. Understanding risk requires investment in scientific, technical, and institutional capabilities to observe, record, research, analyze, forecast, model and map natural hazards. Tools need to be developed and disseminated: statistical information about disaster events, risk maps, disaster vulnerability and risk indicators are essential. Most importantly, countries need to use this knowledge to develop effective early warning systems, appropriately adapted to the unique circumstances of the people at risk. Early warning is widely accepted as a crucial component of disaster risk reduction. This early warning system has proven its effectiveness. During 2004, when Hurricane Charley hit, 70,000 houses were severely damaged and four people were killed. When Hurricane Ivan struck the following month, over 2 million people were evacuated. No one was killed.

Priorities to use knowledge, innovation, and education to build a culture of safety and resilience at all levels: Use knowledge, innovation, and education to build a culture of safety and resilience at all levels. Disasters can be reduced substantially if people are well informed about measures they can take to reduce vulnerability - and if they are motivated to act. Key activities to increase awareness of disaster prevention include: Providing relevant information on disaster risks and means of protection, especially for citizens in high-risk areas; Strengthening networks and promoting dialogue and cooperation among disaster experts, technical and scientific specialists, planners and other stakeholders; Including disaster risk reduction subject matter in formal, non-formal, and informal education and training activities; Developing or strengthening community-based disaster risk management programmes; and, Working with the media in disaster risk reduction awareness activities. Local Knowledge is Critical for Disaster Reduction.

Priority to Reduce the underlying risk factors: Reduce the underlying risk factors. Vulnerability to natural hazards is increased in many ways, for example: Locating communities in hazard-prone areas, such as flood plains; Destroying forests and wetlands, thereby harming the capacity of the environment to withstand hazards; Building public facilities and housing unable to withstand the impacts of hazards; and, Not having social and financial safety mechanisms in place. Countries can build resilience to disasters by investing in simple, well-known measures to reduce risk and vulnerability. Disasters can be reduced by applying relevant building standards to protect critical infrastructure, such as schools, hospitals and homes. Vulnerable buildings can be retrofitted to a higher degree of safety. Protecting precious ecosystems, such as coral reefs and mangrove forests, allow them to act as natural storm barriers. Effective insurance and micro- finance initiatives can help to transfer risks and provide additional resources. Building Resilience Protects Communities Unsafe buildings and the lack or non-enforcement of building codes often cause more deaths than natural hazards themselves.

Priority to be prepared and ready to Act: Strengthen disaster preparedness for effective response at all levels. Being prepared, including conducting risk assessments, before investing in development at all levels of society will enable people to become more resilient to natural hazards. Preparedness involves many types of activities, including: The development and regular testing of contingency plans; The establishment of emergency funds to support preparedness, response and recovery activities; The development of coordinated regional approaches for effective disaster response; and, Continuous dialogue between response agencies,

planners and policy-makers, and development organizations. Regular disaster preparedness exercises, including evacuation drills, also are key to ensuring rapid and effective disaster response. Effective preparedness plans and organization also help to cope with the many small and medium-sized disasters that repeatedly occur in so many communities. Natural hazards cannot be prevented, but it is possible to reduce their impacts by reducing the vulnerability of people and their livelihoods.

Handout 3: Sendai Framework for Action (2015-2030)

MAKING THE DIFFERENCE FOR POVERTY, HEALTH AND RESILIENCE

The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) is the first major agreement of the post-2015 development agenda, with seven targets and four priorities for action. It was endorsed by the UN General Assembly following the 2015 Third UN World Conference on Disaster Risk Reduction (WCDRR).

Weblink: https://www.unisdr.org/we/coordinate/sendai-framework

The Sendai Framework is a 15-year, voluntary, non-binding agreement which recognizes that the State has the primary role to reduce disaster risk but that responsibility should be shared with other stakeholders including local government, the private sector and other stakeholders. It aims for the following outcome:

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters. It is the outcome of stakeholder consultations initiated in March 2012 and inter-governmental negotiations held from July 2014 to March 2015, which were supported by the UNISDR upon the request of the UN General Assembly. UNISDR has been tasked to support the implementation, follow-up and review of the Sendai Framework.

The Seven Global Targets

a) Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality rate in the decade 2020-2030 compared to the period 2005-2015.

b) Substantially reduce the number of affected people globally by 2030, aiming to lower average global figure per 100,000 in the decade 2020 -2030 compared to the period2005-2015.

c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.

d) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by2030.

e) Substantially increase the number of countries with national and local disaster risk reduction strategies by2020.

f) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this Framework by2030.

g) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by2030.

The Four Priorities for Action

Priority 1. Understanding disaster risk

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 used for risk assessment, prevention, mitigation, preparedness and response.

Priority 2. Strengthening disaster risk governance to manage disaster risk

Disaster risk governance at the national, regional and global levels is very important for prevention, mitigation, preparedness, response, recovery, and rehabilitation. It fosters collaboration and partnership.

Priority 3. Investing in disaster risk reduction for resilience

Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment.

Priority 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction

The growth of disaster risk means there is a need to strengthen disaster preparedness for response, take action in anticipation of events, and ensure capacities are in place for effective response and recovery at all levels. The recovery, rehabilitation and reconstruction phase is a critical opportunity to build back better, including through integrating disaster risk reduction into development measures.

Handout 4: Sustainable Development Goals (SDGs)



Handout 5: Legislative and Policy Framework for Disaster Management in India: An Overview

Legal framework constitutes the foundational pivot around which different aspects of an activity are interwoven. It is probably for this reason that in constituting modern democratic political systems, it has been found essential to ordain that on the basis of a written Constitution. The issues and activities that could not find place in the scheme of a written Constitution, for obvious reasons, have been provided a sound legal basis by enacting a framework law on the subject. In India, one such issue has been the management of disasters. Despite being one of the most disaster prone countries in the world, the subject of disaster management could not find a place in the Constitution of India for reasons explained later in the paper. In fact, for a fairly long period of time, disasters, both natural and manmade, had been found to be managed in the classical colonial mode of trial and error resulting into untold miseries for the people and massive loss of lives and properties. The lurking dangers of climate change and its colossal impact on the occurrence of natural disasters prompted the international community to go for a recasting of the disaster management system in all parts of the world. In such an overhaul of the disaster management systems, central place was afforded to the provision of a sound legal framework. Interestingly, for obvious reasons, management of successive devastating disasters, till recently, has predominantly been based on discretionary trial and error approach of disaster managers in the absence of any specific constitutional stipulation or dedicated statutory enactment on the subject. In other words, owing to lack of categorical constitutional-legal stipulations, the issue of disaster management was conjecturally decided on the basis of its operational dynamics. Thus, for a long time, disaster management was supposed to fall within the exclusive legislative competence of the states with the central government having no or very limited say in the matter.

Contradictory, policies and followed haphazard approaches on managing disasters despite commonality of causes and impacts of such disasters on the lives and assets of the people. Moreover, quite a large number of states thought it fit to continue with the relief-centric colonial policy without any innovation or improvisation in the policy of disaster management. In these circumstances, a subject of national importance with far reaching implications for the life and livelihood of the people, on the one hand, and sustainable economic development of the country, on the other, apparently fell to extreme apathy of the central government, and the states relegated the subject to utter insignificance presumably due to lack of any political mileage being drawn from it. The only avenue where states could not do without involvement of the central

government has been financing of disaster management operations for which centre has been providing both plan as well as non-plan grants to states from time to time. But on other aspects of management of disasters, role of the central government had been bare minimum despite the colossal magnitude of a disaster or the inability of a state government to manage such disasters efficiently and effectively.

Handout 6: FAQs for DM

Frequently Asked Questions (FAQs) from Ministries on Disaster Management Plan:

S.No.	Frequently Asked Questions	Answers
1	What is a Disaster Management Plan in the context of a Ministry / Department? Why should our Ministry / Department prepare DM Plan?	A Disaster Management Plan of a Ministry / Department is a comprehensive plan covering all the 4 phases of disaster management cycle such as prevention, mitigation, preparedness, response (search & rescue, relief and reconstruction), which will spell out the actions to be taken by the Ministry / Department. It has been clearly states in the Disaster Management Act, 2005. **As per Section 37 of the DM Act 2005** (1) Every Ministry or Department of Government of India shall- • (a) prepare a disaster management plan specifying the following particulars, namely:- — (i) the measures to be taken by it for **prevention and mitigation** of disasters in accordance with the **National Plan**; — (ii) the specifications regarding **integration of mitigation measures in its development plans** in accordance with the guidelines of the National Authority and the National Executive Committee; — (iii) its roles and responsibilities in relation to **preparedness and capacity building** to deal with any threatening disaster situation or disaster; — (iv) its roles and responsibilities in regard to **promptly and effectively responding** to any threatening disaster situation or disaster; — (v) the **present status** of its preparedness to perform the roles and responsibilities specified in cub-clauses (iii) and (iv); (vi) the **measures required** to be taken in order to enable it to perform its responsibilities specified in sub-clauses (iii) and (iv);
2	Is it mandatory to have a DM Plan by a Ministry / Department? What is the legal provision?	Yes, As per sec – 37 (1) (a) of DM Act, 2005, every Ministry or Department of the Government of India shall prepare a Disaster Management Plan

S.No.	Frequently Asked Questions	Answers
3	Which Ministry / Department is required to make disaster management plans?	As per sec – 37 (1) (a) of DM Act, 2005, every Ministry or Department of the Government of India shall prepare a Disaster Management Plan
4	What is the role of nodal Ministries? What sort of plan should they prepare?	In addition to their Departmental DM Plan, they have to develop a Plan to address how to deal with disaster for which it is designated as nodal Ministry and prepare a holistic plan for that particular disaster/ disasters.
5	Who will approve the plans prepared by Ministries / Departments?	As per sec – 37 (1) (c) of DM Act, 2005, every Ministry / Department of the Government of India shall forward a copy of its Disaster Management Plan to NDMA for its approval
6	Who will approve DM Plan of offices and units under the control of a Ministry / Department?	The DM Plans of the offices and units under the control of a Ministry / Department shall be approved by respective Ministry /Department, by ensuring that it is in consonance with the Disaster Management Plan of the concerned Ministry.
7	How to have horizontal and vertical linkage with the plan of other Ministries / State Governments?	Disaster Management is a multi- dimensional, multi-level and multi- stakeholder issue and hence it would require horizontal and vertical linkages with all concerned stakeholders and also coordination with state governments for effective implementation of the plan. Horizontal linkage implies linkages with other Ministries and Departments of Government of India or with other agencies for early warning, response etc. Vertical linkage is meant to have up and down linkages with concerned Ministries/Departments/Agencies. The Ministries/Departments should also have linkages with concerned departments in the State Government as well as their own offices/units/PSUs in States and Districts for the purpose of effective disaster management.
8	How should Plan implementation be monitored?	The Act mandates that every Ministry and Department of the Government of India and every state must prepare a DMP in accordance with the NDMP. Respective DM authorities must regularly review and update their DM plans. Central ministries and state governments will integrate DRR into their development policy, planning and programming at all levels. They must adopt a holistic approach and build multi- stakeholder partnerships at all levels, as appropriate, for the implementation of the DM plans. Depending on its nature, different components of the NDMP will be implemented within short, medium and long-term timeframes ending in 2030, with the actions under these timeframes often running concurrently and not sequentially. In a broad sense, the approach described in the NDMP applies to all those working for disaster risk reduction in the country, including Ministries / Departments. (*for more details refer to section 1.15 of NDMP 2019*)

S.No.	Frequently Asked Questions	Answers
9	Whose responsibility is it to monitor the implementation of the Plan from Central Government?	As per Section 37 (2) (b) Every Ministry or Department of the Government of India furnish a **status report regarding the implementation of the plan** referred to in clause (a) of sub-section (1) to the National Authority as and when required by it. Above all Central Government Ministries / Departments is the National Executive Committee, which shall monitor the implementation of the National Plan and the plans prepared by the Ministries or Departments of the Government of India.
10	How often the Plan be revised?	As per sec – 37 (1) (b) of DM Act, 2005, every Ministry / Department of the Government of India shall review and update its Disaster Management Plan annually.
11	In cases where Ministry building is maintained by CPWD and they take care of the building, is it required for Ministry / Department to have a DMP in such cases?	Yes, the DM Plan is not just about the structural safety of the building. The DM Plan of a Ministry/Department should include safety of people, property and information and also to ensure business continuity during a disaster. The preparation of the DM Plan can be undertaken based on the functions of the Ministry / Department and roles and responsibilities assigned to it as per the provisions of the Act, NDMP 2019 and different national guidelines brought out by NDMA.
12	If a Ministry deals with issues not directly related to disaster management, e.g. personnel issues (pension matters etc.), then in such cases is it required for Ministry / Department to have a DMP?	Yes, the DM Plan of a Ministry/Department should include safety of people, property and information and also to ensure business continuity during a disaster. Based on the functions of the department, it can go for mainstreaming of disaster risk reduction in its programmes, plans and policies.
13	Is Crisis Management Plan same as DMP? Should a separate Crisis Management Plan and a Disaster Management Plan be prepared? What is the rationale?	No. Crisis management plan is a plan for responding to an identified crisis and its plans how to manage a crisis when it occurs, whereas a Disaster Management Plan includes gamut of activities as per the DM Act, the NDMP and various national guidelines issued by NDMA. Crisis Management Plan basically deals with response, whereas Disaster Management Plan is a holistic one including preventive strategies.
14	Is Safety Plan same as DMP?	No. Safety Plan addresses only one aspect of safety from a particular disaster, which is a pre-disaster preparedness. Disaster Management Plan deals with all disasters inall phases of disaster management cycle.
15	Do sensitive / high security Ministries also need a DMP? What issues need to be addressed? E.g. Ministry of Parliamentary Affairs, Defense Ministry etc	Yes, As per the DM Act, every Ministry/Department shall prepare its DM Plan. Sensitive / High Security Ministries may not display the Plan on public domain.
16	If the Rules of Business don't mandate for any disaster related intervention, then in such cases, is Ministry / Department required to prepare DMP?	It should be noted that the Allocation of Business (Rules), 1961 indicate which subjects are to be dealt with by which Ministry / Department. Preparation of Disaster Management Plan of Ministry / Department is a statutory duty of the Ministry / Department as mandated by the Disaster Management Act, 2005. Therefore, the first step in preparation of the Disaster Management Plan of the Ministry / Department can be to scruitinise all the functions allocated to it by the GoI (AoB) Rules, 1961. Therefore, there is no conflict.

S.No.	Frequently Asked Questions	Answers
17	If a Ministry / Department is not involved in development/ infrastructure related schemes/ programmes, then in such cases, is Ministry / Department required to prepare DMP?	Yes, the Disaster Management Plan should be prepared on the basis of the functions of the Ministry / Department and roles and responsibilities assigned to it, as per the provisions of the Act, NDMP 2019 and different national guidelines brought out by NDMA.
18	What are the financial implications of a DM Plan? Where from funds can be arranged for programmes and activities provided in a DMP?	A plan and disaster management cannot be successful without suitable budgetary provisions. Budgetary provisions should be made for different activities and for different phases of disaster management. While mainstreaming DRR in the plans and programmes of the Ministry/Department, appropriate financial provisions should be made. In order to develop resilience in projects and programmes, additional budgetary provisions may be required. As per Section 36 (d) of the DM Act, it shall be the responsibility of every Ministry or Department of the Government of India to allocate funds for measures for prevention of disaster, mitigation, capacity building and preparedness. As per Section 37 (2) (a) - Every Ministry or Department of the Government of India shall make, while preparing disaster management plan under clause (a) of sub-section (1), provisions for financing the activities specified therein.
19	What are basic components of a DMP? How to develop DMP?	The Disaster Management Plan of a Ministry / Department should be prepared in two parts. Part-I National Component / Part -II Contingency Plan for the Ministry/Dept. Part – I should include – Preliminaries, Hazard, Risk, Vulnerability and Capacity Analysis (HRVCA), Hazard Specific Prevention and Mitigation Measures, Mainstreaming. Inclusiveness, Coherence of Disaster Risk Management across Resilient Development and Climate Change Action, Capacity Development and Communication, Coordination – Horizontal and Vertical Linkages, Preparedness and Response, Recovery and Reconstructions, Budgetary Provisions and Plan Management etc. Part – II is about Ministry's / Department's own Disaster Management Plan comprising of Institutional Arrangements for Response/ Incident Command System, Prevention and Mitigation of Disasters, Preparedness, Mitigation, Ensuring Business Continuity of the Ministry/ Dept., Monitoring, Recovery etc. (For more details, please refer to the template for preparation of DM Plan by Ministry / Department, shared by NDMA)
20	What expertise is needed for preparation of DMP?	The person / team responsible for development of Disaster Management Plan of the Ministry / Department should have good understanding of roles and functions of the Ministry / Department, its vertical and horizontal linkages for the purpose of disaster management and risk reduction, Acts and Provisions in the DM Act 2005, NDMP 2019 and national guidelines issued by NDMA. The concerned person team should have understanding of all phases of disaster management. For

S.No.	Frequently Asked Questions	Answers
		Ministries and Departments of technical nature they should have understanding of existing standards, for disaster resilience such as BIS codes, risk and vulnerabilities concerning the Ministry / Department and also about various International frameworks.
21	What is mainstreaming ofdisaster risk reduction and how can this be achieved?	Development without adequate incorporation of DRR could worsen existing risks and has the likelihood of introducing new risks, increasing the negative impact of potential disasters. Extensive and sound integration of DRR into development can enhance disaster resilience, reduce losses and hasten the progress towards development goals. Thus, it is desirable thatthe development initiatives and DRR are dealt with concurrently in a seamless manner into all the relevant policies, planning and implementation. The climate change impacts act as risk multipliers worsening uncertainties associated with almost every hydro-meteorological hazard. Therefore, all development initiatives must factor in the likelihood of greater risks and increase in climate change-induced vulnerabilities. This requires incorporation of risk management and climate adaptation as an intrinsic feature of all developmental efforts, especially in the areas where hazards are known to be high. Such an approach, which internalises DRR within development in a closely integrated manner is called mainstreaming DRR. It means radically expanding and enhancing DRR so that it becomes a normal practice, fully institutionalised within each agency's regular planning and programmes in addition to the preparedness for disaster response.) (*For more details, refer to chapter on Mainstreaming in NDMP 2019*)
22	If I have disaster management concerns, does it mean that I do not take a decision on L-1 basis but decide a party that may give me more expensive solution?	In all tender documents, DRR components should be included in the design and standards and should be specified in the bid itself. The bid evaluation could be a two stage process, i.e., Technical Bid Evaluation followed by Financial Bid Evaluation of Technically Responsive Bids. This would result in discovery of the Lowest Responsive Evaluated Bid (L – 1). In such a case whosoever is L1 will also need to comply with the terms and conditions of the bid to address DRR issues. Therefore, there is no question of violating any principle of financial propriety. Secondly, small sums invested today in disaster risk reduction and disaster resilient infrastructure will save bigger losses that may occur due to disasters. Therefore, having a concern for DRR makes abundant financial sense.
23	While preparing the DM Plan for my Ministry, should I confine to the assets of my Ministry / Department?	The Disaster Management Plan is not limited only to the safety of assets of the Ministry / Department. We have to keep in mind that the people of India should be the main focus of our disaster management concerns. The DM Plan should be prepared according to the functions and roles of the Ministry / Department as per the Rule of Business, DM Act, NDMP 2019 and various national guidelines issued by NDMA

S.No.	Frequently Asked Questions	Answers
24	How can my Ministry be responsible to work out the operational details of the work of a private party who may have a service level agreement with my Ministry?	The disaster resilience and response capabilities should be inbuilt in the service level agreement with the private parties. If required, such service agreements should be amended by giving appropriate notice to the concessionaires / business partners.
25	Which are the nodal Ministries for management / mitigation of different disasters.	A list of nodal Ministries for management / mitigation of different disasters has been provided in Table 1-3 of the National Disaster Management Plan (NDMP), which can be accessed at https://ndma.gov.in/images/policyplan/dmplan/ndmp-2019.pdf

Handout 7: Emergency Support Functions

ESF -1

- Function- communication
- Nodal Agency- MTNL
- Supporting agencies- NIC, Police/ Revenue, Wireless, HAM / Private telecom/ mobile operations

ESF -2

- Function- Evacuation
- Nodal Agency- DC
- Supporting agencies- Police, DFS, Civil Defense, NCC, Army

ESF -3

- Function- Search & Rescue
- Nodal Agency- DFS
- Supporting agencies- Police, civil defense, NCC, Army, Dept. of Health

ESF -4

- Function- Law & Order
- Nodal Agency- Police
- Supporting agencies- Home Guard, civil Defense, Army, CPMF

ESF -5

- Function- Medical Response & Trauma Counseling
- Nodal Agency- CDMO
- Supporting agencies- CATS, DHS, Indian Red Cross, Civil Defense, NSS

ESF -6

- Function- Water supply
- Nodal Agency- DJB
- Supporting agencies- MCD, CGWC, CWC, Irrigation and Flood Control, DJB

ESF -7

- Function- Relief

- Nodal Agency- F & CS
- Supporting agencies- Department of Revenue, Indian Red Cross, NGOs

ESF -8

- Function- Debris and Road Clearance
- Nodal Agency- MCD
- Supporting agencies- PWD, DJB, DDA, DMRC

ESF -9

- Function- Help Line and Warning Dissemination
- Nodal Agency- DC
- Supporting agencies- NIC, NGO Reps.

ESF -10

- Function- Electricity
- Nodal Agency- BSES
- Supporting agencies- TRANSCO, DERC

ESF -11

- Function- Transport
- Nodal Agency- Sec. Transport/DTC
- Supporting agencies- DMRC, Northern Railways, Civil Aviation, PWD, MCD

Handout 8: Salient Features of the National Disaster Management Plan

https://archive.pib.gov.in/documents/rlink/2016/jun/p20166201.pdf

- The plan covers all phases of disaster management: prevention, mitigation, response and recovery.
- For each hazard, the approach used in this national plan incorporates the four priorities enunciated in the Sendai Framework into the planning framework for Disaster Risk Reduction under the five Thematic Areas for Actions:
  - Understanding Risk
  - Inter-Agency Coordination
  - Investing in DRR – Structural Measures
  - Investing in DRR – Non-Structural Measures
  - Capacity Development
- The Response part of the Plan has identified eighteen broad activities which have been arranged into a matrix to be served as a ready reckoner:
  - Early Warning, Maps, Satellite inputs, Information Dissemination
  - Evacuation of People and Animals
  - Search and Rescue of People and Animals
  - Medical Care
  - Drinking Water/ Dewatering Pumps/ Sanitation Facilities/ Public Health
  - Food & Essential Supplies
  - Communication
  - Housing and Temporary Shelters
  - Power
  - Fuel
  - Transportation
  - Relief Logistics and Supply Chain Management
  - Disposal of Animal Carcasses
  - Fodder for livestock in scarcity-hit areas
  - Rehabilitation and Ensuring Safety of Livestock and other Animals, Veterinary Care

- ❖ Data Collection and Management
- ❖ Relief Employment
- ❖ Media Relations

- The Plan has also incorporated a Chapter on Strengthening Disaster Risk Governance. The generalized responsibility matrix given in this section summarizes the themes for strengthening Disaster Risk Governance and specifies agencies at the Centre and State with their respective roles. The matrix has six thematic areas in which Central and State Governments have to take actions to strengthen disaster risk governance:
  - ❖ Mainstream and integrate DRR and Institutional Strengthening
  - ❖ Capacity Development
  - ❖ Promote Participatory Approaches
  - ❖ Work with Elected Representatives
  - ❖ Grievance Redress Mechanism
  - ❖ Promote Quality Standards, Certifications, and Awards for Disaster Risk Management
- It provides for horizontal and vertical integration among all the agencies and departments of the Government. The plan also spells out the roles and responsibilities of all levels of Government right up to Panchayat and Urban Local Body level in a matrix format. The plan has a regional approach, which will be beneficial not only for disaster management but also for development planning.
- It is designed in such a way that it can be implemented in a scalable manner in all phases of disaster management. It also identifies major activities such as early warning, information dissemination, medical care, fuel, transportation, search and rescue, evacuation, etc. to serve as a checklist for agencies responding to a disaster. It also provides a generalized framework for recovery and offers flexibility to assess a situation and build back better.
- To prepare communities to cope with disasters, it emphasizes on a greater need for Information, Education and Communication activities.

Handout 9: Status of District/ UTs Disaster Management Plans

S.No	States Name	Capital	Total Districts	DDMP Status Availability	DDMP Link
1	Andhra Pradesh	Hyderabad (Proposed Capital Amaravati)	13	13	https://apsdma.ap.gov.in/district_disaster_management_plan
2	Arunachal Pradesh	Itanagar	26	19	https://sdma-arunachal.in/district-wise-activities/
3	Assam	Dispur	33	27	http://sdmassam.nic.in/dmp.html#ddmp
4	Bihar	Patna	38	1	http://bsdma.org/images/global/Madhubani%20Vol-I.pdf http://bsdma.org/images/global/Madhubani%20Vol-II.pdf
5	Chhattisgarh	Raipur	27	N/A	http://sdma.cg.gov.in/Durg%20English.pdf
6	Goa	Panaji	2	2	https://sdma.goa.gov.in/sites/default/files/District%20Disaster%20Management%20Plan%20%28North%29_0.pdf (North) https://sdma.goa.gov.in/sites/default/files/District%20Disaster%20Management%20Plan.pdf (South)
7	Gujarat	Gandhinagar	33	33	http://www.gsdma.org/Content/ddmp-4246
8	Haryana	Chandigarh	22	22	http://www.hdma.gov.in/en/projects-programsdistrict-ddmp/district-ddmp-english
9	Himachal Pradesh	Shimla	12	12	https://hpsdma.nic.in/Index1.aspx?lid=114&lsid=117&pid=14&lev=2&langid=1
10	Jharkhand	Ranchi	24	-	-
11	Karnataka	Bengaluru (formerly Bangalore)	30	27	https://ksdma.karnataka.gov.in/info-2/Plans/District+Disaster+Management+Plan/en
12	Kerala	Thiruvanantha-puram	14	14	https://sdma.kerala.gov.in/ddmp/
13	Madhya Pradesh	Bhopal	51	-	-

S.No	States Name	Capital	Total Districts	DDMP Status Availability	DDMP Link
14	Maharashtra	Mumbai	36	12	https://msdma.maharashtra.gov.in/District-Plan
15	Manipur	Imphal	16	-	Available for East and West Imphal
16	Meghalaya	Shillong	11	11	http://msdma.gov.in/ddm-plans.html
17	Mizoram	Aizawl	11	8	https://dmr.mizoram.gov.in/page/mizoram-state-disaster-management-plan-2020
18	Nagaland	Kohima	11	6	https://nsdma.nagaland.gov.in/district
19	Odisha	Bhubaneswar	30	30	https://www.osdma.org/plan-and-policy/district-disaster-management-plan/#gsc.tab=0
20	Punjab	Chandigarh	22	10	https://revenue.punjab.gov.in/?q=disaster-management-plans
21	Rajasthan	Jaipur	33	33	http://www.dmrelief.rajasthan.gov.in/index.php/plans/district-dm-plans
22	Sikkim	Gangtok	4	4	http://www.ssdma.nic.in/Home/ContentFor?MenuID=14&ContentFor=Content_SubMenu
23	Tamil Nadu	Chennai	37	-	https://tnsdma.tn.gov.in/pages/view/District-Disaster-Management-Authority
24	Telangana	Hyderabad	31	-	-
25	Tripura	Agartala	8	8	https://tdma.tripura.gov.in/disaster-management-plans?page=1
26	Uttar Pradesh	Lucknow	75	9	http://upsdma.up.nic.in/
27	Uttarakhand	Dehradun (Winter) Gairsain (Summer)	13	11	http://usdma.uk.gov.in/
28	West Bengal	Kolkata	23	-	http://wbdmd.gov.in/Pages/annualreport.aspx

S.No.	Union Territories Names	Capital	Total Dist-rict(s)	DMPs
1.	Andaman and Nicobar Islands	Port Blair	3	http://ddm.and.nic.in/Files/Disaster_Mgmt_Plan_2016_New.pdf
2.	Chandigarh	Chandigarh	1	https://cdn.s3waas.gov.in/s303afdbd66e7929b125f8597834fa83a4/uploads/2018/07/2018072044.pdf
3.	Dadra & Nagar Haveli and Daman & Diu	Daman	3	https://cdn.s3waas.gov.in/s35878a7ab84fb43402106c575658472fa/uploads/2020/08/2020081097.pdf
4.	Delhi	New Delhi	11	http://ddma.delhigovt.nic.in/wps/wcm/connect/8d935d004829d5ec8becebae1ccb7dea/Delhi+Draft+State+Plan+09042015+Part+I.pdf?MOD=AJPERES&lmod=-1591939727
5.	Jammu and Kashmir	Srinagar (Summer) Jammu (Winter)	20	http://jkfcr.nic.in/pdf/Master_Plan_Version_IV.pdf
6.	Laksha-dweep	Kavaratti	11	https://ldma.utl.gov.in/downloads/Lakshadweep-Disaster-Management-Plan.pdf
7.	Puducherry	Pondicherry	4	https://cdn.s3waas.gov.in/s3b4288d9c0ec0a1841b3b3728321e7088/uploads/2018/04/2018040519.pdf
8.	Ladakh	Leh	2	https://cdn.s3waas.gov.in/s3291597a100aadd814d197af4f4bab3a7/uploads/2018/10/2018100483.pdf

Annexure: Dos' and Don'ts' for Various Hazards/Disasters

COLDWAVE

Before & During

- Keep ready the emergency kit with basic and specific medicines, heaters, wood for fireplace and adequate warm clothings.
- Buy low-wattage electric heaters that you can leave on overnight to keep rooms above freezing.
- Listen to local Radio Station for critical information about the weather.
- Stay indoors; Minimize travel during peak extreme cold hours (very early in the morning and late evenings).
- Keep dry. Change wet clothing frequently to prevent loss of body heat.
- Watch for signs of frostbite like loss of feeling and white/ pale appearance in fingers, toes, ear lobes, and the tip of the nose.
- Maintain proper ventilation when kerosene heaters or coal oven to avoid build-up of toxic fumes.
- Take regular hot drinks.

After

- Go to a designated public shelter if your home loses power supply or heat during periods of extreme cold.
- Continue to protect yourself from frostbite and hypothermia by wearing warm, loose- fitting, clothing in several layers.
- If you live in an avalanche area and an avalanche warning is issued, stay inside unless told to evacuate.

COLD-WEATHER CAR KIT

(Shovel, blanket, coats, flashlight, batteries, high-energy food, water, other essentials)

THUNDER AND LIGHTNING

Before & During

- If you hear thunder, you may be close to be struck by lightning.
- Keep monitoring local media for updates and warning instructions.

- Keep ready an Emergency/ Survival Kit with important medication.
- Postpone outdoor activities. Stay indoors. Ensure the same for children and animals.
- Remember, rubber-soled shoes and rubber tires provide NO protection from lightning.
- Unplug any electronic equipment well before the storm arrives. Use your battery-operated Radio for updates from local officials.
- Avoid contact with electrical equipment or cords. Unplug appliances and other electrical items, metal fences, and turn off air conditioners. Keep away from utility lines. Do not go close to TV mast, pipes or vertical metal fixtures.
- Do not lie on concrete floors and do not lean against concrete walls.
- If outdoors, get off bicycles, motorcycles of other vehicles. Look for a safe shelter
- Do not take shelter under trees, as they conduct electricity.
- Remove tree timber which may cause a flying accident.
- Livestock's may gather under trees during thunderstorms, which can affect them. Help move animals into a closed shelter.
- Avoid bathing and stay away from running water as lightning can travel along metal pipes.
- If outside, do not lie flat on ground, crouch down with feet together and head down to make yourself a smaller target.
- As far possible, find shelter in low lying area and make sure that the spot chosen does not get flooded. Be alert for flashfloods.
- If boating or swimming, get to safe land/ shelter quickly.
- During a storm, remain in your vehicle until help arrives or the storm passes.
- If in a vehicle during a storm, remain inside, without touching metal from inside, keep windows up and park vehicle away from trees and power lines.

After

- Continue to listen to local radio and television stations for updated information or instructions, as access to roads or some parts of the community may be blocked.
- Help people who may require special assistance, such as infants, children and the elderly.
- Stay away from drowned power lines and report them immediately.
- If possible, give First-aid to the person struck by lightning, take to nearest hospital.

- Remember, person struck with lightning carry NO electrical charge and can be handled safely.
- Victims of lightning strike may suffer varying degrees of burn, look for injury marks and treat accordingly.

If someone is struck by lightning

- A bolt of lightning can be fatal if it strikes someone on the head and then travels down to the ground. It can also cause severe burns, broken bones, cuts, and unconsciousness; and it can set clothing on fire.
- Do not touch someone who has been struck by lightning if he or she is very wet or in water: you could be electrocuted because the electrical discharge is still within his or her body.
- Dial Ambulance at 102 immediately, even if the person appears to be unharmed.
- If the person's clothing is on fire, follow the instructions on p16.
- Treat the burns, give first aid.
- If the person is not breathing, start rescue breathing.

EPIDEMICS

Before & During

- Store drinking water and food to last for few days. Use boiled or filtered water to avoid contamination.
- Periodically check your regular prescription drugs to ensure a continuous supply in your home.
- Keep a stock of non-prescribed basic medicines such as pain relievers, stomach remedies, cough and cold medicines, fever, fluids with electrolytes, and vitamins, sanitary pads, baby food items etc.
- Volunteer with local groups to prepare and assist with emergency response, If possible.
- Keep your surrounding clean and do not let the water be stagnant in neighborhood.

After

- Avoid close contact with people who are sick. If possible, stay at home when you are sick. Do not share usable items. You will help prevent others from catching your illness.
- When sick, keep your distance from others to protect them from catching infections.

- Cover your mouth and nose with a tissue when coughing or sneezing.
- Washing your hands (with soaps if possible) often will help protect you from germs.
- Avoid touching your eyes, nose or mouth to prevent spread of germs.

EARTHQUAKE

Before & During

- Make new constructions earthquake resistant in consultation of professional structural engineer, if possible.
- Prepare a family disaster plan including
  - ❖ preparation of emergency kit which will make you self-sufficient for a minimum of three days with adequate supply of drinking water, dry food items, stock of basic medicines, sanitary pads, baby food items etc.
  - ❖ Identification of few safe family meeting places; pick easy to identify, open and accessible places that you can easily reach.
  - ❖ Conduct regular Mock Drills for school children.
- Falling objects must be given additional fixing so that they don't fall while shaking and cause harm.
- During an earthquake stay calm; if inside, Stay inside. "DROP, COVER and HOLD! Drop under firm furniture. Cover as much of your head and upper body as you can. Hold onto any secure furniture. Move to an inside wall and sit with your back to the wall, bring your knees to your chest and cover your head. Stay away from mirror and windows. Do not exit the building during the shaking. Do not use lift.
- If outdoors, move to an open area away from all structure, especially building, bridges, trees and overhead power lines.

After

- Move cautiously, and check for unstable objects and other hazards above and around you.
- Check yourself for injuries. Help those in need.
- Check all power connections at home/ office before switching them ON.
- BEWARE: chances of Short circuits might happen.
- Stay out of damaged buildings.
- Anticipate aftershocks, especially if the shaking lasted longer than two minutes.

- Listen to the radio or watch local TV for emergency information and additional safety instructions.

DROUGHT

- Never waste water, use it to water your indoor plants or garden especially in summers.
- Repair dripping taps by replacing washers.
- Check all plumbing for leaks and get them repaired.
- Choose appliances that are more energy and water efficient.
- Plant drought- tolerant grasses, shrubs and trees (plants that thrive on less water).
- Install irrigation devices that are most water efficient for each use, such as micro and drip irrigation.
- Consider rainwater harvesting wherever practical.
- Avoid flushing the toilet unnecessarily.
- Avoid letting the water run while brushing your teeth, washing your face or shaving etc.
- Use buckets instead of showers while bathing.

HEAT WAVE

Before

- Install temporary window reflectors such as aluminum foil- covered cardboard so as to reflect heat back outside. This will help keep the rooms pleasant.
- Cover windows that receive morning or afternoon sun with drapes, shades.
- Listen to local weather forecasts and stay aware of temperature changes.
- Know those in your neighborhood who are elderly, young, sick or overweight. They are more likely to become victims of excessive heat and may need help.
- Get trained in first aid to learn how to treat heat- related emergencies.
- Plant trees for shades.

During

- Never leave children or pets alone in closed vehicles or under direct sunlight for long.
- Stay indoors as much as possible and limit your exposure to the sun.
- Stay on the lowest floor out of the sunshine if air conditioning is not available.

- Eat well-balanced, light and regular meals.
- Drink plenty of water; even if you do not feel thirsty. Keep yourself hydrated.
- Persons with epilepsy, heart, kidney, or liver disease; on fluid- restricted diets; or have a problem with fluid retention should consult a doctor before increasing liquid intake.
- Protect face and head by wearing a hat or cloth.

FLOODS

Before & During

- All your family members should know the safe route to nearest shelter/raised shelters.
- Tune to your local radio/TV for warnings and advice.
- Have an emergency kit ready with basic medicines and sanitary pads, baby food items, important documents etc.
- Keep dry food, drinking water and clothes ready.
- Drink preferably boiled water. Keep your food covered, don't take heavy meals.
- Use sandbags to seal entry points around doors and vents. Also seal windows if the water is likely to rise that high.
- Do not let children and pregnant woman remain empty stomach.
- Be careful of snake bites which are common in post floods.

After

- Pack warm clothing, essential medication, valuables, personal papers, etc. in waterproof bags, to be taken with your emergency kit.
- Move to high rise floor, raise furniture, clothing and valuables onto beds, tables etc. from getting wet.
- Turn off the main power supply. Do not use electrical appliances, which have been in floodwater.
- Do not get into water of unknown depth and current.
- Do not allow children to play in, or near floodwaters.

FOR ROAD SAFETY:

- While driving, exit the roads if flood water is above half tyre height. If this happens, start reversing or change the route, whichever possible.

- Drive in 1 gear and keep reviving the engine to avoid water from entering exhaust pipe.
- Turn on headlights so that you can easily be spotted.
- Car electrical systems may shut down, if the car stalls and engine doesn't restart, leave the vehicle or you may get trapped.
- For cars which have single button to disengage all locks, open a window or sunroof to escape.
- Keep a hammer close to drivers' seat or use the headrests which have metallic tongs at bottom to break open any window during emergency.

FOREST FIRE

- Do not smoke near thick vegetation, do not leave a lighted cigarette/ bidi in dry vegetation areas;
- Do not leave any open fire in forest area after use.
- Lightning in places of dry vegetation causes fires, create a buffer zone to manage such fires, if possible, else alert forest officials and seek help.
- Try to put the fire out by digging or circle around it by water, if not possible, call a Fire brigade.
- Move farm animals & movable goods to safer places.
- During fire, listen regularly to Radio for advance information & obey the instructions cum advice regarding moving to safe locations.
- Teach the causes and harm of fire to your family, friends and others. Make people aware about forest fire safety.
- Do not be scared when a sudden fire occurs in the forest, be calm & encourage others & community to deal patiently.
- After adventure activities, ensure no lighted bon-fire is left.
- One should not leave the burning wood sticks in or near the forest vegetation.
- Don't enter the forest during the fire.
- Discourage community from using slash & burn method for cultivation. This also has severe health impacts as CO_2 levels rise.

LANDSLIDE

Before & During

- Avoid building houses near steep slopes, closes to mountain edges, near drainage ways or along natural erosion valleys.

- Become familiar with land around you. Avoid areas with debris flow.
- In mudflow areas, build channels to direct the flow around buildings.
- Stay alert and awake. Stay calm and do not panic. Stay together.
- Listen for unusual sounds that might indicate moving debris, such as trees cracking or boulders knocking together.
- Move away from the path of a landslide or debris flow as quickly as possible.
- Avoid river valleys and low-lying areas.
- If you are near a stream or channel, be alert for any sudden increase or decrease in water flow and notice whether the water changes from clear to muddy. It is a sign of mudslide/landslide nearby.
- Inform nearest tehsil/ district headquarters.
- Plant tress and mesh the hillocks to protect soil from eroding.

After

- Go to designated public shelter if you have been asked to evacuate.
- Stay away from the slide area as there may be danger of additional slides.
- Check for injured and trapped persons near the slide, without entering the direct slide area. Direct rescuers to their locations.
- Do not move injured person without rendering first aid unless in acute danger state.
- Do not drink contaminated water from rivers, springs, wells etc.

FIRE

Do's

- Get your premises fire audited; check for loose electric connections; don't store combustible material near loose electric wires.
- In case of fire, dial 101 (or the special number for FIRE SERVICE in your area/town).
- If trapped lay down/sit near the floor; curtail entry of smoke into the room; look for exit; breathe through wet cloth; learn atleast two escape routes and ensure they are free from obstacles.
- Remain calm, unplug all electrical appliances. Meet at safe place after exit.
- Keep buckets of water and blankets ready. Keep fire extinguishers and regularly re- fill them.
- If clothes catch fire, STOP DROP and ROLL. Conduct regular drills.

- In case of uncontrolled fire, wrap the victim in a blanket, till the fire ceases.

Don'ts

- Don't burn crackers in crowded, congested places, narrow lanes or inside the house.
- Don't cover crackers with tin containers or glass bottles for extra sound effect.
- Avoid long loose clothes, as they are fast in catching fire.
- Don't dispose lighted cigarette end scarelessly.
- Don't remove burnt clothing (unless it comes off easily).
- Don't apply adhesive dressing on the burnt area.

TSUNAMI

Before & During

- Find out if your home is in a danger area.
- Know the height of your street/ house above sea level and the distance from the coast.
- Coastal areas within 1 mile (1.6 km) of the sea and less than 25 ft (7.5 m) above sea level are most at risk; make an early assessment of the best route to higher ground.
- People living along the coast should consider an earthquake or a strong ground rumbling as a warning signal.
- If a “tsunami watch” turns into a “tsunami warning,” prepare to evacuate your home.
- As the tsunami nears the coast, the waves slow down and increase in height.
- Before the first wave reaches the shore, the sea may be dramatically “moved back” away from the shoreline.
- Remember, Successive waves appear at intervals of 5 to 90 minutes and the first wave is usually not the largest; the following ones cause the most damage.
- Try and climb a raised platform or climb the highest floor of any house or building which you might see.
- Make evacuation plans and a safe route for evacuation. Stay away from the beach.
- Never go down to the beach to watch an approaching storm surge.
- Listen to a radio or television to get the latest information and be ready to evacuate if asked to do so.

- Familiarize yourself with warning signs, such as a sudden change in the level of coastal waters.
- If you hear an official warning, evacuate at once. Return home only after authorities advise it is safe to do so.
- Stay away from any structures that may have been weakened by the earthquake.
- Tsunamis often cause severe floods; make sure that you are prepared to cope.
- Keep your car filled with fuel so that you can drive to safety quickly.
- Help those who need assistance to move to safety.

After

- Stay tuned to battery- operated radio for the latest emergency information.
- Help injured and trapped persons. Provide for first aid.
- Stay away from flooded and damaged areas until officials say it is safe to return.
- Enter your home with caution.
- Use flashlight when entering damaged houses. Check for electrical short circuit and live wires.
- Check food supplies and test drinking water.

CYCLONE

Before & During

- Listen to radio or TV weather reports and alert everyone through a loud speaker or by going home to home.
- Identify safe shelter in your area. These should be cyclone resistant and also find the closest route to reach them. Move domestic animals to safety as well.
- Keep your emergency kit and basic food supply, medicines, torch and batteries etc.
- Doors, windows, roof and walls should be strengthened before the cyclone season through retrofitting and repairing. Store adequate food grains and water in safe places. Check that doors to garden sheds and garages are also secure.
- Keep flashlights, candles, and matches in case of power outages.
- Do not venture into the sea. Stay Indoors and stand below the strongest part of the house if you have not moved to the cyclone shelter.
- Remain indoors until advised that the cyclone has passed away.
- Do not take shelter close to trees because branches may break off or trees may

even be uprooted, and fall on top of you or heavy constructions such as bridges etc.

- During the eye of the storm, move to the other side of your shelter, since the wind will now come from the opposite direction.
- Write each child's name, address, and contact number on a piece of paper and place it in the child's pocket.
- If you are outside, be aware of the dangers of flying objects, falling trees, buildings that may collapse, and damaged power lines.
- If you are in a car, do not try to outdrive a cyclone or heavy winds: if it changes course you will be in danger of being picked up in your vehicle. Remain in the car preferable halting at a safe place.
- Conduct Mock Drills for yourself and the community for evacuation.

After

- After the winds die down, wait for at least 11/2 hours before leaving your shelter.
- Do not go out till officially advised that it is safe. If evacuated, wait till advised to go back.
- Do not use power points until they have been checked.
- Use the recommended route to return to your home. Do not rush.
- Be careful of fallen powers lines, damaged roads and houses, fallen trees.

***Disclaimer:** The google images used in the Module are solely for information dissemination purpose in the larger interest of general public and the document has no commercial interest whatsoever.

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Poster credit*

Master Swagat Suvankar, DAV Public School, Odisha

About the Institute

National Institute of Disaster Management (NIDM) was constituted under an Act of Parliament with a vision to play the role of a premier institute for capacity development in India and the region. The efforts in this direction that began with the formation of the National Centre for Disaster Management (NCDM) in 1995 gained impetus with its redesignation as the National Institute of Disaster Management (NIDM) for training and capacity development. Under the Disaster Management Act 2005, NIDM has been assigned nodal responsibilities for human resource development, capacity building, training, research, documentation and policy advocacy in the field of disaster management.

NIDM is proud to have a multi-disciplinary core team of professionals working in various aspects of disaster management. In its endeavour to facilitate training and capacity development, the Institute has state-of-the-art facilities like class rooms, seminar hall and video-conferencing facilities etc. The Institute has a well-stocked library exclusively on the theme of disaster management and mitigation. The Institute provides training in face-to-face, on-line and self-learning mode as well as satellite based training. In-house and off-campus face-to-face training to the officials of the state governments is provided free of charge including modest boarding and lodging facilities.

NIDM provides Capacity Building support to various National and State level agencies in the field of Disaster Management & Disaster Risk Reduction. The Institute's vision is to create a Disaster Resilient India by building the capacity at all levels for disaster prevention and preparedness.



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