TRAINING MODULE FOR NON- GOVERNMENTAL ORGANISATIONS ON DISASTER RISK MANAGEMENT

Government of India

UNDP India

AN INITIATIVE UNDER THE GOI-UNDP DISASTER RISK MANAGEMENT PROGRAMME

Training Module for Non- Governmental Organisations on Disaster Risk Management

GoI-UNDP

Disaster Risk Management Programme

2002-2007

ABBREVIATION

ATIs: Administrative Training Institute
BIS: Bureau of Indian Standards
CBO: Community Based Organization
CHC: Community Health Center
CII: Confederation of Indian Industries
CRF: Calamity Relief Fund
CRZ: Coastal Regulation Zone
DM: Disaster Management
DRM: Disaster Risk Management
DMTs: Disaster Management Teams
DRR: Disaster Risk Reduction
EOC: Emergency Operation Center
ESF: Emergency Support Function
FAO: Food and Agriculture Organization
GDP: Gross Domestic Product
GoI: Government of India
HPC: High Powered Committee
ICS: Incident Command system
ILO: International Labour Organization
MHA: Ministry of Home Affairs
NCCF: National Calamity Contingency Fund
NDMA: National Disaster Management Authority
NGOs: Non Governmental Organization
PHC: Public Health Center
NIDM: National Institute of Disaster Management
PRA: Participatory Rural Appraisal
PRI: Panchayati Raj Institutions
SAARC: South Asia Association for Regional Cooperation
SHGs: Self Help Groups
SIRD: State Institute of Rural Development
SOPs: Standard Operating Procedures
UNDP: United Nations Development Programme
UNESCO: United Nations Educational, Scientific and Cultural Organization
UNFPA: United Nations Population Fund
UNICEF: United Nations Children's Fund
UNIDO: United Nations Industrial Development Organization
UNIFEM: United Nations Development Fund for Women
UN ISDR: United Nations International Strategy for Disaster Reduction
UNV: United Nations Volunteers
VBO: Voluntary Based Organization
WFP: World Food Programme
WHO: World Health Organization

CONTENTS

FOREWORD

Communities living in areas prone to storms, floods and earthquakes are most vulnerable and the first to suffer from the impact of a disasters that can leave behind a trail of death and destruction. Yet, many devastating effects of natural hazards can be prevented by enhancing the capacity of the communities to respond, as it is these communities who are on the front line when it comes to fending off the immediate impacts of calamities.

The GoI-UNDP DRM Programme is striving to enhance the capacities for disaster preparedness of the communities in 176 multi-hazard prone districts in 17 States. As part of the programme various agencies have imparted specialized training to community members in areas such as survival techniques, first aid, causality management and mock drills.

Civil society organizations, including NGOs, are critical to the sustenance of various community capacity building initiatives. This training module aims at strengthening the capacities of the NGOs working in the area of disaster management to support the community based disaster risk management initiatives.

The module is a result of the effort of field practitioners, partners collaborating in disaster management as well as discussions held on the Un's Solution Exchange knowledge platform. The module is intended to act as 'guidance tool' for NGOs who intend to work with the communities in the area of sustainable risk reduction.

The module was piloted in the States of Tamil Nadu and Uttarakhand and the feedback received from these trainings has been used to revise the initial draft.

We are hopeful that the module will be found useful by NGOs and help them continue supporting the communities in their efforts of being better prepared.

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ACKNOWLEDGMENTS

AGENDA

Training for Non Governmental Organisations (NGOs) on Disaster Risk Reduction (DRR)

Time	Session Number	Content	Method of Delivery	Facilitator
DAY 1				
09.00 09.30		Registration		
09.30 10.15	1	Welcome address and Introduction of the participants		
10.15 10.45		Expectation from the training programme		
10.45 11.00		Tea Break		
11.00 12.15	2	What is Disaster Risk Management		
12.15 13.00	3	Institutional Framework of DM in India		
13.00 13.45		Lunch Break		
13.45 14.45	4	Mainstreaming Disaster Risk Reduction with Development		
14.45 15.45	5	Role of NGOs in DM		
15.45 16.00		Tea Break		
16.00 - 17.00	6	Who are the Stakeholders in DRM		
17.00 17.15	7	Feedback and closing		
DAY 2				
09.15 09.30	8	Recap of Day 1		
9.30 11.30	9	Participatory Learning Appraisal		

11.30 11.45		Tea Break		
11.45 13.15	**10**	Preparation of Community Based DM Plans		
13.15 14.00		Lunch Break		
14.00 14.45	**11**	Film Show		
14.45 16.15	**12**	What is Mock Drill and Simulation Exercise on Mock Drill		
16.15 16.30		Tea Break		
16.30 17.15	**13**	Gender Mainstreaming in the planning process		
17.15 - 17.30	**14**	Feedback and closing		
DAY 3				
09.15 09.30	**15**	Recap of Day 2		
09.30 10.30	**16**	Need and Damage Assessment		
10.30 10.45		Tea Break		
10.45 13.15	**17**	Group Work and Presentation - Identify problems and solutions in post disaster scenario in the following areas: 1. Education 2. Health 3. Livelihood 4. Shelter		
13.15 14.15		Lunch Break		
14.15 15.15	**18**	Development of action plan		
15.15 16.00	**19**	Evaluation and Feedback		
16.00 - 16.15		Tea Break		
16.15 17.00	**20**	Valedictory and Closing		

Training Module for Non Governmental Organisations (NGOs) on DRM

Introduction to the module

Increasingly disasters are posing a threat to the lives and livelihoods of millions of people in India. Droughts, floods, earthquakes, cyclones and landslides have hit the country with grim regularity year after year. Between 1994 and 2003, disasters both natural and human induced disasters have claimed around 68,671 lives and affected an average of 68 million each year in that decade. (Source: Center for Research on the Epidemiology of Disasters (CRED).

With an increase in the number of disasters causing huge loss to life and property, the urgency of developing and imbibing a 'culture of prevention' is of prime importance. This culture harnesses human potential with adequate skill, knowledge and confidence to cope with the severe impacts of various hazards. There has been a paradigm shift in our approach to Disaster Management during the last one decade. The shift is from a relief centric approach to a multi-dimensional endeavour involving diverse scientific, engineering, financial and social processes to adopt a multi-disciplinary and multi- sectoral method. The role of NGOs in this context therefore assumes added significance. Experiences have shown that some of the most successful risk reduction initiatives have involved communities in understanding the hazards of that locality and designing an appropriate response plan. The Community Based Disaster Preparedness and Response Plans transform vulnerable groups into disaster resilient communities. NGOs play a key role in facilitating and supporting the community in the development of Community Based Disaster Management Plans to build it into a disaster resilient unit.

The Purpose and Overview

The main purpose of the training module is to highlight a process of local capacity building for the purpose of risk reduction. It also aims at training NGOs to help the community in development of a contingency plan at their level and enable them to learn to manage disasters and to cope with it effectively.

The audience

The audience of this module includes members of the development sector and people working in the field of Disaster Risk Reduction. The main focus of the target audience is to work with the local communities to reduce their vulnerabilities.

Entry Behaviour

- Education: 10+2 and above
- Experience in Disaster Management: None to little
- Job skills: Capable of carrying out a given work with proper supervision.
- Knowledge: Extensive knowledge on local level vulnerabilities and coping mechanisms.

Number of Days: 3 Days

Implementation Modalities:

This training module can be used by State Institute of Rural Development (SIRD), Administrative Training Institutes (ATIs) and other training institutes. Organizations interested in training their Disaster Risk Management practitioners can also use this module to have a better understanding on the subject. The total number of participants in each training programme could range from 30-40 depending on the resources available. The resource persons for these training programmes can be drawn from trained faculties of State Institutes of Rural Development (SIRDs) and Administrative Training Institutes (ATIs) and experts having experience in Disaster Management. This training module can be implemented as a specialized training programme.

Language of Instruction

The resource materials available will be in English. However, discussions held during the training can be in the local language for better understanding. The facilitators of the training programme can translate the material in their local language if at all there is a need for it.

Training Methods

The module is intended to cater to the requirements of the target audience i.e NGOs for self-learning and participation in the training. The following training methods can be used during training for effective implementation of the module. The methods suggested are:

1. Lectures
2. Group discussions
3. Simulation/Role play
4. Demonstrations
5. Screening of video films
6. Practical Field exposure
7. Self assessment

The Process

The module consists of two parts. Part 1 tries to cover general information about Disaster Risk Rits Management while Part II highlights the 'when', 'why' and 'how' of contingency planning, emphasizing the importance of the process necessary to arrive at an effective plan. It describes an approach which is participatory and ongoing and suggests mechanisms which can be established in-country to update the plan and maintain the preparedness process. This section sets out a model format for a contingency plan. These guidelines stress that the plan is the product of the process and would constantly be changed and updated based on the requirement. Nevertheless the plan has an importance as a working tool and thus, some guidance on the best approach to design the plan is required.

The Partners

For successful implementation of the module, there is a need to identify the partners who play an important role. In this context, the key partners could be various training institutes such as National Institute of Disaster management (NIDM), State Institutes of Rural Development (SIRDs) and Administrative Training Institutes (ATIs), Government Departments, NGOs, and resource centers for eg. Tamil Nadu Tsunami Resource Center.

Learning Outcomes

After completing the training, participants will be able to:
1. Define and differentiate various terminologies of DM with appropriate examples.
2. Identify partners who play an important role in the planning process.
3. Understand the institutional mechanism available in India in the field of DRR.
4. Understand the process of preparation of plans and mock drill.
5. Understand needs and damage assessment.
6. Identity the role of NGOs in pre, during & post disaster scenarios.

Evaluation

The module has been sufficiently supported with illustrations, case studies etc. for better understanding and to make it a good guide/reading for the target audience. List of references has also been mentioned at the end of the module which would help the participants gather in-depth knowledge of the subject.

An evaluation and feedback form has been attached so that participants share session wise feedback on the module. Participants need to fill the form on a daily basis so that the feedback received from them would be fresh in their mind and this would further help moderators/writers improve the quality of the module.

PART - 1

Introduction

Duration	75 minutes
Main Points	- Opening Remarks / Welcome by key stakeholders in the orientation process. - Clarify the target group and purpose of the training. - Overview of the Orientation Workshop: a. Scope and relevance b. Training methodology: Question and answer nature of the training c. Limitations of the training - Final Outcome: Description of the participant's final exercise - Training Evaluation: The need for training and the importance of participant feedback - Participant and training team's introduction and understanding the expectation's of the participants. - Ground rules, logistical information and the resource desk.
Importance of this session	The session is crucial as it gives an overview of the purpose and methodology of the training. The session introduces the organizers, the resource team, participants, training schedule and content, and administrative and logistical matters. It gives the participant an insight into the scope, relevance and limitations of the training programme. Being the first session of the training, it also develops a bond between the participants and the resource team.

01
SESSION

Participant Workbook

Introduction

	Participant Notes

Enabling Objectives
 	
At the end of the session, the participants will be able to:
 	
• Identify the organizers, the resource/facilitation team, and all the participants present during the training.
 	
• Identify and describe the:
  o   Training purpose, objectives and methodology
  o   Training agenda and session descriptions
  o   Training Materials
  o   Limitations of the training
  o   Need for the training and understand the expectations of the participants and the importance of participant's feedback.
  o Administrative and logistical information	

Methods of Delivery: Lecture, discussions, games

Approximate Duration: 75 minutes

SESSION 2

What is Disaster Risk Management (DRM)

Duration	75 minutes
Main Points	• Hazards are a part of our natural and human systems in India, Asia and the world. • Disaster is the result of the inter-relationship between hazards, vulnerabilities and capacities. So is disaster risk management and reduction. • India is a multi-hazard prone country, with multiple stakeholders working to manage and reduce disaster risks. • There is a trend in the field of DRM in India and thus there is a need to move from response to preparedness and from emergency management to risk reduction. • Understand the vulnerability profile of India
Importance of this session	The session is the first formal and focussed coverage on the participant's core area of work in DRM. It will clarify the use of DRM related concepts and applications and will put the work of stakeholders in perspective. By giving suitable examples, the participants will be able to have an apt understanding of the terminologies that are normally used to understand the topic of DRM.

02
SESSION

Participant Workbook

What is Disaster Risk Management (DRM)?

	Participant Notes

Enabling Objectives
 	
At the end of the session, the participants will be able to:
a) Describe the following related to DRM:
   a. Concepts: Disaster, Hazards, Vulnerability, Capacity, Disasters and Risk.
   b. Disaster Types: Natural and Human Induced
   c. Natural Hazard Profile of India: Earthquakes, Floods and Cyclones
   d. DRM phases and types of intervention.
   e. Social, economic, and environmental impacts of disasters.
   f. Approaches: disasters development and disaster risk reduction; and
   g. Issues related to the formal and operational use of DRM terminologies in the disaster and development sector.
b) Identify trends related to DRM in India, Asia and World.
c) Identify existing and upcoming resources and references for the DRM practitioner's advanced learning needs.
d) Understand various hazards that the Indian sub-continent is prone to.	

Methods of Delivery: Lecture cum discussion method and sharing of experience.

Approximate duration: 75 minutes

Introduction: Natural disasters affect all. However, the nature of impact varies based on the coping capacity of those affected and the vulnerability of the areas they live in. There has been an increase in the number of natural disasters over the past few years, and with it, increasing loss on account of urbanization and population growth. As a result, the impact of natural disasters is now felt to a greater extent. The year 2004-2005 has been witness to a series of natural and human induced disasters. The Tsunami in Asia and Africa (26th December 2004) killed over 200,000 precious lives and left millions homeless, grief- stricken and traumatized. The hurricanes Rita and Katrina in United States of America (26th August and November 2005) killed more than 1,200 lives and displaced over 1 million. The massive earthquake that struck Kashmir (8th October, 2005) killed at least 73,000 and left more than 3.3 million people homeless.

According to the United Nations, in 2001 alone, natural disasters of medium to high range caused at least 25,000 deaths around the world, which was more than double the previous year. Economic losses were to the tune of US $ 36 billion. These figures would be much higher, if the consequences of the many small and unrecorded disasters that cause significant losses at the local community level were to be also taken into account. It is 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 life and property and restrict socio- economic damage through continuous action, especially in developing countries.

Even though these disasters occurred in various places and among different populations, they shared a common factor, that is, it was always the community who is the 'first responder,' and who suffered the most during and after a disaster.. Though disasters cannot be stopped, we can endeavour to reduce its effects to the extent possible to avoid a humanitarian crisis. In order to understand the issue better let us first discuss the vulnerability profile of India.

Before we go into more detail, it is important to understand the meaning of various concepts, definitions, trends and practices that we would use very frequently during the training.

Concepts and definitions, trends and practices

2.1 What is a Disaster?

The term disaster owes its origin to the French word "Desastre" which is a combination of two words 'des' meaning bad and 'aster' meaning star. Thus, the term refers to 'Bad or Evil star'. Disaster can be defined as "a serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources." (Source: Reducing Disaster Risk, UNDP 2004).

Houses damaged during the Orissa Super Cyclone on 29th October 1999

Some of the recent regional disasters include the Indian Ocean Tsunami in 2004 that affected parts of Asia and Africa and the South Asian Earthquake in 2005 which affected Pakistan and India. Some recent ones in India were the flash floods in Rajasthan in 2006, Mumbai (Maharashtra) and Vadodara (Gujarat) in 2005, the earthquake in Gujarat in 2001, the super cyclone in Orissa in 1999, the Uphaar Cinema Fire in Delhi in 1997, the recurrent droughts in parts of Rajasthan (1980s onwards), and the Bhopal Gas Disaster in 1984.

2.2 What are the key elements of a Disaster?

Disasters result from the combination of **hazards**, conditions of **vulnerability** and insufficient **capacity** or measures to reduce the potential negative consequences of **risk**. (Source: Living with Risk, UN ISDR 2002)

a) Hazard is a potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. (Source: Living with Risk, UN ISDR 2002)

For example: Earthquakes, flood and, industrial gas leakages are some examples of hazards. Hazards can be single, sequential or combined in their origin and effects. Hazardous events can vary in magnitude or intensity, frequency, duration, area of extent, speed of onset, spatial dispersion and temporal spacing. Based on their causes, hazards are categorized into the following categories.

Hazard	
A potentially damaging physical event, phenomenon or human activity, which may cause the loss of life or injury, property damage, social and economic disruption or environment degradation.	
Natural Hazards	
Natural processes or phenomena occurring in the biosphere that may constitute a damaging event. Natural hazards can be classified according to their (1) hydro meteorological, (2) geological or (3) biological origins.	
Origin	**Phenomena / Examples**
(1) Hydro-meteorological hazards Natural processes or phenomena of atmospheric hydrological or oceanographic nature.	• Floods, debris and mudflows • Tropical cyclones, storm surges, wind, rain and other severe storms, lighting • Drought, desertification, wild land fires, temperature extremes and dust storm. • Permafrost, snow avalanches.
(2) Geological Hazard Natural earth processes or phenomena that include processes of endogenous origin or tectonic or exogenous origin such as mass movements.	• Earthquake, tsunami • Volcanic activity and emissions • Mass movements landslides, rockslides, liquefactions, sub-marine slides. • Surface collapse, geographical fault activities.
(3) Biological Hazards Processes of organic origins or those conveyed by biological vectors, including exposure to pathogenic, micro organism, toxins and bioactive substances.	Outbreaks of epidemics diseases, plant or animal contagion and extensive infestation.
Technological Hazards	
Danger originating from technological or industrial accidents, dangerous procedures, infrastructure failures or certain human activities, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Some examples: industrial pollution, nuclear activities and radioactivity, toxic wastes, dam failures; transport, industrial or technological accidents (explosions, fires, spills).	
Environmental Degradation	
Processes induced by human behaviors and activities that damage the natural resource base adversely and alter natural processes or ecosystems. Potential effects are varied and may contribute to the increase in vulnerability, frequency and the intensity of natural hazards. Examples include land degradation, deforestation, desertification, wild land fire, loss of bio-diversity, land, water and air pollution, climate change, sea level rise and ozone depletion.	

Figure 2.1: Hazards- Concepts and Classifications
Source: Living with Risk, UN ISDR 2002

Based on the global data for disaster occurrences between 1995 and 2004, it is evident that floods, followed by wind storms and droughts are the most common natural hazards leading to disasters. Figure 2. 2 show world distribution of disasters triggered by natural hazards.
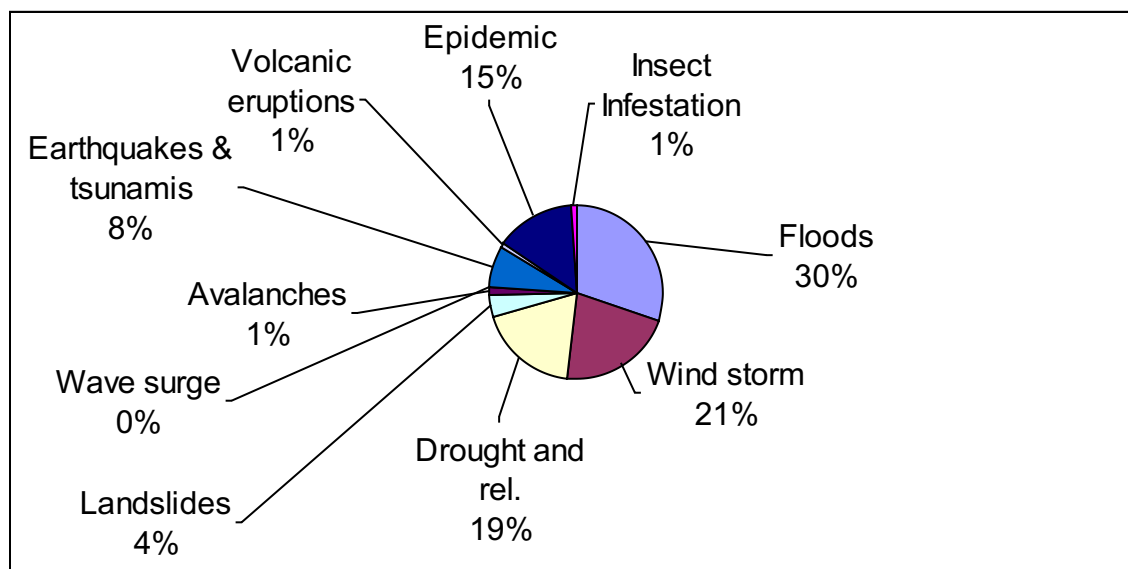
Figure 2.2: World Distribution of Disasters triggered by Natural Hazards (1995-2004)
Source: http://www.unisdr.org/disaster-statistics

b) Vulnerability is the condition determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards. (Source: Living with Risk, UN ISDR 2002).

The scale of damage to a community from the impact of a given hazard does not only depend upon the community's physical exposure to that hazard, but also on its vulnerability. Here, physical exposure refers to the elements at risk. These elements may include people, artifacts, infrastructure etc. (Source: Reducing Disaster Risk, UNDP 2004). Vulnerability, on the other hand, is determined by aspects in the physical environment, such as nature of housing, available open space etc, as well as aspects in the socio-economic domain such as level of income, nutritional status, marginalization, etc.

For example, during the Gujarat Earthquake (2001), people living in the old city of Bhuj with narrow roads, newly-constructed unsafe high-rise buildings and a high density of population, faced more injuries and loss of life, than those living in the suburbs. The people in suburbs had broader roads and single/double storied buildings and a lower density of population, which helped quick exit from falling buildings.. In terms of vulnerability, groups of school children and the elderly who could not evacuate quickly faced higher cases of injury and loss of lives than other communities in the same area.

Some indicators of vulnerability for India's population are:

- Poverty
- Population explosion
- Demographic imbalances

- Unemployment

- Growth of large informal economies in unplanned cities

- Increasing migrant flows,

- Socio-political tensions and uncertainty

- Illiteracy

- Women and child development concerns

- Absence of sound institutional and legislative/regulatory practices, and

- Unsustainable environmental practices.

c) Capacity is the combination of all the strengths and resources available within a community, society or organization that can reduce the level of risk, or the effects of a disaster. Capacity may include physical, institutional, social or economic means as well as skilled personal or collective attributes such as 'leadership' and 'management'. Capacity may also be described as capability. (Source: Living with Risk, UN ISDR 2002)

Example: After the floods in Vadodara district (Gujarat) in 2005, it was seen that villages with existing Disaster Management Teams (DMTs) and Disaster Management Committees (DMCs) responded to the floods well in time, by rescuing people to pre-identified safe areas.

Two concepts within the framework of 'capacity' that are often used in Disaster Management are:

- Coping capacity: The manner in which people and organizations use existing resources to achieve various benefits during unusual, abnormal and adverse conditions of a disaster phenomenon or process. (Source: Reducing Disaster Risk, UNDP 2004).

    An example of coping capacity is the community kitchen set up by local village groups in areas like temples and schools of Orissa after the 1999 cyclone.

- Resilience: The capacity of a system, community or society to resist or to change in order that it may obtain an acceptable level in functioning and structure. This is determined by the degree to which the social system is capable of organizing itself, and the ability to increase its capacity for learning and adaptation, including the capacity to recover from a disaster. (Source: Reducing Disaster Risk, UNDP 2004).

    For example, after the 2001 Gujarat Earthquake, local communities began clearing the debris, retrieving materials and reconstructing their houses/work place, even before external help came from government or other organizations. This was an example of resilience of the community.

d) Risk is the probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions.

(Source: Reducing Disaster Risk, UNDP 2004)

Risk is conventionally expressed by the equation:

$$Risk = Hazard \times Vulnerability$$

(Source: Reducing Disaster Risk, UNDP, 2004)

Some professionals use the notation: Risk = Hazards x Vulnerability minus (-) Capacity

They identify capacity as an element that can drastically reduce the effects of hazards and vulnerabilities. There is yet no consensus on the use of a particular notation.

For example, after the 2004 Tsunami, it was noticed that the village of Samiyarpettai in Tamil Nadu, India, reported fewer deaths in comparison with the other villages in the vicinity. It was found that the capacity of the villagers to respond to disasters on time and effectively was built by training in search, rescue, evacuation and first aid. The villagers felt that this training and its related response plan helped them in saving lives during the tsunami.

Risks often exist within social systems. For example, better employment opportunities in cities attract immigrants from the rural areas. However, lack of adequate financial resources and high land prices in the city often force these immigrants to settle in slums that are unsafe and vulnerable. During the recurrent urban floods in Mumbai, the poor living in slums faced higher adverse effects of floods (both immediate and long-term) than the others in the city. These effects included loss of daily wages, damage to work- space in homes, electrocution, water-borne diseases and others. Due to their irregular land status, they do not have access to insurance and are not always compensated by the government and aid agencies for their losses. Thus their social position contributes to higher disaster risk during floods.

2.3   What is Disaster Risk?

Disaster Risk is the probability of harmful consequences, or expected loss of lives, people injured, property, livelihoods, economic activity disrupted and environment damaged resulting from interactions between natural or human induced hazards and vulnerable conditions. (Source: Reducing Disaster Risks, UNDP 2004).

For example, an earthquake hazard of the same magnitude in a sparsely populated village of Rajasthan and in the densely populated city of Delhi will cause different levels of damage to human lives, property and economic activities. This is due to the difference between the two locations in densities of population, type of housing, type of industries, economic cost of infrastructure, geographic profile etc. Thus, earthquake disaster risk is a combination of earthquake hazard and the context (vulnerability and capacity) in which it strikes.

For more terminologies, refer to Annexure 1.

2.4   When does a HAZARD lead to a DISASTER?

A disaster occurs when the impact of a hazard on a section of society exceeds the capacity to prevent or cope with it, causing death, injury, loss of property and/or economic losses.

For example, if an earthquake strikes a desert uninhabited by human beings, it would not cause direct and immediate damage to the society and thus, would not be termed as a disaster. Conversely, the earthquake that struck Bhuj (Gujarat) in 2001 and killed more than 14,000 people became a disaster owing to its immediate impact on the society.

The DM **Act, 2005** has the following definition for a disaster:

(D) "disaster" means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such nature or magnitude to be beyond the coping capacity of the community of the affected areas;

2.5   What are the types of Disasters?

Disasters can be categorized into various types based on the speed and origin/cause.

a.   Speed of Onset:

Slow-onset disaster: The hazard can be felt as an ongoing stress for many days, months or even years. Drought, environmental degradation, pest infestations, famines are some examples.

Rapid-onset disaster: A disaster that is triggered by an instantaneous shock. The impact of this disaster may unfold over the medium or long-term. Earthquakes, cyclones, floods, volcanic eruptions are some examples. (Source: Reducing Disaster Risk, UNDP, 2004).

b.   Origin/Cause:

Natural Disasters: A serious disruption triggered by a natural hazard (hydro- metrological, geological or biological in origin) causing human, material, economic or environmental losses, which exceed the ability of those affected to cope.

Floods in Assam

Some examples of natural disasters are the 2004 Indian Ocean Tsunami, the 2001 Gujarat Earthquake, 1999 Orissa Super Cyclone, the recurrent droughts in Rajasthan, and the annual floods in both rural and urban areas of northern and western India.

Human-induced Disasters: A serious disruption triggered by a human-induced hazard causing human, material, economic or environmental losses, which exceed the ability of those affected to cope.

Some examples are the 1984 Bhopal Gas Disaster, the 1997 Uphaar Cinema Fire in Delhi, Kumbakonam Fire Tragedy in 2003, Mumbai blasts in 1993 and 2006, Rajdhani Express train derailment in 2002 etc.

2.6   What are the key elements or phases in DM?

'DM' covers a broad range of interventions undertaken before, during and/or after a disaster to:

- Prevent or minimize loss of life and property,
- Minimize human suffering and
- Accelerate recovery.

The management of a disaster can be viewed as a series of phases including Prevention, Mitigation, Preparedness, Response, Relief, and Recovery (Rehabilitation and Reconstruction).

Three common models that explain the movement of disaster management activities across phases are:

A.   Disaster Management Cycle

B.   Disaster Management Contract Expand Model

C.   Pre, During and Post- Disaster Model

A. **Disaster Management Cycle** is the most commonly used model**.** Many manuals and training courses present the idea of a disaster 'cycle' to illustrate where the different elements of disaster management - mitigation, preparedness, prevention, relief, response and recovery- link with one another. The Cycle illustrates the process by which various stakeholders respond to and reduce the impact of disasters, react during and immediately following a disaster, and take steps to recover after a disaster has occurred.

The Cycle varies for a rapid- onset disaster (for example an earthquake) and for a slow -onset disaster (for example drought). Disaster event is the most prominent feature of rapid-onset disasters, like an earthquake. On the other hand, slow-onset disasters like droughts do not have a clearly marked event, but the severe disaster impact is viewed as the starting point for responders.

Preparedness and early warnings play a significant role in slow-onset disasters, as these can be mapped through various scientific tools.

For example: The study of monsoon patterns and related drought conditions. Another difference is the recovery phase (especially reconstruction) in the two disasters. While rapid-onset disasters demand major physical recovery efforts (like housing reconstruction damaged by an earthquake), these are minimal in slow-onset disasters like droughts, pollution of water bodies etc.

The DM Cycle model is criticized for its over-simplification. While the concepts of prevention, mitigation, preparedness, relief/response and recovery continue to be viewed as useful operational terms in the real world, the components or phases of a disaster do not fit together neatly or in exact sequence in the way shown in figure 2.3. There can be substantial overlaps between phases and elements. It is important that all phases factor the approach for disaster risk reduction in its operations, leading to greater preparedness, better warnings, reduced vulnerability or the prevention of disasters during the next iteration of the cycle.
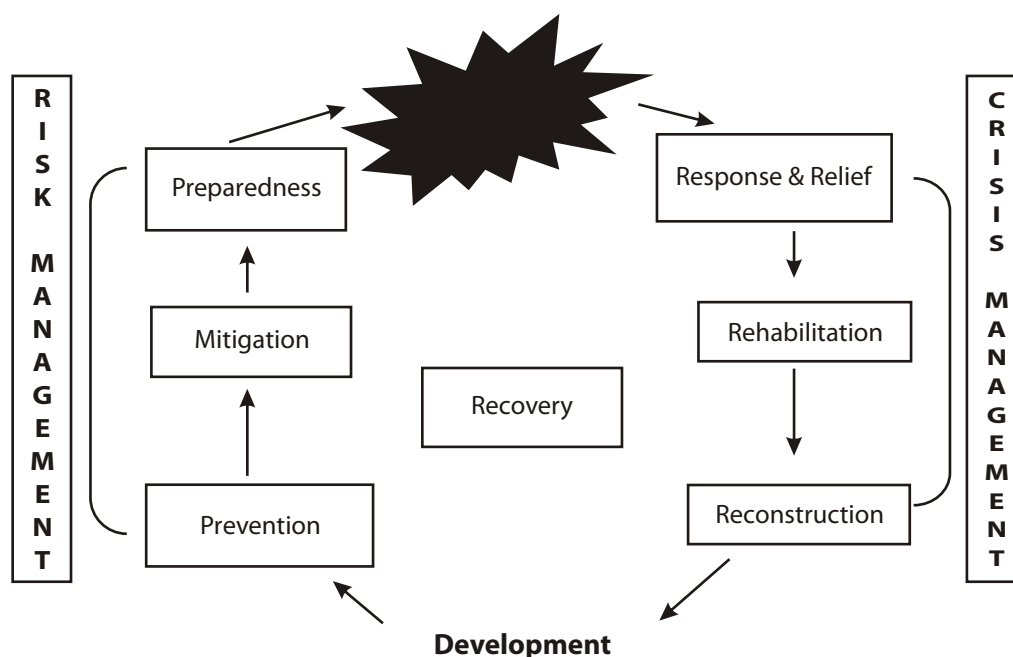
Figure 2.3: Disaster Management Cycle
Source: UNDP India Training Material (2005)

B. **Contract Expand Model** is the name given to the Disaster Management model used by the communities in South Africa (Kotze & Holloway, 1996). It is called the Contract Expand Model because it assumes that prevention, mitigation; response and recovery can be carried out at all times in a disaster-prone community. However, the relative weighting of each component "contracts" or "expands" depending on the relationship between the hazard and the vulnerability of the community across time (Figure 2.4).
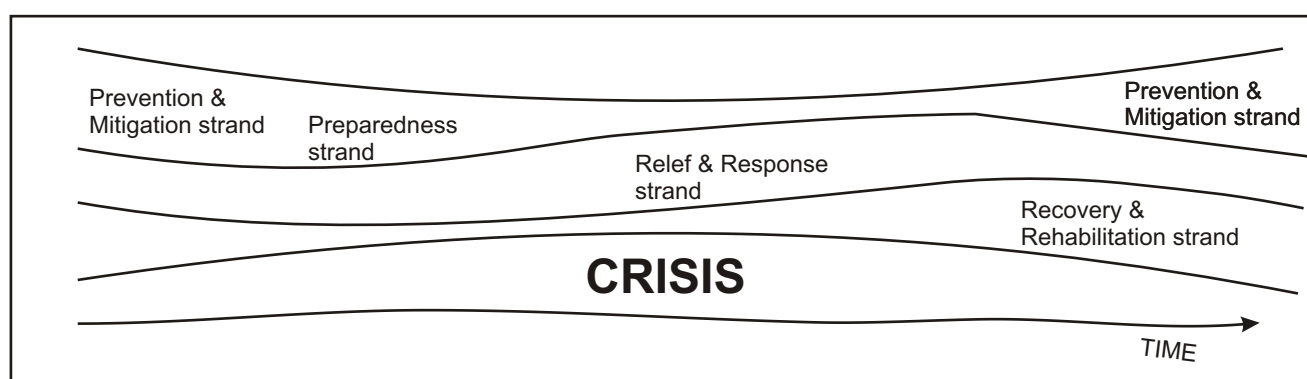
Figure 2.4: Contract Expand Model for Disaster Management

This model assumes the following:
   a. That a disaster occurs when a hazard exceeds a community's capacity to manage it.
   b. That all components of disaster reduction can be carried out concurrently, but with relative emphasis.
   c. That the relative weighting of the activities depends on relationship between the hazard and the vulnerability of the community-at-risk and the technical or operational mandate of the organization involved.

C. **Pre/During and Post Disaster Model** is an alternative framework to the Cycle by the Citizens Disaster Response Network in the Philippines. The network has been promoting citizen-based development-oriented disaster management since 1984. It categorizes Disaster Management interventions simply as pre, during and post disaster responses, which are done within the overall framework of development.

PRE	DURING	POST
Prevention	Emergency Response	Rehabilitation
Mitigation		Mitigation
Preparedness		

While actors in different parts of the world use various models for Disaster Management, the underlying thought is that

i) Prevention: Activities to provide outright avoidance of the adverse impact of hazards and means to minimize related environmental, technological and biological disasters. Depending on social and technical feasibility and cost/benefit considerations, investing in preventive measures is justified in areas frequently affected by disasters.

For example, public awareness and education related to fire safety in public buildings could lead to prevention of fire-related disasters. Disaster Risk Reduction professionals express that changing attitudes and behavior contribute to promoting a "culture of prevention".

ii) Mitigation: Any action taken to minimize the extent of a disaster or potential disaster. Mitigation can take place before, during or after a disaster, but the term is most often used to refer to actions against potential disasters. Mitigation measures are both physical and structural, such as flood defenses or strengthening buildings, as well as non-structural, such as training in Disaster Management, regulating land-use and public education, among others.

iii) Preparedness: Activities and measures taken before a hazard event to ensure effective response to the impact of hazards. It involves measures that enable governments, community and individuals to respond rapidly to disaster situations and cope with them effectively.
Preparedness includes:

- Making of viable emergency plans

- Development of warning systems

- Maintenance of inventories

- Training of personnel

- Search and rescue measures

- Evacuation plans for areas that may be 'at risk' for a recurring disaster.

Some examples which help the government and community to be better prepared, are the preparation of DM plans, training and capacity development at various levels, and conducting regular mock drills etc.

The concepts of prevention, mitigation and preparedness are often used interchangeably. However, these concepts and their practices are very different as highlighted in **Figure 2.5.**

Disaster Prevention	Disaster Mitigation	Disaster Preparedness
Activities designed to provide permanent protection for disasters.	Measures taken in advance of a disaster aimed at reducing its impact on society and the environment	Ability to predict, respond to and cope with the effect of a disaster.

Figure 2.5: Difference between Disaster Prevention, Mitigation and Preparedness
Source: Sphere Project Training Module 4

iv) Response/ Relief: The provision of assistance or intervention during or immediately after a disaster to meet the basic subsistence needs of the people affected. It can be of an immediate, short-term, or protracted duration. For example, search and rescue of affected people and provision of food, temporary shelter and medical care to the persons affected by the disaster are some common areas of intervention after a disaster.

v) Rehabilitation: The operations and decisions taken after a disaster with a view to restore an affected community to its former living conditions, while encouraging and facilitating the necessary adjustments to the changes caused by the disaster.
An example is counseling by professionals or community leaders to help reduce the psychological trauma of affected groups of children, women and others after a disaster.

vi)Reconstruction: The action taken to re-establish a community following rehabilitation after a disaster. These actions would include construction of permanent housing, complete restoration of all services and physical infrastructure to the pre-disaster state etc.

vii) Recovery: The term refers to decisions and actions related to rehabilitation and reconstruction taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the affected community, while encouraging and facilitating necessary adjustments to reduce disaster risk. It is important to note that recovery (includes both rehabilitation and reconstruction) affords an opportunity to develop and apply disaster risk reduction measures.

2.6   What is the difference between Disaster Risk Reduction (DRR) and DRM?

DRR is the systematic development and application of policies, strategies and practices to minimize vulnerabilities, hazards and the unfolding of disaster impacts throughout a society, in the broad context of sustainable development (Source: Reducing Disaster Risk, UNDP, 2004).

DRR approaches all phases of DM (relief and response; recovery; rehabilitation and reconstruction; prevention; mitigation and preparedness) and associated activities. It views disasters as an opportunity for risk reduction and development.

For example, in the post-earthquake situation, relief materials should be stored in an area that is safe from potential damages due to aftershocks. This could be an open ground rather than in or around a damaged building. Similarly, reconstruction could factor earthquake safety features in houses even if these were not followed before the earthquake.

DRM is the systematic management of administrative decisions, organisation, operational skills and abilities to implement policies, strategies and coping capacities of the society or individuals to lessen the impacts of natural and related environmental and technological hazards. (Reducing Disaster Risk, UNDP 2004).

USEFUL WEB LINKS FOR REFERENCE

1. Living with Risk: A Global Review of Disaster Reduction Initiatives
    http://www.undp.org/bcpr/disred/english/publications/publications.htm#kr
2. Hyogo Framework for Action (2005-2015). http://www.unisdr.org/eng/hfa/hfa.htm.
3. Yokohoma Strategy and Plan of Action for a Safer World
    http://www.unisdr.org/eng/about_isdr/bd-yokohama-strat-eng.htm
4. Primer for Disaster Risk Management in Asia:
    http://www.adpc.net/udrm/primer/pdf/primer_volume1.pdf
5. Local Level Risk Management in UNDP: Asia Regional Review Paper (September 2004).
6. Global Review of Institutional and Legislative Systems for DRM (UNDP, 2005)
    http://www.undp.org/bcpr/disred/documents/wedo/ils/ils_esummary.pdf
7. Visions of Risk: International Indicators of DRM (ISDR 2005)
    http://www.undp.org/bcpr/disred/documents/publications/visionsofrisk.pdf

Duration	45 minutes
Main Points	• Understanding the hazard profile of India with the help of multi-hazard map of India. • Various hazards prevalent in the country. • The evolution of DRM in India • Administrative setup of GoI to effectively respond to disasters from the national to the local level. • GoI has a set of ESFs that would take a lead role in case of disasters.
Importance of this session	The session is crucial as it gives an overview of the hazard profile of India. The sub-continent being prone to a large number of hazards has a well established administrative structure from the national till the local level. This session tries to give the participants an overview of the ESFs that would play a key role in case of disasters.

03
SESSION

Participant Workbook

Institutional Framework of Disaster Management (DM) in India

	Participant Notes

Enabling Objectives
 	
At the end of the session, the participants will be able to:
    o   Understand the hazard profile of the country.
    o   Understand the administrative structure/the institutional framework of DM in India.
    o   Understand the nodal ministries responsible for various hazards.
    o   Understand the Emergency Support Function (ESFs) prevalent in the country to effectively respond to disasters.
    o Have a basic understanding of the NDMA, National DM Act, NIDM.	

Methods of Delivery: Lecture, discussions, Role play

Approximate Duration: 45 minutes

Historically the Indian sub-continent has been historically prone to a range of natural and human induced disasters owing to the country's geographic, topographic and climatic characteristics. Being a vast sub-continent, floods, droughts, cyclones, earthquakes and landslides have been recurrent phenomena. Besides local disasters, approximately 80 per cent of India's geographical area is vulnerable to natural hazards such as cyclones, floods, landslides, droughts and earthquakes besides localized hazards, while 22 states are prone to multi - hazards.

Refer to the multi-hazard **Map 3.1** of India and **Table 3.1** on India's key vulnerabilities.

Hazard	Vulnerable regions
Cyclone	Coastal areas (8 per cent of total area in India) particularly the east coast and Gujarat; 8000 km long coastline with two cyclone seasons
Flood	Indo-Gangetic plains and 20 river basins across the country (approx. 40 million hectares are prone to floods)
Drought	Across the country ;approx. 68 per cent of cropped area affected (low and medium rainfall region)
Earthquake	Across the country with moderate high intensity (over 55 per cent)
Landslide	Sub-Himalayan region and western Ghats in particular
Industrial and Chemical	Across the country

Table 3.1: India's Key Vulnerabilities annually/ periodically, across various regions.
Source: Tenth Five Year Plan of India 2002-07, Government of India

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[1] An updated figure on earthquake hazard identifies over 60 per cent of India as vulnerable to moderate and high intensity earthquakes (Source: Seismic Zone Map of India as per the Indian Seismic Code, IS: 1893 (Part 1) 2002 BMTPC).

III. Natural Disaster Profile of India

MAP SHOWING MULTI HAZARD ZONES IN INDIA

W&C_VH(A)= Wind &cyclone very high damage risk zone - A (55 m/s)
W&C_VH(B)= Wind &cyclone very high damage risk zone -B (50 m/s)
W&C_H= Wind &cyclone high damage risk zone - (47 m/s)
W&C_M(A)= Wind &cyclone moderate damage risk zone - A (44 m/s)
W&C_M(B)= Wind &cyclone moderate damage risk zone -B (39 m/s)
W&C_L= Wind &cyclone low damage risk zone (33 m/s)
EQ_VH= Earthquake very high damage risk zone (MSK IX or more)
EQ_H= Earthquake high damage risk zone (MSK VIII)
EQ_M= Earthquake medium damage risk zone (MSK VII)
EQ_L= Earthquake low damage risk zone (MSK VI)
FLZ= Flood zone
NFZ= No flood zone

LEGENDS

EQ(M)
W&C+HEQ(H)FL
W&C+HEQ(H)NFZ
W&C+HEQ(L)FL
W&C+HEQ(L)NFZ
W&C+HEQ(M)FL
W&C+HEQ(M)NFZ
W&C+HEQ(VH)FL
W&C+HEQ(VH)NFZ
W&C(L)EQ(L)FL
W&C(L)EQ(L)NFZ
W&C(L)EQ(M)FL
W&C(L)EQ(M)NFZ
W&C(M-A)EQ(H)NFZ
W&C(M-A)EQ(L)FL
W&C(M-A)EQ(L)NFZ
W&C(M-A)EQ(V)FL
W&C(M-A)EQ(V)NFZ
W&C(M-A)EQ(VH)NFZ
W&C(M-B)EQ(H)FL
W&C(M-B)EQ(H)NFZ
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W&C(M-B)EQ(V)FL
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W&C(VH-B)EQ(H)NFZ
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W&C(VH-B)EQ(L)NFZ
W&C(VH-B)EQ(M)FL
W&C(VH-B)EQ(M)NFZ
W&C(VH-B)EQ(V-H)FL
W&C(VH-B)EQ(V-H)NFZ

Andaman & Nicobar island

Lakshadeep islands

The BMPTC (Building Materials and Technology Promotion Council) of the Ministry of Urban Development has mapped the prominent hazards in the country in the shape of a **'Vulnerability Atlas of India.'** The atlas relies on data and maps produced by various government departments working on specific disasters, for example, Flood Atlas of India prepared by the Central Water Commission, Seismic Zoning Map of India (Map 3.2) by the Bureau of Indian Standards (BIS). For more information on the atlas: http://www.bmtpc.org/disaster.htm

Zone	Magnitude
Zone V	**Very High Risk Quakes** of Magnitude **8** and greater
Zone IV	**High Risk Quakes**
Zone III	**Moderate Risk Quakes**
Zone II	**Seismic Disturbances** upto Magnitude **4.9**

Source: Bureau of Indian Standards 2002.   *Source: UNDP India*
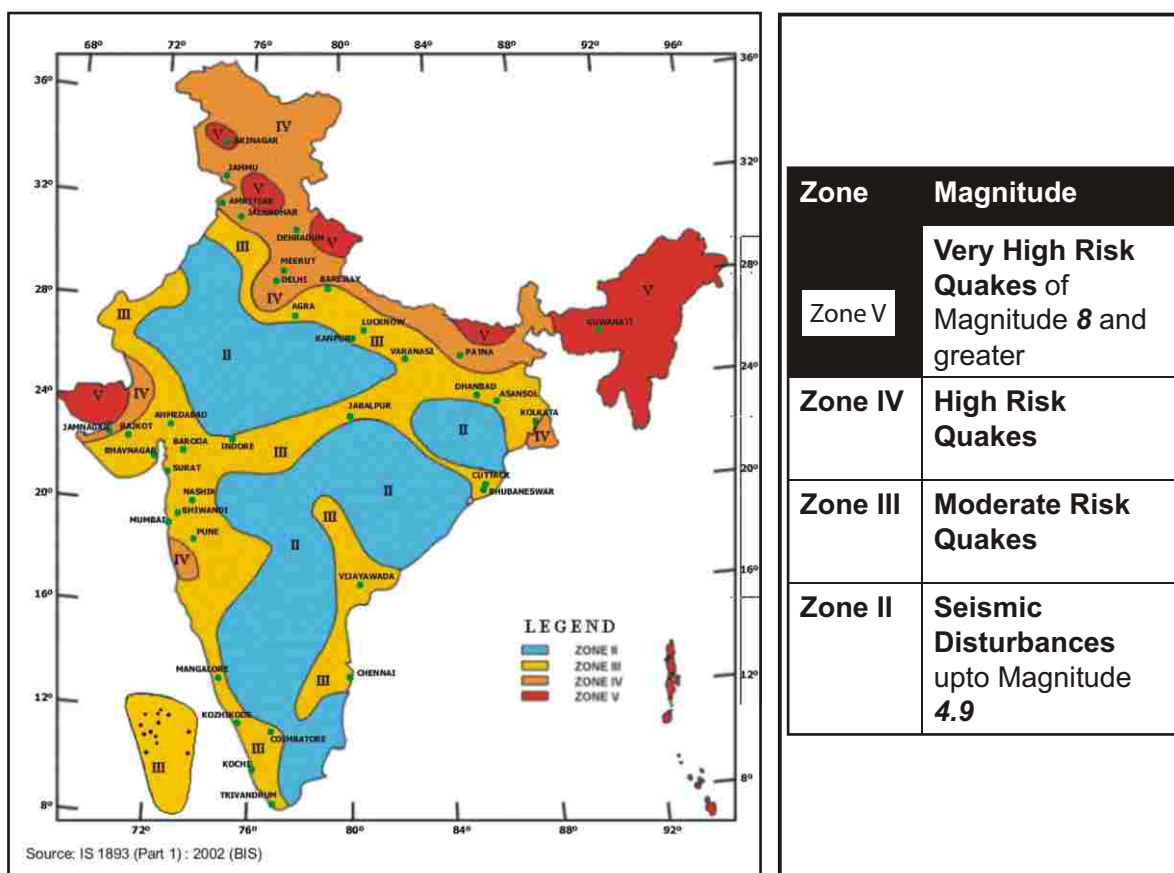
*Map 3.2: Seismic Zoning Map of India and Interpretation Box
(relationship between Intensity and Magnitude).*

3.1   Identify key natural disasters types and events in India and their impact since the 1990s?

The High Powered Committee (HPC) that was constituted by the Government of India in 1999 to map the spectrum of disasters in the country and categorized it into the following:

I. Water and Climate- related disasters	IV. Accident -related disasters
1. Floods and Drainage Management	1. Forest Fires
2. Cyclones	2. Urban Fires
3. Tornadoes and Hurricanes	3. Mine Flooding
4. Hailstorm	4. Oil Spill
5. Cloud Burst	5. Major Building Collapse
	6. Serial Bomb Blasts

6. Heat Wave and Cold Wave 7. Snow Avalanches 8. Droughts 9. Sea Erosion 10. Thunder and Lightning	7. Festival- related disasters 8. Electrical Disasters and Fires 9. Air, Road and Rail Accidents 10. Boat Capsizing 11. Village Fire
II. Geologically- related disasters 1. Landslides and Mudflows 2. Earthquakes 3. Dam Failures/ Dam Bursts 4. Mine Fires **III. Chemical, Industrial and Nuclear-** **related disasters** 1. Chemical and Industrial Disasters 2. Nuclear Disasters	**V. Biologically -related disasters** 1. Biological Disasters and Epidemics 2. Pest Attacks 3. Cattle Epidemics 4. Food Poisoning

Some major disasters in India since the 1990s have been plotted and their frequency listed alongside to give you an overview of disasters in India. (Map 3.3 and Table 3.2)

Major Disasters in India:
1990s onwards

Severe Floods- Every Year

Severe Droughts- Every 2-3 years

Earthquakes (M 6+) - Six
1.   1991 Oct 20 Uttarkashi M6.6
2.   1993 Sept 30 Latur M6.3
3.   1997 May 22 Jabalpur M6.0
4.   1999 March 29 Chamoli M6.8
5.   2001 Jan 26 Bhuj M6.9
6.   2005 Oct 8 Kashmir M7.2

Major Cyclones Four
1.   1990 May Andhra Pradesh
2.   1993 Dec Tamil Nadu
3.   1996 Dec Andhra Pradesh
4.   1999 Oct Orissa Super Cyclone
Tsunami Once (Dec 2004: parts of coastal India)

Map 3.3 and Table3.2: Natural Disasters and their Frequency in India since 1990s

Like many other developing countries, India has suffered direct disaster losses of over 1 billion US dollars on an average each year during the past 20 years. These losses are steadily mounting, as evident in the **Table 3.3.** Disasters eroded nearly 2 per cent of the country's Gross Domestic Product (GDP) during 1996-2001 and consumed 12 per cent of the Government's revenue. The annual exposure to disasters impacts 6 per cent of the population directly while nearly 60 million people are annually affected on an average (Tenth Five Year Plan of India, 2002-2007). The combination of poor socio-economic conditions and disasters has created a vicious cycle of poverty and vulnerability. Therefore India's human development goals cannot be achieved unless disaster risk management concerns are taken into account in development planning.

Year	People Affected (Lakh)	Houses and buildings partially or totally damaged.	Amount of property damage/loss (Rs Crores)
1990	31.7	1,019,105	10.71
1991	342.7	1,190,108	10.5
1992	190.9	570,969	20.05
1993	262.4	1,529,915	50.8
1994	235.3	1,051,223	10.83
1995	543.5	2,088,355	40.73
1996	549.9	2,376,693	50.43
1997	443.8	1,103,549	n.a.
1998	521.7	1,563,405	0.72
1999	501.7	3,104,064	1020.97
2000	594.3	2,736,355	800
2001	788.1	848,878	120

Table 3.3: Damage due to Natural Disasters in India
Source: Tenth Fiver Year Plan of India (2002-2007)

3.1 How did DRM evolve in India?

The Orissa 'Super' Cyclone of 1999, Bhuj Earthquake of 2001, Indian Ocean Tsunami of 2004, and the South Asian Earthquake of 2005 have stressed on the need to adopt a multi-dimensional and inter-sectoral strategy towards managing and pro-actively reducing risks through development policies, plans and programming. In view of this the GoI has called for a paradigm shift in its approach to DM. The shift from emergency response and relief, to preparedness, sustainable recovery and disaster risk reduction comes from the belief that development can create disaster risks if unregulated, but development processes can also reduce disaster

impacts if planned appropriately. This shift in India has been influenced and enabled by commitments made towards reducing disaster risks under various global and regional frameworks of integrated action.

India actively participated in the UN's International Decade for Natural Disaster Reduction (IDNDR) and the International Strategy for Disaster Reduction (ISDR). During these years, various stakeholders in the country came together to build institutional and legislative systems for DRM, supporting various community-based disaster risk management initiatives.

Regionally, there has been a concern with increasing disaster impacts in South Asia. Since 2005, this is being addressed through the SAARC's (South Asian Association for Regional Cooperation) commitment to establishing Disaster Risk Management as a priority area for regional cooperation parallel to SAARC's poverty alleviation, environmental sustainability, and economic development programmes for the region. In the short term, the implications of this regional cooperation for DRM will lead to the establishment of a SAARC Disaster Management Centre (SDMC), with the National Institute for Disaster Management (NIDM) in New Delhi as the focal agency under the Ministry of Home Affairs.

3.2 What is Government of India's role, mandate, system and structure related to DRM in India?

Amidst all the DRM stakeholders, the primary responsibility for all aspects of disaster management rests with the **GoI.** In India, the institutional and policy mechanisms for carrying out response, relief and rehabilitation have been well-established since Independence. The HPC on DM and the Eleventh Finance Commission have made significant contribution to the new approach from a relief and response -oriented one to one of mitigation and risk reduction..

The MHA is designated as the nodal ministry for Disaster Management. Ministry of Agriculture, which earlier held the portfolio for DM, continues to retain the sector for drought management even now. Other ministries that lead response and preparedness related to various disasters are outlined in the **table 3.4** given below:

Table 3.4: Ministries Responsible for various categories of Disasters

Disaster	Nodal Ministry (GoI)
Natural (except drought)	Ministry of Home Affairs
Drought Management	Ministry of Agriculture
Air Accidents	Ministry of Civil Aviation
Railway Accidents	Ministry of Railways
Chemical Disasters	Ministry of Environment and Forests
Biological Disasters	Ministry of Health
Nuclear Disasters	Department of Atomic Energy

Source: Tenth Five Year Plan of India (2002-2007)

Various technical organizations provide specific technical support for coordination of activities related to disaster response and management. These include the Indian Meteorological Department (cyclone/earthquake), Central Water Commission (floods), Building and Material Promotion Council (construction laws), Bureau of Indian Standards (norms), Defence Research and Development Organization (nuclear/biological), Directorate General Civil Defense.

Within the Government of India (GoI), the **State Governments** are primarily responsible for DM, which is a state subject, including prevention and mitigation. The central government provides assistance when requested and where necessary. At the district level, the **District Magistrate/Collector** is the focal point for coordinating all activities pertaining to disaster response and relief.
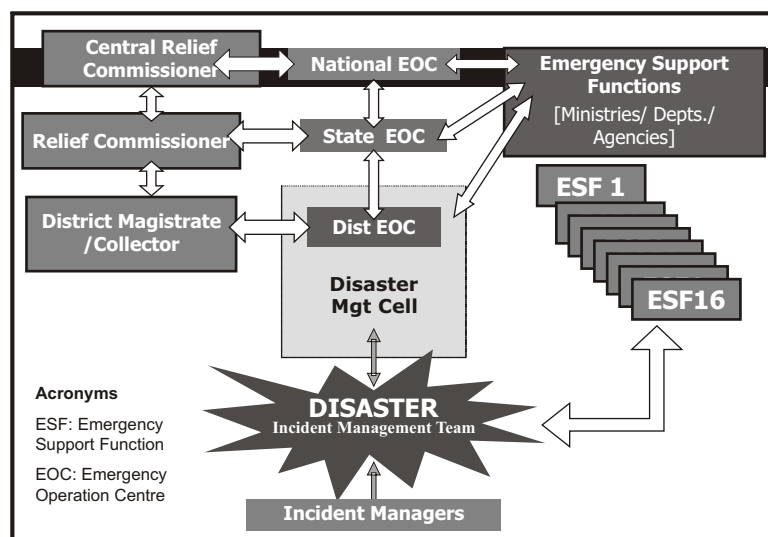

Figure 3.1: Model Disaster Management Response Structure in the Government of India

The model DM response structure explained in **Figure 3.1** shows the ESFs to be activated in response to a disaster. The Emergency Operations Centre (EOCs) which are present at various levels (national to district) co-ordinate emergency information and activities. To bring clarity and standardization to the disaster response process, government is trying to develop an **Incident Command System (ICS)** which broadly refers to a management system to be used for incidents of various kinds and sizes such as earthquakes, floods, cyclones, landslides etc. or emergencies caused by train accidents, epidemics. The ICS activates the ESFs with the support of various ministries, line departments and agencies, whose roles are clarified in advance through the ESFs list. The GoI has outlined the following ESFs and urged governments to identify a lead organization/ministry responsible for coordinating the work of each function during a disaster:

   i.   Communication
   ii.   Evacuation
   iii. Search and Rescue
   iv.   Medical Health/Trauma
   v.   Equipment Support
   vi.   Helplines, Warning Dissemination (Media)
   vii. Drinking Water
   viii. Electricity

Training Module for Non- Governmental Organisations on Disaster Risk Management

ix.   Relief (Flood and Shelter)

x.   Debris & Road Clearance

xi.   Law and Order

xii.   Transport

xiii.   Other Functions

These ESFs have their own SOPs and plans to constitute response teams and mobilizing resources for response.

At the national level the NIDM, GoI, is the focal point for enhancing the capacities of different government and non-government actors in the field of DM. At the state level the government has supported DM units within its ATIs in different states.

The **National Disaster Management Act** was passed in 2005, enacted under the Social Security and Social Insurance subject of the Concurrent List of the Constitution of India. The Act on DM provides the pre-requisite institutional mechanism for monitoring and implementation of the plans and ensuring measures by various wings of the Government for the prevention and mitigation aspects. In line with the changed approach, the State Governments have been advised to amend their Relief Codes to incorporate those Codes related to. The revised codes will ensure that the process of drawing up DM plans, and mitigation and preparedness measures get institutionalized.

The National Disaster Management Act called for setting up of a

- **National Disaster Management Authority** in 2005 under the Chairmanship of the Prime Minister. The authority shall have the responsibility of laying out the plan and policies for DM.

- **State Disaster Management Authorities** in the states/Union Territories under the chairmanship of Chief Minister/Lt. Governor/Administrator, as the case may be; and

- **District Disaster Management Authority** under the District Magistrate in each district. These authorities at the national, state and district levels are responsible for laying down policies, plans and guidelines for DM. The recently developed institutional set-up in India is outlined in Figure 3.2.
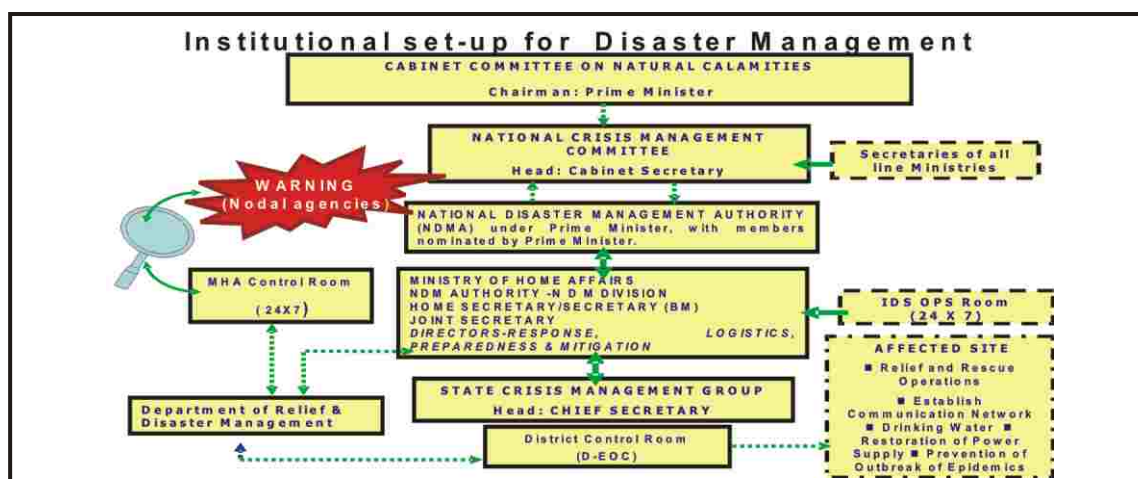

Figure 3.2: Institutional Set-up for Disaster Management in India

For more information on DM Authorities, DM Acts, policies and guidelines, etc please visit http://ndma.gov.in.

What is the National DM Framework of India?

The National DM Framework is a roadmap of GoI to fulfill its goals for disaster reduction through multi-stakeholder interventions. Its key components are institutional mechanisms, disaster prevention strategy, early warning system, disaster mitigation, preparedness and response and human resource development. The agencies that will be instrumental in implementing this roadmap at the National, State and district levels have been identified and listed in the framework. It has been shared with the state governments and Union Territory, relevant ministries and departments of GoI . Administrations have been advised to develop their respective roadmaps taking the national roadmap as a broad guideline. There is, therefore, a common strategy underpinning the action being taken by all the participating organisations/stakeholders. The district administration is the focal point for implementing all government plans and activities. The actual day-to-day functional responsibilities for administering relief and response actions lies with the District Collector/ District Magistrate/Deputy Commissioner who supervises and coordinates among all departments at the district level.

USEFUL WEB LINKS FOR REFERENCE

1. Hazard Maps of India: Multi-hazard, Earthquake, Flood and Wind

    http://www.undp.org.in/VRSE/Maps/

2. Hazard Profile of States in India

    http://www.undp.org.in/dmweb/ndrm/

3. State wise flood-prone areas http://www.undp.org.in/VRSE/Links/DisRelLinks.htm

4. State-wise Seismic Zones of India http://www.undp.org.in/VRSE/Links/DisRelLinks.htm

5. Hazard Maps of India: Multi-hazard, Earthquake, Flood and Wind
    http://www.undp.org.in/VRSE/Maps/

6. NDMA : http://ndma.gov.in. http://ndma.gov.in.

Duration	60 minutes
Main Points	• Disasters and development share both negative and positive relationships. Positive relationships can be used to reduce the disaster risks and achieve development agendas. • There are various development schemes carried out by GoI and many aid agencies. Incorporating appropriate measures in the development schemes will help reduce loss in case of any disaster.
Importance of this session	The session gives a very practical approach to understand the relation between disasters and development. Since development has both a positive and negative link with disasters, the session will help us to understand this relation. This session will also give us an overview of how various DM initiatives can be incorporated in different development schemes being undertaken by GoI.

Participant Workbook

Mainstreaming Disaster Risk Reduction (DRR) with Development

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to: o Understand the relation (both positive and negative) between disasters and development. o The various development schemes carried out by GoI and their linkages with DM.	

Methods of Delivery: Lecture and discussion

Approximate Duration: 60 minutes

Natural disasters occur when societies or communities are exposed to potentially hazardous events, such as extremes of rainfall, temperature or wind speed or tectonic movements, and when people are unable to absorb the impact or recover from it. Reducing the number and effects of natural disasters means tackling the development challenges that lead to the accumulation of hazard and human vulnerability that prefigure disaster. With increasing frequency of disasters, countries face situations in which scarce resources that were earmarked to development projects have to be diverted for relief and reconstruction.

Disaster is defined as a cause and product of failed development, outlining the relationship between the two concepts i.e. 'disaster' and 'development'. **Sustainable Development** is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs (Brundtland Commission, 1987).

Disasters and development are inversely related as evident in the following facts:

Disasters affect development: Disasters resulting from natural hazards killed on an average more than 60,000 people each year between 1992 and 2001. They affected on an average 211 million people per year (1991-2000) through damage to homes, property, crops, livestock and local infrastructure. Associated economic losses from major disasters currently exceed US $90 billion a year; this excludes losses from small and medium scale disasters. Some single disaster impacts result in economic losses in excess of national GDP, generating negative growth: Maldives faced losses above its GDP after the 2004 Indian Ocean tsunami. Table 1.3 presents data on the damage and loss caused by the 2004 tsunami in India.

Affected States in India	Damage and loss (in US $ million)			Effect on Livelihoods
	Damage	**Loss**	**Tota**	
Andhra Pradesh	31.8	16.7	48.5	35.6
Kerala	68.2	57.6	125.8	82.6
Tamil Nadu	509.8	327.5	837.3	332.8
Pondicherry	48.2	8.2	56.4	30.4
Total (by sectors)	658.0	410.0	1,068.0	481.4
Fisheries	320.1	304.5	624.6	383.2
Agriculture and livestock	15.1	22.0	37.1	42.0
Micro enterprises and other	19.7	36.5	56.2	56.2
Housing	193.5	35.2	228.7	
Health and education	13.7	9.9	23.6	
Rural and municipal infrastructure	27.9	1.6	29.5	
Transportation	35.2	0.3	35.5	
Coastal protection	33.6	0.00	33.6	
Relief	200.7		200.7	
'Damage' refers to the direct loss in assets and property. 'Loss' refers to the economic opportunity cost of the damage.				

Table 4.1: Damage and Loss in India after 2004 Tsunami
Source: ADB, UN and World Bank Joint Assessment Mission Report, 2005

The number of people affected indirectly by disasters, for example by rising prices or losses to livelihoods caused by adverse economic consequences, is incalculable. Additionally,

- Disasters (small, medium and large) erode the gains of social welfare.

- Lack of disaster risk considerations in recovery following major disasters, leads to investing in "construction and reconstruction of risk", perpetuating unsustainable human development.

- Poverty alleviation, good governance and other sustainable development activities in line with the Millennium Development Goals (MDGs) are challenges owing to compounding disaster losses and risks. For more on MDGs refer to Section 2, question 2.1 and 2.2

Development affects disasters: Developing countries are hit hardest by disasters. Between 1992 and 2001, 96 per cent deaths from natural disasters were reported in countries classified by the UNDP as medium and low on human development. Over the same period, 98 per cent of those directly affected lived in these countries. While only 11 per cent of the people exposed to natural hazards live in countries with low levels of human development, they account for more than 53 per cent of total recorded deaths.

Levels of development and disaster risks of a country are clearly, closely linked. Appropriate development policies, by factoring disaster risk concerns, can help reduce disaster losses, protect existing development gains and avoid new risks. Disaster- sensitive development policies can thus, help in the achievement of the Millennium Development Goals.

The Disaster- Development link:

The growing body of knowledge on the relationships between disasters and development indicates four basic themes. These themes are captured in Figure 4.1.
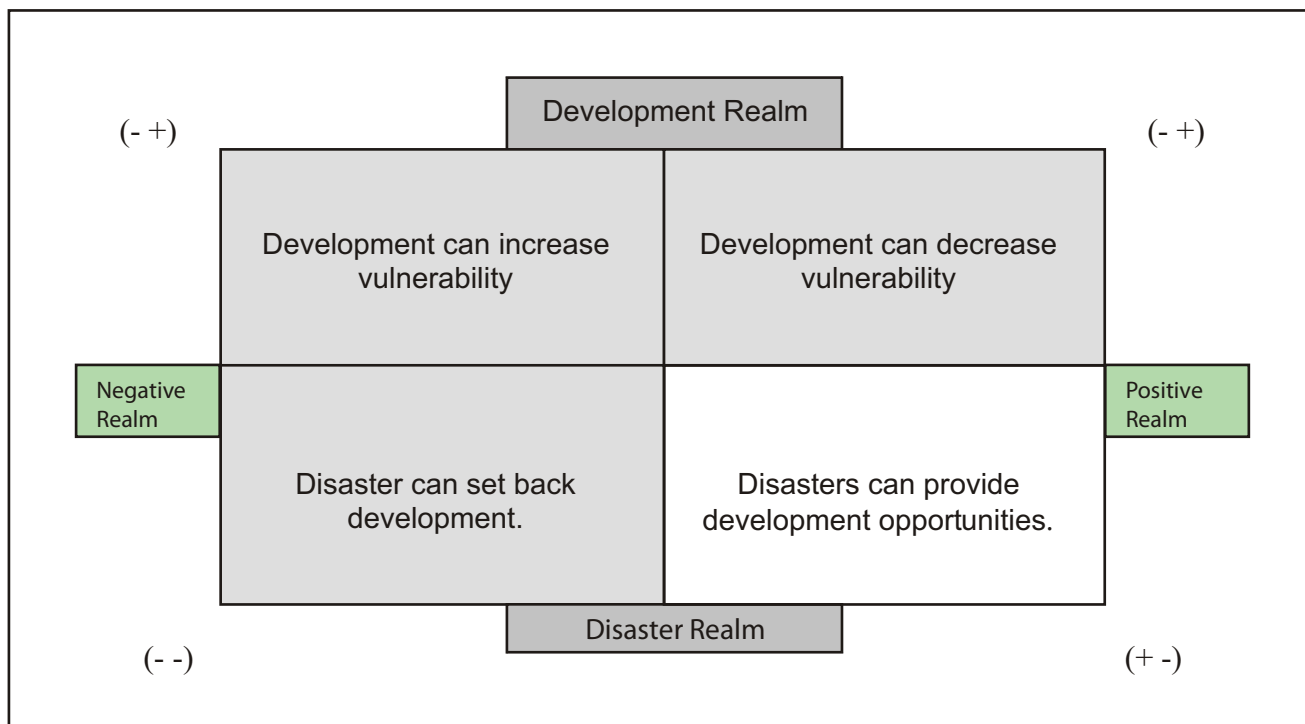

Figure 4.1: Relationship between Disasters and Development

NEGATIVE REALM:

1. **Disasters set back development programme destroying years of development initiatives.**

The examples in this realm include infrastructure destroyed by floods, impact of droughts on the predominantly agricultural economy of a village. The 2004 tsunami for instance, led to major damage and loss in the development sectors of transportation (25.5 million USD), rural and municipal infrastructure (29.5 million USD) and health and education (23.6 million USD). It had a significant impact on the livelihoods of some of the vulnerable sections of society like the fishing community, especially those living in thatched (katcha) houses closer to the beach. Many of these people were below the poverty line and about one -third of them were dalits or tribals. The fisheries sector faced a loss of around 624.6 million USD. (ADB, UN and World Bank Joint Assessment Mission Report, 2005.)

2. **Development programmes can increase an area's vulnerability to disasters.**

Artificial embankments along rivers restrict the natural movement of rivers and prevent spill -over onto the floodplains during monsoons. Human settlements come up on these low-lying floodplains. Often during the monsoon season, very heavy rainfall along with release of water from reservoirs upstream lead to rivers breaching their embankments and flooding human settlements that have encroached onto the floodplains.

POSITIVE REALM:

3. **Rebuilding after a disaster provides significant opportunities to initiate development programs.**

The ownership-driven housing reconstruction programs initiated by the Government of Gujarat after the 2001 Gujarat earthquake helped build local community's skills in safer reconstruction and strengthened community leadership. After the 2004 tsunami, several state governments in India expressed that the disaster presented them with an opportunity to apply the Coastal Regulation Zone (CRZ) notification. This would help them regulate development activities and land-use along India's coasts in the area falling within 500 meters of the high tide line and in the inter-tidal zone, by rebuilding coastal villages out of the immediate CRZ.

4. **Development programs can be designed to decrease the vulnerability to disasters and their negative consequences.**

Rural housing schemes of the GoI , like the Indira Awas Yojna (IAY) and the school buildings/community buildings constructed under Sampoorna Grameen Rojgar Yojna (SGRY) could factor earthquake/cyclone/flood- resistant guidelines. The Ministry of Home Affairs, the nodal ministry for DRM in India and the Ministry of Rural Development (nodal ministry for rural development) are working together to factor disaster -resistant construction guidelines in these development schemes.

The reduction of disaster risk and sustainable human development are therefore mutually supportive goals that also contribute to the reduction of poverty, the empowerment of marginalized social groups and gender equality. Increasingly around the world, Ministries of Planning and Finance, with the support of United Nations and Non Governmental Organizations are assessing development projects in the context of disaster mitigation and are designing disaster recovery programmes with long-term development needs in mind. Thus, DRR is critical to realistically achieve the Millennium Development Goals (MDGs)

What are some existing development schemes of the GoI that can help reduce disaster vulnerabilities?
There are a number of ongoing development initiatives of the Government of India that have included components to help reduce disaster vulnerability. Some of these are:

- Integrated Wasteland Development Programme (IWDP),
- Drought Prone Area Programme (DPAP),
- Desert Development Programme (DDP),
- Flood Control Programmes,
- National Afforestation and Eco development Programme (NA&ED),
- National Rural Health Mission (NHRM),
- Jawaharlal Nehru National Urban Renewal Mission (JNNURM),
- National Cyclone Mitigation Project,
- National Programme for Capacity Building of Engineers in Earthquake Risk Management (NPCBEERM),
- National Programme for Capacity Building of Architects in Earthquake Risk Management (NPCBAERM),
- Accelerated Rural Water Supply Programme (ARWSP),
- Crop Insurance,
- Indira Awaas Yojana (IAY),
- Swarna Jayanti Shahari Rojgar Yojana (SJSRY),
- Sampurna Grameen Rozgar Yojana (SGRY)),
- Food for Work

USEFUL WEB LINKS FOR REFERENCE

1. Reducing Disaster Risk: a challenge for development (UNDP/BCPR, 2004). http://www.undp.org/bcpr/disred/english/publications/publications.htm#kr.

2. Disaster Risk Reduction: a development concern (DFID): http://www.unisdr.org/eng/mdgs-drr/dfid.htm

3. What does Governance have to do with DRR (UNDP 2005)

4. Operational Framework for Mainstreaming DRR

5. Mainstreaming DRR in Development (UNDP, 2005)

6. Disaster Profiles of the Least Developed Countries (UNDP 2001)**:** http://www.undp.org/bcpr/disred/english/publications/publications.htm#kr

Role of NGOs in
Disaster Management (DM)

Duration	60 minutes
Main Points	Role of NGOs in managing disasters
Importance of this session	• The session gives a very practical approach to understand the relation between disasters and development. • Pre disaster scenario • During disasters • Post disasters • Role of NGOs as a supporting unit to the efforts taken by GoI. • NGOs play a major role in preparing the community against disasters.

05
SESSION

Participant Workbook

Role of NGOs in Disaster Management (DM)

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to understand: o The role of NGOs in pre, during and post disaster scenario. o The role of NGOs in awareness generation o The role of NGOs in preparing the community against disasters. o That NGOs and Civil society groups supplement and complement the work of the government.	

Methods of Delivery: Lecture and discussion

Approximate Duration: 60 minutes

Orientation workshop for NGOs on DM in Delhi

The NGOs play an important role in disaster management and provide valuable resources and expert manpower. Their strength lies in the choice of their manpower, the informality in operations and flexibility in procedures. Their capacity to reach out to the community and their sensitivity to local traditions , gives them an added advantage to work together with the community to cope up and respond effectively to disasters. Some of the agencies, both from within and outside the state have provided technical expertise and capabilities can be brought into the fold while managing and responding to a disaster. These organisations enjoy a fair degree of autonomy and flexibility and hence, can respond to changing needs immediately.

NGOs with their its flexibility in approach can work at all levels; be it at the household or state level and can be a service provider, a facilitator or a promoter. Their role is multifarious and can be changed with the changing situation. Some of the most important functions which the NGOs can perform during various phases of DRR are listed below:

Role of NGOs in DM

- Creating Awareness
- Early Warning Dissemination
- Resource mobilization for relief & rehabilitation
- Capacity Building at different levels
- Promoting Alternative Technology for Housing/Agriculture Sectors etc.
- Linkage between Service Providers and End Users

Role of NGOs in Disaster Preparedness

- Sensitizing Community/ other stakeholders
- Facilitation of the Process of Contingency Plan
- Vulnerability & Risk Assessment
- Development of Resource Inventory
- Formation and Capacity Building of Taskforce at different Levels through training
- Strengthening the Taskforce groups by providing Rescue Operation Kits /First Aid Kits etc
- Facilitating the Process Of Mock Drills

Role in Emergency Responses

- Dissemination of Early Warning
- Helping in Evacuation/Rescue Operation
- Providing Services- Basic Need -Shelter,Food, Medicine ,Water etc.
- Providing Human Resources
- Helping in Protection of Vulnerable & Risk Areas

Role of NGOs in Relief & Rehabilitation

- Damage Assessment
- Distribution/ Helping in Distribution of Relief Materials
- Awareness Generation for Controlling Epidemics
- Mobilization of Resources
- Promotion of Alternative Technology to reduce the cost
- Gap Analysis Requirement Vs. Availability

Role of NGOs in Mitigation

- Providing Services to the Vulnerable Areas
- Establishing Grain/Seed Banks/ alternative income generation activities
- Establishing Network among Services Providers
- Promoting Alternative Technology in Reduction of Vulnerability
- Linkage of Research with Development Programme
- Promoting Community Based Institutions to Sustain the Activities
- Helping in Advocacy/ Policy Formulation

Who are the DRM Stakeholders in India?

Duration	60 minutes
Main Points	• Disasters affect almost every aspect of human life and thus DRM is a mutli-disciplinary and mutli-sectoral field of work. • There are a range of stakeholders involved in DM and risk reduction processes in India. • The GoI has the primary responsibility for coordinating activities and to provide financial and policy guidance. • The communities at risk should be at the centre of DRM and thus Community Based Disaster Management approaches to DRM are gaining popularity. • The UN system supports the governments work related to DRM. Different UN agencies coordinate their work with the government through the United Nations Disaster Management Teams. • NGOs and civil society groups supplement and compliment the work of the governments. They are also involved in innovative approaches to DRM. • The corporate sector and the media are developing a more holistic role for themselves in DRM, beyond disaster response to risk reduction. The GoI's approach has also seen a shift in moving from emergency response to risk management and reduction. It has built and is building Institutional and Legislative Systems (ILS) to help mainstream its work in DRM within its development work.
Importance of this session	In follow-up to Session 5, this session will provide focussed coverage on the range of DRM stakeholders in India. It will detail the roles and responsibilities of these stakeholders and throw light on their relationships. It will specifically cover the government's mandate, systems and structures related to DRM, especially the newly emerging arrangements and regional partnerships.

Participant Workbook

Who are the DRM Stakeholders in India?

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to: 1. Describe the range of DRM stakeholders/actors in India including: • The Government of India (at the national, state, district and lower administrative levels) • The UN system • The NGOs • The Civil Society Groups • The Communities at Risk • The Corporate Sector • The Media • The Donors 2. Explain the role of the GoI in DRM through information on its: a. Structure and systems: Central, state, division, district, block, city and village level (General and DRM specific) • Relevant Institutional and Legislative Systems: acts, policies, institutes etc.	

Methods of Delivery: Lecture and discussion

Approximate Duration: **60 minutes**

Primary responsibility for all aspects of DM rests with the GoI DM in India falls within the State Subject List; while administrative and financial aspects are guided by central guidelines. The District Magistrate's Office and the PRIs in the rural areas and the Ward Offices at the city level are key players in responding to and planning for disaster risk reduction in India. Various ILS have been set in place by the government to support its DRM mandate. The following decision-making and standing bodies are responsible for DM at the Central level:

1. Union Cabinet, headed by the Prime Minister

2. National Crisis Management Committee (NCMC), under the chairmanship of the Cabinet Secretary.

3. National Crisis Management Group (NCMG) with the Central Relief Commissioner in the MHA as the Chairman and senior officers from various concerned Ministries as members. In the event of a disaster this National Crisis Management Group, in the event of a disaster, meets frequently to review the relief operations and extends all possible assistance required by the affected states to overcome the situation effectively. The financial assistance from the Central government to the affected states is provided through the two funds as discussed below.

    a) **Calamity Relief Fund (CRF):** This is a fund generated by the Government to meet the expenditure for providing immediate relief to the victims of cyclone, drought, earthquake, fire, flood and hailstorm. Sometimes this is also used to restore drinking water sources, communication etc. The amount of annual contribution to the CRF of each State for each of the financial year is as indicated by Finance Commission. Of the total contribution indicated, the GoI contributes 75 per cent of the total yearly allocation in the form of non plan grant, and the balance amount is contributed by the concerned State Government.

    b) **National Calamity Contingency Fund (NCCF):** The NCCF came into force with effect from the financial year 2000-01. This amount is used to provide immediate relief and rehabilitation in case the State is unable to cope up with its available Calamity Relief Fund (CRF). A list of items and norms of expenditure for assistance chargeable to CRF/ NCCF in the wake of natural calamities is prescribed in detail from time to time.

A range of other stakeholders are involved in various disaster interventions in the country apart from the Government. These are:

a. **Communities at Risk:** The local communities are not only the first sufferers after a disaster but also the first responders. Their active role helps give a reality check on the external stakeholders' assessment of risks and strategies for risk reduction. They are the most sustainable risk reduction actors in any context. The significance of their role has led most DM actors to advocate for Community Based Disaster Management (CBDM).

b. **Civil Society Actors:** They are organized community bodies with significant grass-root level experience and presence, which is crucial for executing DRR practices at the community level. These include NGOs, CBOs, Self Help Groups (SHG), Community Networks and VBOs. Some examples are Women's Income Generation Groups, Water User Association, Residents Welfare Associations, School Education Committees, Hospital Advisory Committees, Nehru Yuvak Kendra Sangathan (NYKS), National Service Scheme (NSS) and National Cadet Corps (NCC)

c. **NGOs** at the local, national and international levels working on development related issues in India have been actively involved for decades in DM, primarily in post-disaster relief operations. Many have recently made a shift to consider disaster preparedness and mitigation measures with dedicated programs and projects. They often act as a bridge between the administration and the society they supplement the government initiatives in DRM and are involved in piloting risk reduction projects, building

Ham radio training to the community, in Orissa

awareness, training stakeholders in disaster response and preparedness. For a list of Indian NGOs working on DRM , go to the website: http://www.indianngos.com/issue/disaster/

d. **Indian Red Cross Society:** The Indian Red Cross is a voluntary humanitarian organization with a network of over 700 branches and thousands of volunteers throughout the country. It provides relief in times of disasters/emergencies and promotes health care and preparedness of the vulnerable people and communities. The International Red Cross and Red Crescent Movement are the leading members of the largest independent humanitarian organisation in the world, the International Red Cross & Red Crescent Movement. http://www.indianredcross.org/

e. **United Nations Country Team** agencies in India provide advice and assistance to the government, in accordance with their agency mandate and the resources available. In doing so, each agency is accountable to its own governing body. It is also called upon to act as a member of the UN Disaster Management Team (UNDMT). Some of the key UN agencies working on DRM in India are FAO, ILO, UNDP, UNESCO, UNFPA, UNICEF, UNIDO, UNIFEM, UNV, WFP and WHO. www.un.org.in.

Solution Exchange is an initiative of the United Nations Country Team in India that offers communities of development practitioners, a UN-sponsored space where they can provide and benefit from each other's solutions to the day-to-day challenges they face. The Disaster Management Community was launched in April 2007 for Disaster Management professionals to turn to their peers across India for solutions to the day-to-day challenges they face. For details, please visit http://www.solutionexchange-un.net.in/drm.htm

f. **The Corporate Sector:** In extension to its strong social commitment for holistic national development, the Confederation of Indian Industries (CII) has been working in disaster response and risk management. This 110- year old organization has the direct membership of 5,800 industries and indirect membership of 75,000 industries with 37 per cent small-scale industries. The CII's past association with disaster management has been in the post- disaster phase. It has recently adopted a holistic three-tier approach to developing DM capabilities for self-protection (e.g. safeguarding industrial, assets, infrastructure, production processes and personnel); community (eg: generating awareness, ensuring safety of areas neighbouring industries) and national (eg: pre-disaster protocols with administration). Some members of the corporate sector leading in building DRM capacities are the Reliance Industries; the Union Bank of India, the Apollo Hospitals etc.

g. **The Media:** These include local, regional, national and international media including the print (newspapers and magazines) and audio-visual (such as radio and television). Owing to the news value, the media is quick to cover disasters consistently till it retains the news value. In addition to supplying crucial information on the affected and help lines during rapid- onset disasters, the media is also

involved in setting up relief funds, capturing and sharing relief and recovery practices, rebuilding villages, identifying gaps for the attention of disaster stakeholders and raising public consciousness. Their message can also help build preparedness and mitigation, for example potential threats to epidemics like the Avian Flu. They have also covered slow onset disasters like the droughts in Rajasthan from various angles, be it political or social, specially highlighting the 'flawed' development practices. There has been a change in media coverage over the years, from relief by armed forces, to the role of civil society; from demand for help to communicating the nature of help needed ; from criticism of the government to highlighting improved preparedness among authorities, and most importantly, the concept of citizen journalism.

h. **Donors:** These include regional and international agencies, International Financial Institutions (IFIs) and bilateral donors that are working in the area of development. Some prominent donors are the American India Foundation (AIF), Ford Foundation, Department for International Development, United Kingdom (DFID), European Commission, United States Agency for International Development (USAID), the Australian government's overseas aid program (AusAID), European Commission's Humanitarian Aid Department (ECHO), World Bank, Asian Development Bank, Government of Japan, Netherlands and others. They are actively involved in conducting post-disaster assessments and in funding government and non-government initiatives related to disaster response, recovery and preparedness.

SESSION 7

Feedback and Closing Day1

Duration	15 minutes
Main Points	In this session the participants are expected to fill up the session wise feedback form. This will help us to rate the sessions and improve these sessions based on the feedback received from the participants. The feedback could be on the logistics arrangements provided and also on each of the technical sessions. We would therefore request you to give us an honest feedback to make the future training programmes a success. The feedback form is attached at the end for reference.
Importance of this session	The session is very important as it will help the organizers determine the course of action for the future. Session wise feedback received from the participants will help in improving them qualitatively.

07
SESSION

Participant Workbook

Feedback and Closin

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to: • Identify the positive and negative aspects of the training programme. • Learn from the days proceedings	

Methods of Delivery: Self

Approximate Duration: 15 minutes

Duration	15 minutes
Main Points	The main objective of this session is to recapitulate the discussions held on Day 1. The task can be assigned to one participant or a couple of them. This session will help all the participants to reiterate their learning and clarify any area which needs more discussion.
Importance of this session	This session is very important as it will help the organizers determine the course of action for the next day. The session tries to recapitulate the discussions held on Day 1. This session also helps the participants to clarify their doubts related to the sessions held on that day.

08
SESSION

Participant Workbook

Recap of Day 1

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to: • Recapitulate the discussion held on Day 1 during the training programme. • Clarify doubts related to the sessions held on Day 1. • Know about the sessions to be held on Day 2.	

Methods of Delivery: Presentation and discussion by participants

Approximate Duration: 15 minutes

PART - 2

Participatory Rural Appraisal (PRA)

Duration	120 minutes
Main Points	This session tries to teach the participants methods to involve the community and prepare a Community Based DM plan with the various tools available. This session tries to explain • The evolution of PRA/RRA/PLA. • Key Principles for conducting PRA • PRA Tools • Organizing a PRA
Importance of this session	The session is very important and crucial as it helps the participants to have a better understanding of various tools available. This approach is particularly useful as it enables vulnerable groups/community to be better prepared.

09
SESSION

Participant Workbook

Participatory Rural Appraisal (PRA)

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to: • Know the various tools available - In-depth interview - Semi-structured Interview - Informal conversational interview - Standardized open ended interview - Interview with independent responders - Focused group discussions - Community Interviews - Diagrammatic techniques a) Mapping technique b) Ranking and scoring c) Trend analysis • The key principals for conducting a PRA	

Methods of Delivery: Lecture and discussion

Approximate Duration: 120 minutes

PRA is a label given to a growing family of participatory approaches and methods that emphasize local knowledge and enable local people to make their own appraisal, analysis, and plans. Robert Chamber's approach on PRA builds up on the Rapid Rural Appraisal (RRA), which emerged in the late 1970's. RRA called for greater attention to local people's knowledge, but still relied on the "expert" to obtain and organize this knowledge. PRA, came about in the late 1980s and is still evolving having shifted its focus from gathering indigenous people's knowledge to encouraging their analytical skills. The PRA leader aims to facilitate local peoples' empowerment so that they can appraise, analyze and solve their own development plans. This approach is highly critical of western experts, who recommended top-down technique to development, and accepts the knowledge and analytical skills of the poor that can be brought to light and strengthened through participatory methods, no matter what their education. (Chambers, 1994).

PRA is above all a method, emphasizing experimental innovation rather than theories and abstractions. It has developed a cluster of techniques, usually with groups rather than individuals that can be very easily assessed and understood. It comprises of a set of techniques or "basket of techniques" aimed at shared learning between the local people and outsiders, gathering information through informal discussion for need assessment planning, implementation and monitoring.

PRA uses group animation and exercise to facilitate information sharing, analysis and action among stakeholders. Although originally developed for use in rural areas, PRA has been employed successfully in a variety of settings. The purpose of PRA is to enable development practitioners, government officials and local people to work together and plan context appropriate programs. The PRA techniques are normally used in the field to gather qualitative data, often to contemplate quantitative data.

PRA emerged as an alternative to the following two common qualitative methods.
    a) questionnaires which often proved lengthy, costly and prone to errors and
    b) rushed site visit by researchers to collect haphazard data from local elites.

PRA uses a combination of approaches and methods to enable rural people to share, enhance and analyze their knowledge of life. This then becomes the combination that helps them to plan and to act. PRA methods are based on simple principles:

- A reversal of learning, to learn with and from rural people, directly on the site, face- to- face, gaining from local, physical, technical and social knowledge.

- Learning rapidly and progressively, with flexible use of methods, improvisation and cross checking.

- Seeking diversity. Looking for contradictions, anomalies and differences.

- Triangulating. Using a range of methods to ensure reliability and validity, and to enable cross checking

- Facilitating by the local people. Facilitating investigation, analysis, presentation and learning by rural people themselves, so that they present and own their own outcomes.

The PRA approach is particularly useful as it enables vulnerable groups in a community to have a voice and impart their views on issues of transportation and access from which they are most often excluded. Hence, from the participation by different groups such as women, the elderly, disabled and even school children, researchers and other professionals are able to paint a realistic picture of community life, and through use of different PRA techniques, can answer the questions relevant to their needs.

2. KEY PRINCIPALS FOR CONDUCTING PRA'S

2.1 Preparation:
There is a need to ensure that all available secondary data on the locality and the subject has been reviewed, allowing suitable villages to be identified to capture a broad sample, before surveying commences.

It is also advisable to enlist the help of external collaborators, preferably with detailed knowledge of the locality, and bearing no prejudice or hierarchical position.

2.2 Facilitation:
It is important that the external professional displays good facilitation skills, that enable local people to undertake some or all of the investigation, mapping:, modeling, diagramming, ranking, scoring, quantification, analysis, presentation and planning themselves. Though the analysis is then shared with the outsiders, the information stays with the people who generate it.

In order to capture all that is to be observed and recorded during a PRA, it is recommended that a minimum of two to three external facilitators are deployed. This will enable detailed recording of information, whilst a facilitator observes the interaction between the participants. It is also useful to generate some feedback from the villagers surveyed on the design methods employed.

2.3 Behaviour and Attitudes:
The behaviour and attitude of external facilitators are of primary importance, even more important than the methods used. Proper attitude encompasses critical self-awareness and embracing errors, sitting down, listening and learning, not lecturing but allowing all villagers to be the main teachers and analysts. This implies that outsiders must understand how their role in community interaction changes and what their behaviour should be if local people are to benefit from this.

2.4 Longevity:
Participatory approaches cannot be substituted and are an integral part of, long -term dialogue and sustained interaction. A brief participatory exercise with a group of local people will not lead to positive and lasting changes. PRAs work more effectively when they are carried out over a sufficient length of time, with the facilitators living amongst the community under survey, absorbing themselves in community life. In this manner, mutual respect will be gained, and informal information can be extracted. In addition, the longer the survey, the greater and more representatives the samples will be.

3. STRENGTHS OF PRA

3.1 Visibility:
One of the strengths of PRA is that most of the methods are visual and, therefore accessible to a larger group of people. The group debates that ensue stimulate improvisation resulting in new applications. Group activities can also be very dynamic and promote discussions on issues other than what has been programmed. .

3.2 Participation:
Participation of the local in PRA activities is essential to its value as a research and planning method and as a means for diffusing the participatory approach to development.

3.3 Teamwork:
As validity of PRA data relies on informal interaction, it is best done by a team of local people with a

perspective and knowledge of the area's conditions, traditions, and social structure, and can include nationals or expatriates with a complementary mix of multi- disciplinary backgrounds and experience. A well balanced team will represent the diversity of socio-economic, cultural, gender, and generational perspectives.

3.4 Flexibility:
PRA does not provide blueprints for its practitioners. The combination of techniques that is appropriate in a particular development context will be determined by such variables as the size and skill mix of the PRA team, the time and resources available, and the topic and location of the work.

3.5 Optimal Ignorance:
To be efficient in terms of time and resources, PRA work intends to gather just enough information to make the necessary recommendations and decisions.

3.6 Triangulation:
This is a method of linking different survey techniques in order to cross check the information collected. These are often carried out in groups of three to increase the credibility of each survey technique. Triangulation is of a particular use when employing mapping, ranking and scoring, flow diagrams, Venn diagrams and wealth ranking techniques, as these involve group participation which may require some verification.

3.7 Observation:
Prior to conducting a PRA, realistic objectives of surveys need to be laid down and researcher should be clear in their minds about what exactly they are supposed to do. . Although much of the techniques employed in PRA are flexible in their content and design, it is important to have some pre-determined questions in mind at all times. In order to capture the true picture of the livelihoods of the rural poor in its entirety researchers should act on what they see, and recognize distinctions in gender, age and wealth etc. amongst the community. Observation also aids improvisation, particularly when carrying out diagramming techniques, allowing household implementations for example to be used in the PRA methods.

4. PRA TOOLS

PRA is an exercise in communication and transfer of knowledge. It uses "a basket of techniques" from which those most appropriate for the project can be selected to gather correct information from the community. Regardless of whether it is carried out as part of project identification or appraisal or as part of the country economics and sector work, the learning by doing and teamwork spirit of PRA requires transparent procedures. For that reason, a series of open meetings generally frame the sequence of PRA activities. Other tools common to measure qualitative data in PRA are:

In depth Interviews:

In-depth interviewing entails asking questions, listening to and recording the answers, and then posing additional questions to clarify or expand on a particular issue. Questions are open- ended and respondents are encouraged to express their perceptions in their own words. It aims at understanding the beneficiaries' view of program, their terminology and judgments.

There are four basic approaches to in-depth interviewing. These differ mainly in the extent to which the interview questions are determined and standardized beforehand: semi-structured interview, the informal conversational interview, and the standardized open-ended interview. Each approach serves a different purpose and has different preparation and instrumentation requirement.

a) **Semi-structured Interviewing:**

Interviewing is one of the techniques used in development studies. Participatory methods have contributed to adjusting the interview to make it more interactive, while still controlled and structured. In this technique some of the questions and topics are pre-determined, while the majority of the questions are formulated during the interview. Questions are asked according to a flexible checklist and not from a standardized questionnaire. This method is often time consuming as it is conducted on a one to one basis, and therefore should be used in addition to the group survey method. However, the technique is very useful in extracting information from particular members of the community.

b) **Informal Conversational Interview:**

This technique relies on the spontaneous generation of questions in the natural flow of an interaction. This type of interview is appropriate when the evaluator wants to maintain maximum flexibility to pursue questioning in what ever direction appears to be appropriate depending on the information that emerges from observing a particular setting, or from talking to one or more individuals in that setting. Under these circumstances, it is not possible to have a pre-determined set of questions. The strength of this approach is that the interviewer is flexible and highly responsive to the individual differences, situational changes, and emerging new information. The weakness is that it may generate (less systematic) data that is difficult and time consuming to clarify and analyze.

c) **Standardized Open ended Interview:**

It consists of a set of open-ended questions carefully worded and arranged in advance. The interviewer asks the same question to each of the responder with essentially the same words and in the same sequence. This type of interview may be particularly appropriate when there are several interviewers and the evaluator wants to minimize the variation in the question they pose. It is also useful when it is desirable to have the same type of response from each interviewer at several points in time or when there are time constraints for data collection and analysis. But, this technique allows the evaluator to collect detailed data systematically and facilitate probability among all respondents. The weakness of this approach is that it does not permit the interviewer to pursue topics or issues that are not anticipated when the interview instruments are elaborated upon. This also limits the use of alternative lines of questioning from which individual differences and circumstances can be fully incorporated in the evaluation.

Interview with Individual Respondents:-

The common type of interview of individuals is the "Key Informant Interview". This is done for an individual, who as a result of his/her knowledge, previous experience or social status in a community, has access to information valuable for the evaluator. Information that is sought could provide insight about the functioning of the society, their problems and the needs. Key informants are a source of information which can assist in understanding the context of the programme or project. Since the selection of the key informant is not random, the issue of bias always arises. Another difficulty of this method is in separating the informants' potential partiality to form a balanced view of the situation.

Focused Group Discussions (FGD):-

- In this technique the researcher selects a particular topic and carries out a discussion with the community. The interview is mainly with smaller,

homogeneous groups with similar background and experience e.g with only the women folk of scheduled caste community, or with children within the age group of 15 years etc.

- It facilitates more participation and in-depth discussions as the group with which the researcher is having the discussion is very small and homogenous. Thus, the main purpose is to elicit ideas, insights and experiences in a social context where people stimulate each other and consider their own views along with those of others.

- It acts as a quality control mechanism as one can cross check the data collected from the community.

- These interviews are conducted several times with different groups so that the evaluator can identify trends in the perceptions and opinions expressed. The interviewer acts as a facilitator introducing the subject, guiding the discussion and encouraging all members to express their opinions. One of the main advantages of this technique is that interactions among the members weed out false and extreme views, thus providing a quality control mechanism. This however requires a skillful facilitator to ensure an even participation from all members.

Community Interviews:
These are mainly carried out in public meetings in which the whole community is consulted. These interviews involve a set of factually based fairly close ended questions. Once the interviewers pose the questions, the group will interact to get the consensus around the answer. Interviewing the community as a whole can provide valuable information on how well a project is working. The major weaknesses of this method are that participation may be limited to a few status members of the community, or the community leaders may use the forum to seek consensus on their own views and preferences.

DIAGRAMMATIC TECHNIQUES
Some of the key Diagrammatic techniques are:

- Mapping Techniques

- Ranking Exercise

- Trend Analysis

Visual basic techniques are important tools for enhancing a shared understanding between outsiders and locals, but may hide important differences of opinion and perspective when drawn in group settings, and may not reveal culture based information and beliefs adequately. They therefore need to be complemented with other techniques such as interviewing and observation, to cross check and supplement the results of diagramming.
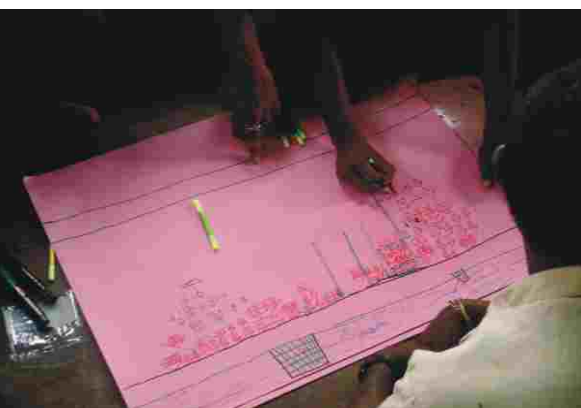
Mapping exercise as used in PRA activity not only provides the evaluator with information about the physical characteristics of the community, but also reveals the socio economic conditions and how the participants perceive their community. The maps are usually drawn by the villagers on the ground by using chalks or locally available resources or on a large sheet of paper. The exercise often attracts attention and generates useful debate among the mapmakers and the onlookers. The final map is then recorded by the PRA team to be used in subsequent discussions.

Various thematic maps can be developed based on the focus of the evaluation:

- Historical Map: It documents the changes that have occurred in the community and can be used, for example, to generate discussion on the causes and effects of environmental degradation.

- Social Map: It illustrates the individual households that make up the community and different symbols can be used to show particular household characteristics relative wealth, levels of resources used, number of school aged children in or out of school, infrastructure, etc

- Personal Maps: these are the ones drawn by individuals rather than groups. They can show the perspectives of different sections of the community in terms of the boundaries of the community, the place most important to them, or their vision of how the community can be improved.

- Layout Map
  o Whole layout of the village is shown in the map

- Transact Map
  o Cross section of a part of the landscape which will help us to know more about the area

- Resource Map
  o All available resources in the area like roads, health centers, grain bank etc.

- Wealth Map
  o Identifying the wealth and influence in the village

Flow Diagram

These are used for the systematic analysis of a wide range of issues where a series of causes and effects relationships are examined. These can act as a basis for discussing the relationship between different groups, individuals or issues, and can demonstrate potential multiplier effects. In general, a flow diagram has the main issue written in the central circle, with elements radiating from it. The diagram should also be used as a retrospective tool, in order to prevent it becoming a 'wish list' for villagers.

Another type of mapping exercise is the **Venn diagrams or the Chapatti diagram.** A Venn diagram is used to depict key institutions, organizations and individuals and their interaction with the local community. Key players in the decision- making are shown, and the institution analyzed can be both local ones internal to the community, and the external ones which have a local influence. On the Venn diagram, each institution is represented usually by a circle. The size of the circle represents the importance, significance or power of that institution. The degree of overlap between the circles represents the level of interaction that occurs.

The organizations, individuals, and decision makers are represented on circular cards rather as this leads to greater discussion and the flexibility to move organizations around as consensus is reached on its importance.

Ranking and Scoring Exercise

There are three different ranking techniques commonly used in participatory evaluation: problem ranking, preference ranking and wealth ranking.

a) Problem Ranking: Several different techniques can be used to elicit the locals perception of the most important problems they face. One way of carrying out the exercise is to ask the participants to identify six major problems in their community in general or by focusing a particular project, and then asking them to rank these problems in order of importance.

A more systematic technique is called as the 'pair wise ranking,' which uses cards to represent different problems. The facilitator shows the "Problem cards" two at a time, asking, "which is a bigger problem?" As the participants make the comparisons, the results are recorded in a matrix. The final result is obtained by counting the number of times a problem "won" over the others and arranging them in appropriate order.

b) Preference Ranking: in this also the participants assess different items or options, using criteria that they themselves identify. A common form of preference ranking uses a Matrix with item/ options along the horizontal axis and the elicited criteria on the Vertical axis. This technique works well as an introductory exercise in all group discussions as it can reveal interesting differences among the group members. These discrepancies can be explored later during the discussion or subsequent interviews with the individuals. Gender differences are particularly worth exploring, as men and women often have quite different preferences and criteria for those preferences.

c) Wealth Ranking: it enables the villagers to divide the households in the community according to the economic and other 'wellbeing' categories. This helps in identifying the target group members for projects, especially the poorer section of the society. It also subdivides the larger group for further PRA discussions. Differences in wealth, particularly well being, affect people's perceptions and coping strategies. The most common version of this technique involves a series of individuals, a focus group of community members, ranking their entire community. The PRA facilitators introduce the technique using local terms for wealth and property and encourage participants to first discuss how they define these terms and how they would describe a poor or a rich household (that is, their criteria for assessing a household's relative wealth). It is important to understand this prior to further appraisal or planning.

d) **Scoring**
When scoring there are a number of different methods that can be used that have individual strengths and weaknesses depending on the context and desired 'output'. Free scoring enables participants to score each element against each criteria with no limits placed on the scores.
Closed scoring can be done in three ways:

1. Each 'box' can be scored between eg. 0-5, this is repeated over the whole matrix

2. A fixed number of points can be awarded for each criterion (row or column) and these are distributed between the elements in that row or column in relation to their perceived importance.

3. A fixed number of points are allowed for the entire matrix, and these must be distributed between both elements and criteria as participants decide.

e) **Trend Analysis**
Some of the visual basic techniques used to conduct community trend analysis are: seasonal calendars and daily activity charts.

Seasonal Calendars: Seasonal calendars drawn by the local people are very useful means of generating information about trends within the community and identifying periods of particular stress and vulnerability. Best undertaken in the context of a group discussion (to help verify the information obtained) seasonal calendars are often drawn on the ground with the relative trends using stones or seeds, as in a preference ranking matrix. In other instances, simple line graphs can be drawn to show seasonal increases or decreases. A whole series of seasonal variables can be included in one calendar to give an overview of the situation throughout the year. These variables can include rainfall, crop sequences, labor demand, availability of paid employment, out migration, incidence of human diseases, expenditure levels and so on.

On the whole, the trend need only be shown as rough, qualitative ones. Quantification is rarely necessary for the purpose of the PRA. The finished calendars can be useful as a way of indicating, for e.g, whether project related activities generate alternative sources of income or food when they are needed the most.

Organizing a PRA

Before a Field work:
A typical PRA activity involves a team of people working two to three weeks on workshop discussion, analyses, and field work. Several organizational aspects should be considered:

- Carefully review and access secondary data

- Developing sub topics- Brainstorming sessions are very essential to identify these sub topics

- Have funds for purchasing refreshments for the community meeting during the PRA, and supplies such as flip chart paper and markers.

- Training the team may be required so that every member has the same level of understanding.

- PRA results are influenced by the length of time allowed to conduct the exercise.

- Reports are best written immediately after the field work period, based on notes from PRA team members. A preliminary report should be available within a week or so of the fieldwork, and the final report should be made available to all participants and the local institutions that were involved.

During a Field Work:
- Build rapport develop communication and working skills with the locals especially the village leader, PRI members, teachers, CBOs and NGOs, SHG group members etc.

- Greet the villagers in their traditional way.

- Try to socialize as much as you can in keeping with their culture. It is always better to show due respect to the culture of a community.

- Query knowledgeable people about the topic and about their village

- Try to meet the village leader/officials/ PRIs in that area

- Clearly explain the reason of your visit to the villagers so that there is no doubt in their mind about the purpose. This will help the villagers to be very clear and open in their discussions.

- Choose time and venue that is convenient and suited to the local people. . Prefer having a meeting in a public place and not in the premises of any individual.

- The original copy of the maps and the information collected should be available with the community. The researcher gets a copy of it along with him or her.

After the Field Work
- Discussions should be carried out regarding the information collected. Identify gaps in the information, so that these can be filled up by going to the village and talking to the people again.

- Findings should be presented on papers, seminars, workshops so that the information collected and its findings are shared among a larger group.

- Comments / suggestions are taken note of and should be incorporated in the final report that is being prepared.

Do's and Don'ts for the researcher

- Develop interview guide (Paste it on the back of the note book). It is preferable not to read it in front of the respondents. Try to memorize the sequence of questions that need to be discussed.

- Presentation must be consistent and congruent with situation

- In visiting a poor rural community-
    – don't sit while others stand
    – don't interview a person of opposite sex alone
    – Be aware and sensitive to local customs, method of greeting etc

- Carefully explain who you are, and the reason for the request for the interview

- Use open ended questions- that allows participants to add the info he/see feels appropriate

- The facilitator should be a facilitator not the controller

- Avoid raising expectations

- Avoid lecturing listen and learn

- Stay in the village through out the exercise.

Conclusion

A PRA exercise builds on and acknowledges local knowledge available within the community. While the facilitator can duplicate the local knowledge the original concept will always remain the essence of the community which generated and shared it.

Duration	90 minutes

Main Points	• Need for Community Planning
	• Steps/components of preparation of a Community Based DM plan.
	    • Formation of DM committee
	    • Review and analysis of past disasters
	    • Seasonality calendar of past disasters.
	    • Mapping exercise
	    • Formation of DMTs
	    • Mock drill
	    • Identification of Hazard specific mitigation activities.
	    • Community Contingency Fund
	• Linkages of DM Plans with Development Plans.

Importance of this session	The session is one of the most important sessions as it provides an overall understanding of the steps and components for the preparation of the Community Based DM Planning. The approach being very participatory, the participants can relate this session with the previous i.e. Session 09 on PRA and try to link the various tools that can be used to develop a plan.

Participant Workbook

Preparation of Community Based DM Plan

	Participant Notes

Enabling Objectives
 	
At the end of the session, the participants will be able to:
 	
• Know the various tools available to include:
 	
   - In-depth interview
 	
   - Semi-structured Interview
 	
   - Informal conversational interview
 	
   - Standardized open ended interview
 	
   - Interview with independent responders
 	
   - Focused group discussions
 	
   - Community Interviews
 	
   - Diagrammatic techniques
 	
d) Mapping technique
 	
e) Ranking and scoring
 	
f) Trend analysis
 	
• The key principals for conducting a PRA	

Methods of Delivery: Lecture, discussion and group activity

Approximate Duration: 90 minutes

Community participation and ownership in disaster risk reduction is one of the key factors in reducing vulnerabilities of people and minimizing the loss. The Government of India GoI's focus on a Community Based Disaster Preparedness (CBDP) approach promotes community involvement and strengthens its capacities for vulnerability reduction through decentralized planning process. This session deals with the concept, component and some of the best practices in India.

1. Community Based Disaster Preparedness

Analyses of response to past disasters have highlighted reaching out to the victims within the critical period during an emergency as a major requirement to protect people and assets. This has resulted in developing mechanisms to mitigate disasters at the grassroots level through participation of communities. Communities being the first responder and having more contextual familiarity with hazards and available resources are in a better position to plan and execute immediate rescue and relief actions. In areas that have experienced repeated disasters, communities have realized the need to work out a plan to prevent losses and at the same time enable faster recovery in the event of an emergency situation. Therefore in order to convert this realization into an effective plan, guidelines which will help them to prepare their own Community Based DM plans to safeguard lives, livelihood and property need to be given.

The CBDP planning referred to in the following sections pertains to preparedness, mitigation and response plans.

The primary goal of CBDP is to reduce vulnerability of the concerned community and strengthen its existing capacity to cope with disasters. The approach of preparing the CBDP plans considers people's participation a necessary pre-requisite for disaster management. Involving the community in the preparatory phase not only increases the possibility of coordinated-action to help in mitigating disasters but also brings them together to address the issue collectively. Evidences exist of collective and coordinated action yielding good results, lessening the impact of disaster to a great extent.

Several organizations have been supporting communities in developing CBDP. However concepts vary. For some, CBDP means getting the communities organized to maintain a cyclone structure with a well-developed evacuation plan. Similarly, the process followed also differs. Some organizations develop the plan and explain the components to the communities, while others prefer to develop the plan with the involvement of the communities. Most of these processes remain outside the purview of the Government and have the inherent danger of communities forgetting the roles and responsibilities, especially if the plan is used after a period of time.

2. Components of CBDP

a. Disaster Management Committee (DMC):
A Village Disaster Management Committee (VDMC) is formed in each village and is responsible for initiating disaster preparedness activities. It consists of locally elected representatives, grass root government functionaries, local NGOs/Community Based Organizations (CBOs, members of youth groups such as the National Service Scheme (NSS) and Nehru Yuva Kendra Sangathan (NYKS), women groups, youth club members, grass root level government functionaries, etc. The size of a VDMC is based on the population and need of the villagers. The Head of the VDMC takes a lead in mobilizing the community for preparation of the CBDP plans.

b. Review & Analysis of Past Disasters:
This refers to prioritizing disasters based on its frequency and analysis of the estimated losses and can be undertaken by taking the help of elderly people of the village. The villagers analyze the losses they had incurred during various disasters and learn the best practices carried out. This is an important activity as it forms the basis for preparedness and mitigation plans.

c. Seasonality Calendar of Disasters:
While analyzing the past experiences pertaining to various natural disasters, communities develop the seasonality calendar based on the occurrence of disaster events.

d. Mapping Exercises:
One of the most important activities of the CBDP is the mapping of risk, vulnerabilities and capacities of the village by the community itself. This is done through a Participatory Rural Appraisal (PRA) exercise. Before the mapping exercise starts, the community members first discuss the experience of previous disasters they have faced or what disasters they may face in future. It aims to provide a pictorial base to the planning process especially for the semi literate populace and ensures maximum community involvement across gender, caste and other divides. It has also been found to be very effective in raising awareness among the community thereby enhancing its participation in problem identification. The maps generate awareness among the community about the avenues for smooth evacuation during any imminent disaster. The strategy adopted is to use locally available resources rather than depending on the external agencies for help and support. The villagers/ community members are encouraged to draw maps on the ground using locally available materials such as stone, sand and various colour powders for different items and indicators. The maps drawn need not be to scale. The types of maps are as follows:

Resources Map: Resource mapping focuses on identifying locally available assets and resources that can be utilized for building capacities of the community during and after disasters. Apart from infrastructure and funds, this could be about individuals with specific skills, local institutions and people's knowledge. A resource map is therefore not limited to a map depicting the available resources only but also plotting of the distribution, access and its use by taking into consideration prevailing sensitiveness within the village.

Risk and vulnerability map: In the Vulnerability map, community members have to identify hazards that the village is prone to and the possible areas that would be affected. They also demarcate the low lying areas, areas near the water bodies such as the sea and river, direction of wind, etc. Through this mapping exercise community members identify the location of groups at risk and the assets that require protection from various hazards.

Safe and alternate route map: In a similar exercise, the villagers identify safe areas such as strong houses /buildings, raised platforms etc. These act as a shelter place for the people in the event of an evacuation. It would be useful to identify the alternate approach routes also which could be used during the time of an emergency.

Community Sensitization meeting paves the way for community decision making process in Lahotighat Block, Morigaon District of Assam.

Lahorighat Block of Morigaon District, Assam, has witnessed severe floods and land erosion in the last three decades. As a result many villages have been swept away into the mighty river Brahmaputra. Vast tracks of cultivable fertile land have become infertile due to sand deposits. The farmers of this block have been striving to recover from the natural loss faced year after year. Community sensitisation meetings with help of the representatives from local self-government groups, trained volunteers, local NGOs, were organized for identifying the need for disaster preparedness and mitigation initiatives.

After initial discussions with the village head , it was decided "to meet the members during evening hours after the day's work , through holding FGD sessions (Focus Group Discussion) for drafting the DM Plan which deals with DM techniques, preparedness, response and mitigation, along with formation of task forces to carry out activities at various stages."

During the interaction, local residents expressed their concern for adopting preparedness and mitigation techniques during flood season. It was decided to construct a raised platform with a flat bank cum community fishery to be used during flood and non-flood season. The site for the construction of the fishery cum flat bank platform was donated by the village members. The profits from the fishery would be shared among the landowners leaving 10 % of the profit for community development work. To have boats for rescue operation, decision was unanimous to have their own machine boats, equipped with life jackets; nylon ropes at least one in each Gram Panchayat (GP) for initiating immediate rescue operation during flood. The Gram Sabha would approve funds for purchase of boats and its maintenance.

Being aware of the community's vulnerability to disasters during frequent occurrence of floods, the disaster management committee representative developed a sense of responsibility to involve themselves in the mitigation steps being taken by the administration. Through community sensitization meetings, communities have been able to prepare the CBDP plan as an integral part of a development plan for the community.

e. Disaster management Teams (DMTs)

Village level DMT/ Task Forces are formed to outline coordinated response during crisis situations. DMTs have sectoral focus such as early warning, shelter management, evacuation & rescue, medical and first aid, water and sanitation, carcass disposal, counseling, damage assessment and relief and coordination. Based on needs assessment of the teams, specialized training could be provided to the members. DMT members would be linked to the existing service providers for continuous training and discharging of their responsibilities effectively.

The roles and responsibilities of various DMTs are the following:

1. Early Warning Team- The members of this team are responsible for providing the latest warning information to villagers so that get ample time is available for preparation to face a hazard. Emergency contact telephone numbers are collected well in advance of the hazard season and tools such as radio, television etc. are to be kept in working condition prior to the hazard period. During the occurrence of the hazard, the team would be responsible to inform every household of the latest position. They would also keep a track of the situation and listen to de-warning messages to decide on the timing for call off the emergency state.

2. Evacuation, Search and Rescue Team: Members of this task force are mainly responsible to evacuate and carry out search and rescue operation during the time of an emergency. The members of this team are mainly young men and women of the village, ex-service men; swimmers, etc. Rescue kits necessary to carry out activities of this team should ideally be made from local indigenous materials. These members are trained with the help of Civil Defence, Police, Fire services, etc.

3. Shelter Management Team: Members of this team take care of the identified shelter buildings in pre, during and post disaster scenarios. Care needs to be taken to stock necessary material such as food, drinking water, medicines, bleaching powder, firewood, lantern, etc. Special care needs to be taken for the animal stock during any disaster. The team needs to ensure hygiene in and around the shelter place. Women are generally active members of this team as they are well acquainted with house management, so are suitable for this job during an emergency. The team leader or any other member should have the keys of the shelters so that prior to the disaster the place is cleaned up and necessary materials stocked.

4. Water & Sanitation Team: Members of this team ensure availability of safe drinking water and cleanliness of the village so that there is no danger of epidemics after the event. They will make arrangements for storing water for drinking, cooking and other chores.

5. Medical & First Aid Team: This specialized team is responsible for preparing and updating the list of the vulnerable population like old and ailing people, pregnant ladies, children etc. They also have to procure necessary medicines before the hazard season and conduct a routine check-up of the ailing people in the village. They have to collect health related information and make the community aware of the measures to be taken. Women and existing health practitioners of the village are the members of this team. This team would receive periodic training from the local medical (local health centre) personnel.

6. Relief and Coordination Team: This team maintains the list of all household members so that they can arrange or procure sufficient quantity of food materials for each category of people. They are also responsible for the distribution of relief materials. In the post disaster period they will make arrangements for getting relief materials from the Block office. They should also have the list of shops/ wholesale dealerships where food grains are available for use during the time of emergency.

7. Carcass Disposal Team: The team is responsible for the clearing of carcasses (if any) after the disaster. They are exposed to different types of carcasses disposal methods. The team should put in all efforts to check spread of diseases by disposing of the carcasses at the earliest and in the right manner.

8. Trauma Counseling Team: The existing relief system does not have any provision for treatment of mental health, which enhances suicidal cases after any major disaster. Community members affected by a disaster are usually traumatized due to loss of family members and assets. In such a situation, the counseling team is responsible for easing the victims of their trauma.

9. Damage Assessment Team: After normalcy returns the damage assessment team carries out an estimation of the damaged houses, livelihood assets and crops etc. Usually a Govt. functionary from the State Revenue Department carries out such assessments assisted by the damage assessment team.

f. Mock Drill: Mock drill is an integral part of the village CBDP plan, as it helps to prepare the community by increasing its alertness level. With this in mind mock drills are organized in all villages to activate the DMTs and modifications, if any, are made in the DM plan. Being a simulation exercise, if practiced regularly it would help in improving the cohesiveness of the community during an emergency.

g. Identification of Hazard Specific Mitigation Activities

While developing the CBDP, villagers would be able to ascertain mitigation techniques for each type of hazard for the long term. These could be in the form of coastal belt plantations, cyclone shelters in threatened areas, improved drainage systems in low lying areas, raising the platform of the community hall or school building, etc that would assist in minimizing loss reducing the impact of disasters.

All community mitigation plans are consolidated at Gram Panchayat (GP) level and become a part of the respective development plan. All mitigation plans would be forwarded to higher authorities for financial provision. . These would eventually be funded under the on-going development programmes in the district, for which the District Magistrate/Collector is the nodal officer. Disaster management committee at the district levels and the State Steering Committee (a mechanism established at the State headquarters level) play a major role in ensuring this.

h. Community Contingency Fund (CCF):

Availability of resources for various activities to be carried at different phases of the cycle is very crucial. To cater for this each household in the village would be motivated to contribute resources in the form of funds and/or food grains, which becomes a reserve for the village. A very nominal amount based on the affording capacity of the inhabitants (households) is collected and kept as the CCF or Village Emergency Fund. Utilisation of this fund is decided during the annual meeting as per the need and developmental plans of the village.

4. Preparation of CBDP Plan-Process

In order to ensure ownership by the community and to include local conditions and sensitiveness, preparation of CBDP will have to be through a participatory approach. Community Based Organizations and the NGOs who have been working with communities are to be identified to facilitate a PRA exercise. The process followed is listed below:

a. Awareness Campaign: A massive awareness campaign is necessary to support the community in preparation of the disaster management plans. These campaigns are carried out through various means like rallies, street plays, competitions in schools, distribution of IEC materials, wall paintings on do's and don'ts for various hazards. Meetings with key persons of a village such as the village head, health worker, school teachers, elected representatives and members of the youth clubs and women also motivate the villagers to carry forward these plans for a safer living.

b. Training of GP/Block Members: In several states of India GP is the intermediary administrative unit between block and village level, which is a vital link for disaster management activities. It is the responsibility of the GP Disaster Management Committee to supervise and guide the community in this process. Similarly a Block is the administrative unit that executes all developmental programmes in the rural areas, and has a very close linkage with the upper level of administration. Therefore, both levels of functionaries are very important to ensure risk reduction as a part of the development programme. The district level master trainers are responsible to train the functionaries of GP and Blocks before initiation of the activities at the village level.

c. Identification of Village Volunteers and Training: One of the major objectives of the CBDP process is to create a cadre of trained human resources, at community level to carry out all disaster management and mitigation initiatives. An innovative method is used to train at least two individuals as DM volunteers who, after being trained, support the community in development of the village DM plan. These volunteers are selected by the representatives of local self-government, block functionaries and CBOs. Most of the volunteers are from local youth clubs, women self help groups or from CBOs and belong to the same community.

D. Training of PRI Members: The three tier PRIs system (peoples' representatives) existing in India has laid down responsibilities of elected local government officials at various levels. To mainstream CBDP, it is advisable to involve PRIs in the process to address the vulnerability reduction initiatives through the developmental programme because they are responsible for the local area's development. All PRIs are oriented by the master trainers on DRM initiatives and encouraged to be involved to reduce the disaster impact. They would then help the trained volunteers and community on disaster preparedness and management. PRIs are vital players in the disaster reduction programme and help to sustain the same.

e. Sensitisation Meeting at Village/ Community Level: Village sensitisation meetings for the implementation of disaster preparedness and mitigation initiatives are organized with the help of the representatives of local self-govt, trained volunteers, local NGOs etc. The degree of effort required for sensitizing varies from village to village.

f. Specialized Training of DMTs: Each DMT comprises of groups of women and men volunteers and are assigned a specific task.. Specialized training is provided to teams in search and rescue, first aid, trauma counseling and water & sanitation teams. All DMTs are linked to the existing government service providers for regular training. Some training institutions have also been strengthened to impart training to DMTs at various levels.

g. Women Participation in CBDP: Women, children and the aged are the most vulnerable groups in any emergency and need special attention and support. This aspect is kept in mind while preparing the preparedness and response plan of a village. In ensuring this equal opportunity is given to women to participate in the preparedness and mitigation initiatives of the village. They are encouraged to be members of shelter management, search & rescue, first aid and water and sanitation DMTs. Special trainings in swimming, first aid etc. are organized to enhance the skills of women DMTs to enhance their skills to perform their duties better during an emergency. While constituting DMCs/DMTs, atleast 30 per cent membership for women is being ensured to improve the local level planning and response process.

5. Linkages with development programmes and strengthening a decentralized approach

In any DRM programme, institutionalization of the CBDP process is an important aspect that requires special attention. While external support could be provided to facilitate the plan preparation, this should become an integral part of the Government's development agenda. At the village level, the disaster seasonality calendars prepared by communities indicate the appropriate timing for conducting mock drills. This helps to remind various groups of their roles and responsibilities. Some of the measures that could be promoted to ensure sustainability and institutionalization are as follows:

Approval of DM plan by the Development Committee at district level to mainstream the vulnerability reduction activities. All DM plans should be an integral part of the developmental plan of villages as per the government instruction.

Duration	45 minutes
Main Points	Samiyarpettai a small village in Tamil Nadu was one of the villages severely affected by the giant waves of the Tsunami in December 2004. The villagers were able to effectively manage the situation as they had a Community Based Disaster Management Plan in place and were very well organized to ensure its implementation. The film highlights the need of greater preparedness for facing disasters.
Importance of this session	The session will help the participants understand the need for having a Community Based Disaster Management plan and its impact. Since the session has a visual impact it helps in better assimilation and understanding.

**Participant
Workbook**

Film Show

Film Show

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to: • Understand the need for preparation of community planning on Disaster Management. • Steps involved in preparation of the plan • Impact of DM planning on the community.	

Methods of Delivery: Audio Visual method

Approximate Duration: 45 minutes

Duration	120 minutes
Main Points	• Mock drills help in evaluating response and improving coordination based on the Disaster Management Plan. • There are different types of drills like the table top exercise, functional exercise, field exercise, drills etc. • Mock Drills can be carried out for various sections of the society like government departments, schools, community etc. • There are various guidelines which need to be followed to carry out mock drills. • Evaluating a drill is very important so that it can be improved each time it is carried out.
Importance of this session	The session is one of the most important ones as it highlights a practical approach to a plan. More the better would the response to disasters. Thus, the main emphasis in this session will be on the guidelines to be followed for carrying out a mock drill.

12
SESSION

Participant Workbook

Mock Drill

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to: • Understand the need for carrying out mock drills • Understand the guidelines to be followed to carry out a mock drill.	

Methods of Delivery: Lecture, discussion and group activity

Approximate Duration: 120 minutes

I. INTRODUCTION TO MOCK DRILLS

Purpose of Mock drills and Exercises

Mock-drills help in evaluating response and improving coordination within various government departments, non-government agencies and communities. They help in identifying the extent to which the plans are effective and also aid in revising these if required. These drills enhance the ability to respond faster, better and in an organized manner during the response and recovery phase.

The approach for conducting a mock-drill varies as per the complexity and severity of a potential hazard. Therefore, to ensure proper implementation of a drill programme, roles and responsibilities (SOPs) of the concerned personnel, departments, corporate bodies, stakeholders, and mechanisms for conducting the drill should be clearly defined.

Regardless of the size, complexity and risk involved in the implementation of the drill, an effective drill/exercise programme should have the following essential elements as pre-requisites:

- Emergency Response Plan: explaining institutional response structure, emergency response functions and standard operating procedures for various departments

- Team personnel at headquarter and field level trained on their standard operating procedures

- Updated database of resources, equipment and manpower available

- Updated Emergency Directory with important contact details of members of various Departments of the Government

- Mock-drill scenario and detailed action plan for Mock-drill

- Evaluation formats for concerned departments and definite criteria for evaluation

- Observers and qualified evaluators

Lessons learnt from the actual drills and exercises would be useful to revise operational plans and serve as a basis for the training of various stakeholders across different sectors. The drills and exercises will help to -

- Identify planning gaps

- Revise Standard Operating Procedures (SOPs) of various departments to enhance coordinated emergency response

- Increase public awareness and community readiness

- Enhance capacities of professionals, departments and trained volunteers

- Test plans and systems in simulation exercises

Types of Drills and Exercises

There are several different types of drills and exercises.

1. **Drill:** A drill is a supervised activity with a limited focus to test a procedure that is a component of the overall emergency management plan. That is, drills usually highlight and closely examine a limited portion of the overall emergency management plan. For example, a DM unit might conduct a drill for the use of a radio system with those responsible for communicating on it. Drills are designed to impart specific skills to technical personnel (e.g., search and rescue, ambulance, firefighting). A perfect drill is one that leads to a flawless repetition of the intended task under any circumstance.

2. **Functional Exercise:** A functional exercise simulates a disaster in the most realistic manner without moving real people or equipment to an actual site. A functional exercise utilizes a carefully designed and scripted scenario, with timed messages and communications between players and simulators. The EOC facility or area from which disaster response is coordinated is usually activated during a functional exercise and actual communications equipment may be used.

3. **Full-Scale Exercise or Field Exercise:** It tests the participation of as many members as possible for effectively responding to a disaster. This is an exercise which takes place in "real time," employs real equipment, and tests several emergency functions. Full-scale exercises are generally intended to evaluate the operations capability of emergency management systems in a community and to evaluate inter-agency coordination. While these exercises cannot realistically reproduce the dynamic and chaos of real life disasters, they are useful when intended to detect the inevitable errors, lack of coordination, or deficiencies of the simulated response. A critical evaluation is the essential conclusion of these exercises.

Participants - The participants should be from community volunteers, Disaster Management Team (DMT) members and decision makers from various departments Emergency Support Functions.

The DMTs/City Task Forces should consist of the following groups:
i.   Early Warning/Communication
ii.   Evacuation and Temporary Shelter Management
iii.   Search & Rescue
iv.   Damage Assessment
v.   First-Aid/Medical Health/ Trauma Counseling
vi.   Water & Sanitation
vii.   Relief (Food & Shelter) Coordination

Note: The number of teams may vary as per the multi-hazard scenario in the area

Observers/Evaluators- Their role is to observe the actions and decisions of the players, in order to later report on what went well and what did not. The main focus is on the performance of functions and or/agencies, institutions and facilities being tested, keeping in mind the objectives of the exercise. The community themselves are the first responders for carrying out rescue and emergency services. Community task forces initiate responses at field level where specialized quick response teams join them for faster recovery. The field level team leaders of ESFs and the local incident commander coordinate with community taskforces and quick response teams to understand the requirements of the situation so as to provide essential assistance.

Plan for ESF- The ESF Plan document outlines the objective, scope, organization, setup and SOPs for each function that is to be followed by the concerned agencies when the response plan is activated. SOPs provide a basic concept of the operations and responsibilities of DMTs, Nodal and Secondary Agencies.

The **ESF Teams** could be as follows:
i. Communication
ii. Evacuation
iii. Search and Rescue
iv. Medical Health/Trauma
v. Equipment Support
vi. Help lines, Warning Dissemination (Media)
vii. Drinking Water
viii. Electricity
ix. Relief (Food and Shelter)
x. Debris and Road Clearance
xi. Law and Order
xii. Transport
xiii. Other Functions

Team members should be well versed in the duties, responsibilities and activities related to their respective positions prior to the conduct of the drill. Training may also be accomplished during the pre-drill briefing where each team member's duties should be individually addressed. In addition to training of these teams, more people should be trained to cater to any mishap.

A checklist of activities to be carried out by each of the task forces during various phases of the disaster is attached as **Annexure I**.

II. GUIDELINES FOR DRILL DESIGN

All drills should be conducted in accordance with a drill scenario as approved by the implementing agencies of DM; members of the EOCs; ESFs of all line departments; voluntary agencies such as Civil Defence, NSS, NYKS, Bharat Scouts and Guides, Red Cross; Industrial Safety Managers/Technical Experts; and groups or individuals specifically identified to conduct them. The number of controllers, simulators and evaluators are decided based on the type of drill to be conducted, the scenario and the resources available to conduct the exercise (personnel, equipment, funding etc).

Scope - This defines the boundaries of the drill. While conducting the mock drill, the scope could also include the possible collateral[2] hazards associated with the main hazard that triggers other events. The following five aspects should be considered while defining the scope -

1. Hazards Identify one specific hazard/collateral hazards for the exercise
2. Geographic area Identify a defined location for the event and identify a hazard impact scenario
3. Agencies and personnel Identify which agencies will participate and the personnel required
4. Exercise type Identify the type of exercise to be conducted based on realistically achievable results within the drill scenario
5. Operating Procedures identify SOPs as per the scenario to test emergency response functions and coordination

Statement of Purpose - It is a statement to communicate the scope of the exercise to the entities participating in the mock drill.

Objectives - Objectives should be clear, concise, specific, performance based and attainable. The number of objectives needed for an exercise may vary according to the scale and expected output of the exercise. Objectives can be classified into "general/functional/specific".

General objectives will provide the overall scope of the exercise with reference to the community, agency, institution, industry or organization (for example: the community of Nari village will respond and recover from the flash floods).

Functional or specific objectives form the core of the mock drill. These further define the statement of purpose for the exercise by clearly describing the expected outcomes (performance) of the disaster management functions being tested.

Scenario narrative - The scenario narrative describes the events leading up to the time the exercise begins. It sets the scene for later events and also captures the attention of the participants. It could include answers to questions such as:

- What event
- How was the information relayed
- What damages have been reported
- What was the sequence of events
- Was there any advance warning issued and how long before the event
- What factors influence emergency procedures

Drill Activity - Activities should be planned in such a way that it provides sufficient scope to test the pre-identified Standard Operating Procedures (SOPs), drill scenario and the needs of the identified participants (e.g. members of ESF teams, schools, industries, public/commercial settings).

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[2] For instance, collateral seismic hazards which could result in consecutively occurring events such as fault rupture, liquefaction, soil differential compaction, landslides, and flooding

Expected actions/roles and responsibilities - Describes the expected response to actions undertaken. Each ESF and its respective team members should be listed by name so that there is no confusion as to who is responsible for each function.

Expected response/evaluation criteria - The expected response is already pre-identified and defined in the procedure. Specific areas need to be identified for evaluation in the design stage of the mock drill. Details of the procedure must be included so that evaluation is properly carried out. The criteria for evaluation should focus on response and recovery based on the hazard scenario simulated and emergency functions conducted.

III. GUIDELINES FOR DRILL CONDUCTION

When conducting drills, a set process should be followed in order to minimize risks of injury to personnel, damage to equipment or the environment. Participating organizations such as the fire department, police, traffic authorities, hospitals and emergency response units should be informed. They should be notified before the commencement of the drill, and should respond accordingly as required by the drill scenario. They should also be informed as to how they will be notified in the event of an actual emergency.

Pre-drill Briefing
The coordinator should hold a pre-drill briefing with the participating agencies, observers/evaluators to explain the scene and the ground rules for executing the drill. Operational procedures should be reviewed and safety precautions should be considered and rechecked with the participants. The pre-drill briefing should include the outline of the procedure and should clearly specify the inputs required by the participating agencies in terms of human resource /equipment support. In a scenario which has a potential to cause damage to the habitat, it is important to involve the community and discuss the possible chain of events with them.

Drill Initiation
The drill should be initiated by the incident commander in accordance with the planned scenario. The exact actions (such as alarm or announcement) for the initiation should be identified.

Drill Activity
After the drill is initiated, every activity and response should be carried out according to the scenario and respective SOPs. Methods for receiving and delivery of messages can be verbal or written; on paper, by telephone, radio or fax. These messages are directed specifically to individuals/primary agencies that are responsible for coordinating responses with secondary agencies. From the message input, participants should determine the expected response and consequently coordinate internally and externally with the concerned agencies/individuals to take the necessary actions.

During the drill, evaluators document all activities based on the criteria of the scenario. Each drill should have specified areas of evaluation so that all actions required are observed and evaluated. Necessary evaluation formats should be circulated in advance to the concerned participating agencies.

The drill scenario should be allowed to continue till completion of the objectives or as stated by the incident commander. An abnormal termination is possible when actions taken by operating personnel adversely affect the safety of the participants or cause damage to the facility, equipment or environment.

IV. GUIDELINES FOR DRILL EVALUATION

Evaluation process is an important component of the drill. It is the act of observing and recording mock drill activity by comparing performed actions against the drill objectives.

Evaluation serves three functions:

- To evaluate personnel actions

- To evaluate the ability of the responding agencies to implement a plan

- To check the effectiveness of the standard operating procedures

During the pre-drill briefing, the drill planner, incident commander and evaluation team will review the activity and SOPs. An evaluation worksheet outlining the action processes to be observed as per the set timeline decided in the scenario exercise should be circulated. After the drill, an evaluation report will be prepared and the comments can be incorporated in the SOPs.

Evaluation Team - The team members may be identified from within or outside the participating agencies. The incident commander may also serve as an evaluator. The size of the evaluation team will depend on the complexity and scale of the drill. Evaluators should be familiar with the local emergency management system, have expertise and knowledge of the plan and have analytical skills in keeping with the exercise design.

Elements for Evaluation

The evaluators should consider the following elements in their evaluation

1. Notification, alerting and mobilization of disaster response personnel

   - Adequacy of alerting procedures

   - Timely activation and staffing of response facilities

   - Accurate and timely assessment of emergency situation

2. Emergency response facilities

   - Timely activation

   - Adequate personnel as per the Response Plan

   - Adequate response equipment

3. Disaster preparedness plans and procedures

   - Assigned task forces, personnel's demonstrated familiarity with the plans and SOPs

   - Following the set process of the procedures and plans

4. Communication capabilities between response facilities

   - Adequate timely communication with field teams

   - Use of primary and back-up communication systems

- Satisfactory handling of messages and communication from the EOC to the field site and vice-versa
- Adequate communication between emergency support functions

5. Situation assessment
   - To be able to demonstrate timely and coordinated information exchange between response facilities
   - To be able to assess the emergency situation, classify the situation and develop initial mitigation/restoration activities in a timely and accurate manner

6. Overall adequacy of the drill scenario to assess the response plan, facilities, resources, personnel/task forces according to functional areas and standard operating procedures

Critiquing Mock drills

Following the drill, the incident commander will hold a session to critique the activity along with the evaluators and drill team. The critical analysis highlights the successes, shortcomings of the scenario, personnel's actions, equipment accessibility etc. The critique includes an analysis of the expected versus the actual operating actions including a critical evaluation of the response mechanisms and response time. The process should first involve self-evaluation by the participants, then a discussion of the evaluation notes, checklists, actions taken and the overall drill performance. Lessons learnt should be generated and shared with all the participating agencies to ensure maximum training and for future reference. The incident commander shall make the final determination of whether the drill objective was met or not.

Mock Drill Evaluation Report

The evaluation report summarizes the development, conduct and results of the drill/exercise. The report should present an overall evaluation of the exercise, state whether the exercise objectives were achieved, and cite any areas of noteworthy performance, discoveries, determinations, problems, and solutions identified as a result of the exercise. A template of the evaluation report is given in **Annexure II**.

V.   CASE STUDIES FOR MOCK DRILLS IN SPECIFIC SETTINGS

Mock drill can be conducted keeping in view various scenarios. It could be carried out for schools, rural and urban settings, Industrial Setting (On-Site/Off-Site) and Health Care Setting. This session will focus mainly on steps to follow to conduct a mock drill at the community level.

The community being the first responder to disaster, its participation in formulation of preparedness plans and sharing of disaster preparedness cost is pivotal in the community based planning process. CBDP includes awareness generation; vulnerability analysis; assessment of available resources; capacity building of stakeholders including PRI members, NGOs, CBOs, local administration and line departments; and preparation of DM plans, which is required at all levels. **Community based Disaster Plan** should incorporate the following:

- Adoption of a participatory approach

- Preparation a resource inventory

- Increased coordination between disaster management committees and reduce communication gaps

- Formation of community task forces with sufficient knowledge of their specific roles

- Establishment of a chain of DM volunteers

- Coordination with other related institutions within the community

During the mock drill the community members should understand and learn how to use the DM plan. After the mock drill, the DM Committee should update the plan.

RURAL SETTING

Disaster Preparedness at the rural level is carried out through **Village Disaster Management Committees** (VDMCs A VDMC is formed in each village and is responsible for initiating disaster preparedness activities. It consists of local elected representatives, grass root level government functionaries[3], local Non-Government Organisations (NGOs)/Community Based Organisations (CBOs), members of youth groups[4], women's self help groups etc. The representation of members in the committee would be decided based on the population size of the village. The VDMC would take the lead in mobilizing the community for formulating the CBDP Plan.

Village level Disaster Management Teams (DMTs) /Task Forces are formed to outline coordinated response during crisis situations. DMTs have sectoral focus such as early warning, shelter management, evacuation and rescue, medical and first aid, water and sanitation, carcass disposal, counseling, damage assessment and relief and coordination.

Village Disaster Management Plans prepared prior to the mock drill through the CBDP process entails the following information:

- Physical/Social/Infrastructure Profile of village: Demographics, Area Details, Housing Profile, Land Form, Livelihood, Occupation Pattern etc.

- Resource Inventory of village: Skilled Manpower, Health Care, Education, Water Facilities, Transportation, Communication Infrastructure etc.

- Disaster Risk Profile of village: History of Disaster, Elements at Risk, Hazard Assessment, Vulnerability of Area

- Contact Information of village: Village Disaster Management Committee, Village Task Force Members, Taluka Level officials, Village Level Skilled Personnel, Emergency Resource Owners etc.

- Standard Operating Procedure of village task forces: Operating Procedures and Methodology, Roles and Responsibilities in Pre, During and Post Disaster Period

Note: At the village level, the mock drills can be based on the seasonality calendar of natural hazards.

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[3] For e.g. Block development Officers, Anganwadi Workers, Representatives of Sarva Shiksha Abhiyan, Teachers etc
[4] For e.g. Members of National Service Scheme (NSS), Nehru Yuva Kendra Sangathan (NYKS)

ANNEXURES

1

ANNEXURE

Checklist for DMTs/ CTFs

a. Early Warning/Communication Community Task Force

Pre Disaster
- Ensure that communication equipment is in working order
- Maintain an emergency contact directory of key agencies like IMD, Office of the District Magistrate, CWC, Office of SP Police etc.
- Prepare a hazard map of the community demarcating the most vulnerable/safe areas and households
- Pay attention to local warning issued by departments
- Disseminate early warning using mega phone/mikes/sirens, door to door
- Assemble in a central location and listen to radio/TV news channels to determine the situation
- Verify the warning received on radio/TV news channels with the nearest emergency operating centre

During disaster
- Remain in the pre-identified community shelters and provide the evacuees with regular updates
- Take necessary preparedness actions based on the alertness levels

After disaster
- Get the de-warning message from the Emergency operating center
- Disseminate precautionary information on post disaster health hazards and remedies
- Provide immediate assessment details to damage assessment team
- Provide the search and rescue team with geographic information on the community
- Prepare and disseminate situation reports to other CTFs/ESFs

b. Evacuation and Temporary Shelter Management Community Task Force

Pre disaster
- Stocktaking of infrastructure needs of the community such as roads, schools/community halls/community libraries for evacuation arrangements
- Coordinate with Disaster Management Committee members to identify sites for setting up relief camps
- Check for required repairs in safe shelters
- Stock food items and essential supplies
- Ensure that shelters are easily accessible by well maintained all-weather roads

During disaster
- In case supply runs short, move food stocks, fuels and medicines to community shelters
- Organize space to house evacuee families
- Guide the elderly, women, children and physically/mentally challenged to shelters
- Register the evacuees and give them identification slips/cards

Post disaster
- Ensure that evacuees are fed and housed until the de-warning is received
- Organize tents and materials for construction of temporary shelters
- Collect remaining stock of food, clothing and fuels
- Clean and disinfect the shelter

- Assist Disaster Management committees in organizing rehabilitation activities
- Conduct a head count of the community members

c.   Search and Rescue Community Task Force

Pre disaster
- Have a detailed map of the community to get familiar with the geographical area
- Identify necessary S&R tools/equipment from local resources
- Regularly maintain the equipment
- Organize sub- teams (S&R) for rotation of personnel
- Carry out regular training programmes during the normal phase

During disaster
- Organize a meeting of the CTF members/ESF members (S&R)
- Contact the local disaster committee members
- Identify vulnerable areas in which help is required and decide the action plan for carrying out search& rescue operations
- Mobilise the required equipment
- Assist the evacuation team in moving people to safer shelters
- Coordinate with first aid team to provide injured persons with medical attention

Post Disaster
- Report the number of missing/dead/injured during search & rescue operations
- Conduct a head count of the community members
- Clear debris and fallen trees/rubble to reach trapped persons
- Communicate with first aid team for primary health care
- Coordinate with evacuation team to shift rescued persons to open spaces/tents /shelters

d.   Damage Assessment Community Task Force

Pre disaster
- Obtain and keep a social map handy demarcating the most vulnerable/safe areas and households
- Prepare and keep handy a sufficient number of damage and needs assessment forms for various sectors

During disaster
- Should coordinate with Search and Rescue and Evacuation and Temporary Shelter Management task forces to take stock of the current situation
- Call emergency meeting of the group and assign duties

Post disaster
- Prepare a first hand damage assessment report on the preliminary damage to lives, livestock and property
- Prepare further detailed reports on various sectors
- Assist DM committees in organizing rehabilitation activities

e.   First Aid and Trauma Counseling Community Task Force

Pre disaster
- Maintain a list of elderly members, children below 5 years, pregnant women, disabled etc in the locality

- Keep first aid kits ready and ensure that expired drugs are replaced with new ones
- Keep stretchers/wheel chairs or other local alternatives ready to carry injured people
- Undertake combined training along with Search & Rescue team
- Coordinate with PHCs, CHCs and Municipal Hospitals

During disaster
- Ensure the contents of all first aid kits are in place
- Look after the medical needs of the evacuees
- Help in setting up medical camps

Post Disaster
- Attend to the injured people
- Counsel traumatized people
- Help doctors and paramedics in providing medical care to the injured
- Identify and isolate the cases of infectious diseases to prevent them from spreading
- Provide preventive medication if there is danger of cholera, dysentery
- Coordinate with the relief task force to ensure adequate medical supplies

f.   Water and Sanitation community task force

Pre disaster
- Ensure supply of chlorine tablets to disinfect drinking water
- Ensure sufficient stock of lime powder to disinfect water bodies/drain networks
- Ensure sufficient water is stored in proper tanks and jerry cans in safe shelters
- Obtain contact details of personnel at local water board/authority
- Set minimum standards in advance for distribution of water in emergencies
- Identify sufficient number of raised platforms, deep tube wells
- Prepare utility maps, distribution network maps

During disaster
- Assess the drinking water supply and available water resources and take adequate steps to prevent contamination
- Ensure that safe drinking water and sanitation facilities are available at the safe shelter

Post disaster
- Conduct damage assessment of water and sanitation facilities and inform the damage assessment team
- Restore water and sanitation facilities
- Conduct immediate repairs of broken or burst pipes
- Coordinate with the Municipal Cooperation for procurement of water tankers
- Disinfect large water bodies with lime powder
- Ensure water is available at relief camps/safe shelters
- Coordinate with first aid/search & rescue team for disposal of carcasses
- Maintain a list of dead who have been cremated

g.   Relief Coordination Community Task Force

Pre disaster
- Get familiarized with the need assessment formats
- Assess the estimated requirements for relief material

- Check the stockpiling of food grains, fodder and medicines by Evacuation and Temporary Shelter Management and First Aid taskforces
- Stock materials like ropes, bamboos, tarpaulin etc in the safe shelter identified

During disaster
- Coordinate with evacuation and temporary shelter management team to distribute essential relief items to safe shelters
- Establish a distribution centre or community kitchen

Post disaster
- Conduct a need assessment in the locality
- Based on the preliminary need assessment, communicate to Disaster Management Committee the relief items required and status of distribution
- Prioritize relief items and essential food items to men, women and children
- Maintain a list of relief items distributed to each household
- Keep a record of relief stock available

2

Template for Evaluation of Mock Drills

A.   Introduction

B.   Scope and Objectives

Drill/exercise scope

Participants/Participating agencies

Mock drill objectives

C.   Scenario Summary

Initial conditions

Sequence of events

D.   Critique

Scope of Evaluation

Summary

Notification and communications

Operations and field responses

Equipments and facilities

Standard Operating Procedures

Drill-related problems

Other Observations

E.   Outcomes

Significant findings/successes

Loopholes/Deficiencies/Omissions

Opportunities for Improvement

F.   Plan of action for corrective actions

Duration	45 minutes
Main Points	• Women and children are severely affected during any disaster • The impact of disasters is different on men and women. • The factors responsible for the differential impact could be social related factors, economically factors and psychological related factors. • Understanding the differential impact of disasters with suitable case studies. • Initiatives that can be taken up by the government and the community to make the society gender sensitive.
Importance of this session	The session is crucial as it discusses the importance of looking into the differential impact of disasters on men and women. Based on the analysis, the NGOs should cater to the varying needs of men and women in case of a disaster. This session would help participants to analyse the varying needs of both the groups from different perspectives. Even though the session is short, discussions between the participants and the facilitators can be of help for better understanding.

13 SESSION

Participant Workbook

Mainstreaming Gender in the Planning Process

	Participant Notes

Enabling Objectives
 	
At the end of the session, the participants will be able to:
   o   Understand the definition of gender
   o   Understand the difference between sex and gender
   o   Differential impact of disasters on different sex.
      - Social Factors
      - Economic Factors
      - Psychological Factors
   o Understand what to do to make the society gender sensitive.	

Methods of Delivery: Lecture, discussions

Approximate Duration: 45 minutes

The increasing occurrence of natural and manmade disasters is causing extensive loss of life, damage to property, and the environment. Disasters - natural and man-made, have inordinate impact on both men and women. Nearly ninety percent of natural disasters and ninety five percent of disaster related deaths worldwide occur in developing countries. It is estimated that by the year 2025, eighty percent of the world's population will live in developing countries, and up to sixty percent of them will be highly vulnerable to floods, severe storm and earthquakes. The capacity of human societies to withstand disasters is determined primarily by the internal strengths and weakness of the society the level of social, economical and cultural vulnerability.

As disaster continues to affect more and more people, it becomes increasingly clear that the social, economical and political forces of development are major contributory factors. . Apart from unexpected natural hazards people may be affected by the unequal distribution of resources, social and political processes that perpetuate inequality and coordinated ill planned development. The development of sustainable human settlements contributes to the reduction of vulnerability to the impacts of disaster.

The space in which men and women live will have profound impacts on their interaction with one another and with their environment. Involving women and understanding gender dynamics within the framework of disaster are critical for developing effective interventions. "Human development cannot occur when the choices and half of humanity are restricted". The Early National Opinion Research Center studies found that if men and women are together with children in the wake of a disaster, men will leave to help others; women will stay and look after the children.

Canadian research on evacuations found that emergency personnel will pressure women and children to leave, but allow men to go and return or to stay behind. Phillips and Neal found domestic violence may increase in the wake of disaster, and Nigg and Tierney report that women may be left out when loans are being given to assist small businesses with recovery. Before we discuss more on 'Gender and Disaster Management' let us know what we exactly mean by gender, impact of disasters on gender and how to combat it.

Gender refers to the way members of the two sexes are perceived, evaluated and expected to behave. We can define it as "a whole set of expectations held as to the likely behavior, characteristics and aptitudes men and women will have. It refers to the social meanings given to being a man or a woman in a given society".

The gender identity constitutes the following:

- A person given gender specific roles and responsibilities
- The characteristics and conduct given for each sex
- The appearance and dress code that are expected of men and women
- The professions that are assigned to men and women and
- Sexual orientation/ preferences of men and women.

When we are talking of 'gender' it does NOT mean sex which refers exclusively to biological differences between men and women. It is NOT the other word for 'women'. Let us try to understand the difference between 'Gender' and 'Sex'.

GENDER	SEX
It is a social construct	It is a biological reality
It is socially ordained	It is biologically ordained
It varies across culture, social, economic reality in regions	It is universal
It can be changed	It cannot be changed (unless there is any medical intervention.)
Includes variables identifying differences in Roles, responsibilities, opportunities, needs and constraints	Universal

(Source: Enarson and Morrow (1998)

In a society the gender relations may be equal or unequal. It is an undeniable truth that, to realize complete human potential there has to be gender equality. This involves empowerment in gender relations at personal, collective and societal level. Gender equality refers to the state of relations where women have the same opportunities and access as men in all spheres of activity.

Who are the vulnerable to disasters?

- Poor and low-income households
- Single-parent households.
- Socially isolated households.
- Recently arrived residents, immigrants, foreigners.
- Senior citizens, children and young people.
- People with a disease or a mental or physical disability.
- Undocumented residents; refugees; war veterans.
- Indigenous populations and subordinate ethnic groups.
- Institutionalized populations; homeless residents.
- Women.

Gender is an important variable since it is clear that those living in poverty are more vulnerable to the impacts of disaster and majority of the world's poor (70%) are women. The experiences of women in Bhopal, Latur and Orissa highlight the extreme vulnerabilities of women. It has been proved that persistent poverty and economic insecurity and unequal division of domestic labour, reproductive differences, unequal access to education, health and social services led to women's increased vulnerability to disasters and the impact to being different from men.

Natural disasters have differential effects on men and women based on their vulnerabilities and capacities to deal with them. Disasters affect men and women differently, because of their differing roles, different responsibilities given to them in life; and in their capacities, needs and vulnerabilities. But why are women more vulnerable? There are various factors that contribute to it namely biological, social, economical and psychological.

Biological factors: It refers to the biological body construction which has made women more vulnerable. The stampede that took place in November, 2004 in the Delhi railway station - around seventy percent of those affected were women. Because of their physical strength men are able to cope up well with disasters. A study on the 2004 Tsunami that hit the Indian coast reveals that a large number of men were saved because they were able to run away from the coast faster than women, their physical strength could to some extent save them from the huge waves and most of the men climbed the trees or on the roof tops which was not possible by the women folk.

Social Factor: The patriarchic society has made women more vulnerable to disasters. Due to their restricted mobility and the psychological attachment towards their family, women are generally more affected. A woman who stays in the house is generally the last one to leave the house in case of evacuation. Because of her caring and sharing nature she feeds the members of her family first with eats what ever is leftover, thereby is prone to malnutrition.

Let us now try to understand how the patriarchic society has made women more vulnerable and have trapped them in the vicious cycle.

In a patriarchic society men are treated as the head of the household and are the main bread winners of the family and thus have greater mobility. Being a key person in the household, men instead of women being trained is considered a good investment. This also gives them a higher status in society and a better platform to cope up with disasters. On the other hand, women are treated as sub-ordinates and act as a support system to the family in case they are out to work. Being only a support to the family, she doesn't get the priority for better education which leads to lack of knowledge and in turn high vulnerability.

In Bangladesh "traditional gender specific work such as carrying water, cooking, caring for children and animals become so difficult for women during flood conditions that their lives are at risk…… Often there is no alternative, because there are no men around them to help them, and even if there were, they didn't assist with women's work because of the powerful idea of gendered division of labour".

Economic factors: Women have lesser access to resources such as social networks and influence, transportation, control over land, personal mobility, freedom from violence and control over decision. . This has lead to them being greatly affected. Women generally carry the dual burden of 'production' and 'reproduction'. Even after a disaster when they have to move out of the four walls to earn their livelihood, girls/women have to carry their siblings/children along with them. They also become victims of gender division of labour being involved in mundane activities like sewing, making handicrafts etc which fetch less money and are not considered skilled labour. The low level of literacy and social taboos to move away from the confined walls of the house have led to lack of work opportunities for earning their livelihood. At times even forcing them to sell their ornaments to cope with financial constraints. .

Psychological factors: Psychological effects of disaster on men and women can make both vulnerable due to post-traumatic stress and anxiety. In order to cope with them both adopt different techniques depending upon the skills, resistance and knowledge. Lack of opportunities to earn their livelihood and the social pressure to nurture the dependents cause a great deal of psychological imbalance among women headed households. Women are more sensitive, emotional and face greater stress. The death of a child has a long lasting impact on a woman, hampering her physical fitness and also her mental status.

Differential Impact of Natural Disasters on Women and Men:

The cross country review of gender in disaster by Fothergill (International Journal of Mass Emergencies and Disasters 1996) in "The Neglect of Gender in Disaster Work: An Overview of the Literature," is a review of over 100 studies addressing the issue of this problem. In her review, Fothergill has highlighted the need to replace the techniques "common" for both men and women in preparedness, response, recovery, mitigation measures in disaster studies, with the nine-point categorization mentioned below. She has emphasized the needs and capacities of both have to be understood, planned and responded to differently-

1. Exposure to risk
2. Risk perception
3. Preparedness behavior
4. Warning communication and response
5. Physical impacts (mortality and injuries)
6. Psychological impacts
7. Emergency response phase
8. Recovery phase
9. Reconstruction phase

Gender influences vulnerability in all phases of disaster. There are four sequential phases in disasters: preparedness, response, recovery and mitigation. In the first phase — **'preparedness'** people prepare themselves for potential disasters, the emphasis being on acquiring information of the potential risk and the way to avoid and minimize the losses.. In most societies access to information is not equal for both sexes. The gender division of roles affects the individual's access to and attitudes towards information dealing with preparedness and emergency situation. Article 14, 15 and 16 of the Indian Constitution says no person should be discriminated on the basis of caste, creed and sex and therefore, women too have the right to information. A special bill is being passed so that all citizens of the country have access to information.

In the second phase — **'response'** the behavior of the people is generally influenced by their daily gender roles, as well as by information on which their preparedness is based. The materials distributed in the relief camps do not cater to the needs of women like proper sanitation facilities, special care for the pregnant and lactating mothers etc. There are reported cases of sexual harassment against women/ young girls in the relief camps where there is negligible security.

In the — **'recovery'** phase people try to restore back to their normal lives. Women headed households usually move out to earn their livelihood carrying. out gender stereotyped activities like; tailoring, making handicrafts etc with most of the marketing is done by men who earn most of the profit. In the recovery phase of the Orissa Super Cyclone (1999), women were trained in carryout masonry work which helped them earn more wages thereby leading to a better standard of living.

In the last phase — **'mitigation'** vulnerability to natural disasters differs between men and women, as in a society where information, opportunities and resources are distributed unequally, different choices of behavior are likely to be made by the two sexes. For example when we talk of the structural safety of a building, a man is more interested in the amount of expenditure that it would incur to make a structure disaster resistant, while a woman on the other side would think about the safety of her family members.

Studies across different countries show that the effect on women and men varies as a result of the unequal status.. Significant ways in which both men and women were impacted are as follows:

a. The different roles and responsibilities men and women undertake in their daily routines resulted in gender related differences in the times of crisis and hazards. Unequal gender division of labour led to additional physical work and burden for women.

b. Demographic changes have an impact on gender relations in any society. These changes affect women most in terms of additional mouths to feed, sick or elderly to care for or losses to the family. When men die or get injured and move to other places to work it is the woman who is the single care taker of the family.

c. The economic impact of the disasters is that the livelihood problem becomes common for all with fewer opportunities for women. The reason for all this is that men have the option of migrating and finding employment in rehabilitation/restoration work, while women stay back with their families.

Another dimension of the economic impact is that women may be forced to sell their own personal assets including valuables and jewellery. Disasters also often result in increasing the dependence of women on men, making them more susceptible to sexual exploitation and domestic violence. Take the case of Orissa floods, where it has been found that following the disaster many women were trafficked and forced in to sex work.

d. Psychological impact shows that though both men and women are equally affected. Psychologically, women are under more stress. And this originates from their perception of risk to the family. The breaking down of household and social structures during disasters tends to make women more vulnerable to stress and anxiety.

The following examples would give a better understanding of how men and women are affected by disasters.

- Once a disaster strikes a particular area women are often given the responsibility of shifting the household articles and valuables to the safer site, taking care of the children, accumulating essential materials such as dry food, water, infant feed etc.

- Many of the above tasks put women in grave danger, , such as not being able to move out in time and getting surrounded by water in case of floods or being trapped in debris in case the house collapses. . Traditional clothing such as a saree, long hair etc is not the best garb to be in when a person is trying to move fast to save her life.

- Once in a safe house women face the problem of acute congestion, especially those who are pregnant.

- No proper sanitation facilities are available for women in the relief camps.

- The cultural beliefs of restricted mobility and non interaction with opposite sex make women more susceptible to disasters.

- Women are generally not given loans, or any assistance distributed by the government or any agency.

- Increase in sexual harassment and red trafficking

- Increase in drop out rates from schools among girls as they have to take care of the younger siblings and help the family in household chores.

- Deterioration in health condition because of the lack of nutrition.

- Women are perceived to be victims rather than resources.

Even though women have been facing such difficulties, they have coped well with the situation. The case study below explains how in adverse conditions women have been able to demonstrate their courage and fortitiude and save lives of their near and dear ones.

A high wind blew and it rained throughout the day on 29th October 1999 in Solang village of Soro block in Balasore district. The river Kansabansa, which flows past the village, slowly began to swell. Kanakalata Palai, a college student of Saraswati Mahavidlaya left her small house situated on the bank of the river to go across to the other bank where she gave lessons in tailoring to girls of nearby villages. The rain fell with greater intensity and the water level of the river rose higher and higher, submerging roads and houses. Her tailoring training center was situated on a raised ground and many villagers came to take shelter there. Kanakalata, apprehensive that her parents, who lived in the village on the other side of the river further down stream, were in danger, borrowed a boat carved from a palm tree trunk from a boat man and set out. She went to her house and rescued her parents. She undertook two more trips in the dark and saved seven more lives, braving the gale force wind and the strong current of the river. The rescue operations took more than six hours.

In recognition of her act of bravery and spirit of sacrifice, the Tentei Gram Panchayat felicitated her.

Case Studies: Gender dimensions of Tsunami:

The case studies of Tsunami illustrate the kind of differential impact it had on men and women and the need for gender sensitive interventions. The tsunami of December 2004 killed hundreds of thousands of people in countries spanning South-East Asia, South Asia, and East Africa while many more millions were displaced. It was found in various studies that in Aceh province in Indonesia, in India and Sri Lanka, more women and children than men had died.

The main causes of this patternare similar across the region: many women die because they stayed behind to look for their children and other relatives. Men more often than women can swim and climb trees. But differences too are important: Women in India play a major role in fishing and wait on the shore for the fishermen to bring in the catch, which they would then process and sell in the local market. In Sri Lanka in Batticoloa District, the tsunami hit during the hour when women on the east coast usually bathed in the sea.

Even more important for the purposes of relief and long-term reconstruction is the need to understand the consequences of such demographic changes. How safe are women in crowded camps and settlements, when they are so outnumbered by men in several of the countries in question? Will widows in India have access to land once owned by their husbands? Will younger women enter into marriages with much older men, as already seems to be happening in some locations? And will this carry risks in terms of compromising their education and reproductive health? What rights will surviving women enjoy under new arrangements and programmes? In whose names will newly built houses be registered? Will men take on new domestic roles, or will women's workloads increase?

Figures collated by Oxfam show that the tsunami killed more women than men in the worst affected districts. In Nagapattinam, the worst affected district of Tamil Nadu in South India, government statistics state that 2,406 women died, compared with 1,883 men. In Cuddalore, the second most affected district, almost three times as many women were killed than men, with 391 female casualties, compared to 146 men. In Devanampattinam village in Cuddalore, for example, 42 women died compared to 21 men. In Pachaankuppam village, the only people to die were women.

It was observed that the loss of assets, homes, and family members have contributed to increased gender inequality. The structure of families has also undergone a change. In some homes, traditional gender roles are being challenged, as men deal with the crisis by taking on the responsibilities of single parenting and learning to perform new roles.

Progress on some issues were also reported. For example, the initial period after Tusnami, the initiatives by the governments of Tamil Nadu and Kerala to station women fire, police officers and doctors in the camps and affected villages was a very positive move. This helped to deter violence against women and provided women the survivors with a safer environment.

In both Kerala and Tamilnadu, government has agreed to register permanent houses owned by married couples in the names of both the spouses, so that one cannot sell the house without the consent of the other. In other areas, a lot of progress is still needed. Livelihoods represent one such area. Gender equality in livelihoods is another major concern. This includes equal cash for equal work and ownership of assets such as houses and boats, as well as life insurance and insurance of income-generating assets.

It was found in Srilanka that one of the factors that increased women's vulnerability was their traditional role of caring for their husbands, children, and elderly relatives, which kept them largely in and around their homes. As the tsunami hit quite early on a Sunday morning, many women would have been engaged in preparing breakfast for their families.

Some of the gender-specific problems created by the tsunami in Sri Lanka were rather short-term. These relate to the difficulties women encounter when living in a camp environment or in trying to receive equal access to emergency assistance, such as ration cards, which are registered in the husband's name. Another important concern is ensuring that women are paid equally and adequately in cash-for-work programmes, especially in the rehabilitation of agriculture and in the construction of temporary housing.

There are fears that domestic violence, a significant problem before the tsunami, may be exacerbated by the new strains on the family unit, such as the loss of men's livelihoods and the mental health implications of the disaster. The mental health needs of women, especially those who have lost children or who are widowed or pregnant, will be present in both the short- and long-term stages of the response.

Women are not the victims at the time of disaster but they have been a great resource to the society. They have been good responders at the time of disasters. They have actively participated in various activities like:

Distribution of relief materials: Studies reveal that relief has been distributed effectively and equally in places where women have been involved.

Rehabilitation and reconstruction: women have moved away from the stereo typed role and have taken up skilled jobs like masonry work etc.

Community mobilization: Because of their sensitivity towards certain issues they have been able to mobilize

the society effectively. "Educating a woman is educating a family and educating a man is educating an individual'. They have been effective carrier of messages.

Economic development: Women's involvement in the race to earn a livelihood have made them come forward and be a part of the market, earn more of profit with no middle men and develop better bargaining skills.

Are we Gender Sensitive?
We need to ask ourselves few questions to understand the gender equity scenario in DRM :-

a) Are we taking into consideration the needs of boys and girls and men and women in planning DRM ?

b) Do men and women/boys and girls have equal access to information and knowledge in vulnerability reduction?

c) Are men and women involved equally in community based DRM activities?

d) Are men and women equally involved in decision-making bodies and processes?

e) What are we doing to ensure equal participation and involvement to enable better preparedness and mitigate vulnerabilities to disasters?

An attempt to answer these questions leads us to the gender analysis of disaster impact.

What To Do?

There is a need to take gender sensitive measures so that both men and women get equal opportunities in pre, during and post disaster scenarios. The activities that could be taken up to maintain this balance are:

• Gender segregated data: So far, nationally and internationally during a disaster, no efforts have been made to gather gender segregated data in terms of death, loss, disability, homeless etc. Such segregated data will not only help in giving a real picture of loss (gender based), but will also enable both the government and the national and international aid agencies to effectively formulate their future strategies for disaster mitigation.

• Developing capacity of women's groups and community based organizations. Women's organizations that are community based work with grass root groups and have information, experience, networks and resources vital to increasing disaster resilience.

• The present gender inequity in the DRM activities is rooted in the prevailing attitude that women are helpless victims of conflict rather than as survivors of disasters and crisis managers. This attitude needs to be reoriented and changed. All initiatives on disaster risk preparedness have to be based on specific cultural, economic and political context whose basis is equality, if women's capacities, abilities and potentials are to be utilized properly.

• Gender mainstreaming in monitoring programme implementation and their evaluation is the need of the hour. Developing policies and ensuring gender sensitive disaster risk reduction would result in better preparedness and risk management among men and women. To monitor the implementation

of these initiatives, , we need to develop bench marks and indicators to integrate gender equality and social vulnerability in DRR activities.

- Need assessment of the community taking into consideration differential skills, knowledge and abilities and resources (especially of women) has to be undertaken before planning disaster preparedness and risk reduction activities in the community.

- Mitigation of vulnerability can be guaranteed through awareness generation of both men and women.

- Equal participation of men and women in the vulnerability reduction initiatives like education or coping with hazards, knowledge of early warning systems and carrying out emergency / evacuation plans need to be planned and sustained.

- The capacity building initiatives have to be through interactive methodologies. Women have to be encouraged to participate, not just being a part of the audience in the training programmes. Women's participation in first aid trainings, mock drills and search and rescue operations needs to be planned and encouraged for successful DM.

- Community and family awareness could be enhanced through the capacity building of the community leaders - Panchayat leaders/ members / SHGs. Peer leaders from the SHGs could be the focal point in the districts where they are active.

- While assessing the damage, assessment teams have to be gender sensitive and formats have to be prepared accordingly.   While interacting with the community, both men and women have to be interacted with equally. . In this manner the assessment will be more realistic in comprehending the needs of the community.

- Provision of relief services ought to be planned keeping the needs of women to balance gender equity. The practical gender requirements of women should be addressed by provision of health facilities, safe shelter, sanitation, drinking water points, toilets, sanitary pads and supply of condoms. Care has to be taken to have women as main members in the relief requirement assessment teams and relief distribution teams as well.

- Government   and aid agencies need to include women's voices in decision making, through consultation. During disaster relief due attention must be given to the aspects of protection and dignity of women while in temporary shelters and camps. Privacy issues need to be addressed, as well as the placement of water sources, toilets, and kitchens at convenient locations. In camps, private space needs to be dedicated and earmarked for medical examination of women.

- Joint ownership of property will give both men and women more confidence and an equal standing in the house. Besides ensuring equal respect it also relieves a woman from the judicial constraints she could face in case of a death of the male member who owns the property. As a lesson from the past

disasters relief operations, women who lost they husbands in the 2001 Gujarat earthquake found it very difficult to prove that the property belonged to them.

- Income generating activities for both men and women have to be given equal emphasis while planning vocational training, employment (includes self employment also) and credit.

- Care has to be taken to safeguard women from any possible gender based violence and sexual exploitation after the disaster by forming watch dog committees /surveillance groups. Psycho social needs of women have to be given top most priority in the rehabilitation process.

- Availability of crèche facilities would be of great help to women who have to take care of their young ones. This would help them in giving more quality time to their work.

- In rural areas because of the lack of mobility women are not able to go to far off places in search of jobs. Proper transportation facilities would help them take up Food for Work (FFW) activities.

- The compensatory money given after the Kumbhakonam fire tragedy which killed 93 school children, was mostly spent by men on drinking. Many felt that this was a way to release their stress. Having learnt a lesson the money was thereafter handed over only to the woman of the household.

- Special provision should be made available to pregnant and lactating mothers.

Conclusion:

Each community adopts its own indigenous knowledge for disaster preparedness and reduction of its severity. Both men and women play a role in responding to situations, providing assistance and using survival skills during a disaster

The Yokohama World Conference on Natural Disaster Reduction (1994), a mid term review of the International Decade for Natural Disaster Reduction, recognized the need to stimulate community involvement and empowerment of women at all stages of disaster management programme as an integral part of reducing community vulnerability to natural disasters.

Women form almost half of the world's population, and their representation in the development process is essential. For achieving sustainable development, it is important to consider the role of women recognizing it as a strong labour force as an asset for the country. The programme has to involve both men and women and develop their capacities to handle disaster risks. Integrating gender into DRM would lead to better community , family and individual preparedness. This is possible through careful mainstreaming of gender issues in the DRM programme at all levels.

Feedback and Closing Day 2

Duration	15 minutes
Main Points	In this session the participants are expected to fill the session wise feedback form. This will help us to have rate the sessions and improve them based on the feedback received. The feedback could be both the logistics arrangements and the technical sessions. We would therefore request you to give us an honest feedback to make the future training programmes a success.

The feedback form is attached at the end for reference. |
| **Importance of this session** | The session is very important as it helps the organizers determine the course of action for the future. The session wise feedback received from the participants will help them in improving the sessions qualitatively. |

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Participant Workbook

Feedback and Closing Day 2

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to: • Identify the positive and negative aspects of the training programme. • Learn from the day's proceedings	

Methods of Delivery: Self

Approximate Duration: 15 minutes

Duration	15 minutes
Main Points	The main objective of this session is to recapitulate the discussions held on Day 2. The task can be assigned to the participants individually or in a group . This session will help all the participants to revise, check their assimilation and clarify any issue that needs more discussion.
Importance of this session	The session is very important as it will help the organizers determine the course of action for the next day. The session tries to recapitulate the discussions held on Day 1. This session also helps the participants to clarify their doubts related to the different issues held on Day 2.

**Participant
Workbook**

Recap of Day 2

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to: • Recapitulate the discussion held on Day 2 of the training programme. • Clarify their doubts related to the sessions held on Day 2. • Learn about the sessions to be held on Day 3.	

Methods of Delivery: Presentation and discussion by participants

Approximate Duration: 15 minutes

Needs and Damage Assessment

Duration	60 minutes
Main Points	• Apart from the government it is the NGOs who carry out need and damage assessment in the aftermath of disasters. • Various tools are available to carry out need and damage assessment.
Importance of this session	NGOs play a crucial role in carrying out an effective damage and need assessment. In a post disaster scenario, a proper assessment helps the organisations to effectively cater to the need of the community. Thus, this session tries to equip you with various ways to carry out damage and need assessment.

16
SESSION

Participant Workbook

Need and Damage Assessment

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to: o Understand the need to carry out the need and damage assessment. o Understand and utilize the tools/formats available to carry out a need and damage assessment.	

Methods of Delivery: Lecture, discussions

Approximate Duration: 60 minutes

Rapid Assessment Format UN Disaster Management Team
[Aim to determine immediate response of the locality]

Type of Disaster_____; Date: _____; Time_____

Team Member_____

1. **Name of the location**	
2. **Administrative Unit and Division**	
3. **Geographical location**	
4. **Local Authorities interview (with name, Address, designation)**	
5. **Estimated total population**	
6. **Worst affected areas /population** - **No of Blocks** - **G.P.** - **Village**	
7. **Areas currently inaccessible**	
8. **Type of areas affected**	
9. **Distance from the District Head Quarters (Km)** **Accessibility of the area**	
10. **Effect on population** (a) Primary affected population - Children below 1 year - Children between 1 and 5 years old - Women - Pregnant and lactating women - Elderly (above 60) - Disabled (b) Deaths /Reports of starvation (c) Orphans (d) Injured (e) Missing (f) Homeless - Number of people - Number of families (g) Displaced/Migrated (h) Evacuated (i) Destitute (j) Need of counseling for traumatized population	Number Yes / No

11. Building	

(a) Building collapsed/ washed away
(b) Buildings partially collapsed/ washed away
(c) Buildings with minor damages (buildings that can be retrofitted)
(d) Number of schools affected
   -   Gravity of the damages
 	
(e) Number of hospitals and Health Centres affected
   -   Gravity of the damages
 	
(e) Number of Government buildings affected
   -   Gravity of the damages
 	
(f) Any other building affected
   -   Gravity of the damages
	Number
	
	Scale: 1 to 5, where 1 is no damages and 5 is completely destroyed)

12.   Infrastructure
 	
(a) Road Damaged / destroyed
   -   Scale of the damage
   -   Location
   -   Km
(b) Railways damaged
   -   Location
   -   Km
   -   Is the railway still working
(c) Bridges damaged/ collapsed
   -   Locality
   -   Villages isolated
(d) Damages to the Communication Network
(e) Damages to the Electricity Network
(f) Damages to the Telecommunication Network
	Scale: 1 to 5, where 1 is normal and 5 is completely destroyed/washed away
	
	Yes/No
	
	Yes / No
	
	Yes/No and scale of the damages
	Scale: 1 to 5 where 1 is no damages and 5 is completely destroyed

13. Health Facilities
 	
(a) Infrastructure damaged
   -   Hospitals
   -   Health Centres
   -   Vaccination Centres
 	
(b) Availability of Doctors
   -   In the area
   -
     a. In the district
(c) Availability of Paramedical staff
     b. In the area
     c. In the district
(d) Local Staff affected
     d. Doctors
     e. Paramedical Staff
 	
(e) Condition of equipments
Specify which equipments
	Number
	Scale: 1 to 5 where 1 is no damages and 5 is completely destroyed
	
	Number
	
	Number
	
	Number
	
	Scale: 1 - 5, where 1 is no damages and 5 is completely damaged/destroyed

(f) Availability of medicines/drugs f. Typology	Yes / No
(g) Availability of Vaccinations g. Typology	Yes / No
(h) Any immunization campaign was undertaken before the disaster	Yes / No
(i) Possibility of diseases outbreak	Yes / No
(j) Other health problems	List
14. Water Sanitation (a) Availability of safe drinking water (b) Availability of sanitation facilities (c) Availability of Disinfectant - Typology (d) Damages to the Water/ Sewage systems (e) Damages to the water supply system (f) Availability of portable water system (g) Agencies participating in WATSAN	Yes/No Yes/No Yes/No Scale: 1 to 5 where 1 is no damages and 5 is completely destroyed Yes/No List

15. Crop/ Agriculture Damage
 	
(a) Crop Damaged
    – Typology
    – % Of Hectare damaged
    – In Upland/ medium/ low
    – Paddy or Non paddy
    – Irrigated or non irrigated
 	
(b) Normal and actual rainfall during assessment
 	
(C) Livestock loss
(d) Availability of Health services for livestock
 	
(e) Cattle feed/ fodder availability
 	
(f) Damage to agricultural infrastructure
	
	Mm
	
	Number
	Yes/No
	Number
	
	Tonnes
	
	Scale: 1 to 5 where 1 is no damages and 5 is completely destroyed

16. Food/ Nutrition
 	
(a) Availability of food/stocks
    (1) Family
    (2) Relief
    (3) PDS
    (4) Community Kitchen
 	
(b) Expected duration of the food stock
(c) Most affected groups
    - Infant
    - Children
    - Pregnant and lactating mothers
    - Elderly
	Yes/No
	Kg
	Tonnes
	Tonnes
	Kg
	
	Days
	To be ticked

(d) Where are the different groups located? (e) Levels of malnutrition? (f) Type of food required (g) Total quantity/ration levels required (h) How is the food supply and nutrition situation likely to evolve in coming weeks/months?	Days To be ticked
1. 15. Secondary Threats (a) Potentially hazardous sites (b) Existence of epidemics (c) Scarcity of Food (d) Scarcity of Water (e) Scarcity of Shelter (f) Scarcity of Clothes (g) Any other problem	List
16. Response (a) <u>Local</u>: Govt. / NGOs/CSOs/Individuals Type of assistance (b) <u>National</u>: Govt. / NGOs/ CSOs Type of assistance (c) <u>International</u>: NGOs/ CSOs Type of assistance	To be ticked Description To be ticked Description To be ticked Description
17. Logistic and Distribution system (a) Availability of Storage facilities (b) Means of transportation available (c) Availability of Fuel (d) Are there any distribution criteria already in place Availability of manpower	Yes/No List Yes/No Yes/No Yes/No
18. Priority Needs Search and Rescue: (a) Need of Search and Rescue – Locally available – Needed from neighbouring districts – Needed from neighbouring States (Indicate from where) (b) Need of transportation and equipments: - Boats - Any other transportation (specify) - Special Equipments (specify) - Heavy equipments (specify) (c) Need of shelter – Temporary – Permanents	Yes/No

Clothing:
- (a) Children Clothing
- (b) Adult clothing
- (c) Winter clothing
- (d) Blankets
- (e) Bed Sheets   Estimated quantity

1.1 Food Item:
- (a) Pulses
- (b) Grains
- (c) Baby food
- (d) Specialised food
- (e) Cattle feeds/fodder

Water / sanitation:
- (a) Potable water
- (b) Chlorine powder and disinfectant
- (c) Latrine
- (d) Soap
- (e) Detergent
- (f) Insecticides
- (g) Disinfestations of water body
- (h) Manpower for carcass disposal

1.2 Health:
- (A) Medical staff
- (b) Medicines (specify)
- (c) IV fluid
- (d) ORS
- (e) Vitamin A
- (f) Vaccines
- (g) Mobile units (quantity to be specified)
- (h) Cold chain system

1.3 Education:
- (a) Infrastructure temporary / permanent
- (b) Teachers
- (c) Teacher kits
- (d) Reading materials
- (e) Availability of mid-day meal   List

Crop/ Agriculture:
- (a) Need of seeds
- (b) Fertiliser, Pesticide   Yes/No and specify location
- (c) Types of Seeds required   Yes/No and specify location
- (d) Availability of local variety
- (e) Availability of resources

Infrastructure: List
- (a) Repair of roads,
- (b) Repair of railways and bridges   Number of Man days
- (c) Power supply
- (d) Telecommunication
- (e) Equipments required for restoration
- (f) Manpower required

- **Observation:**

- **Source of Information:**

- **Site visit:**

- **Interaction with affected population:**

- **Assessment Carried By:**

Duration	150 minutes
Main Points	• Discuss various problems and solutions in a post disaster scenario in the following sectors:- - Education - Health - Livelihood - Shelter
Importance of this session	Since this is the last formal session, it intends to give the participants an overall understanding of the problems faced and the solutions for various sectors like education, health, livelihood and shelter in a post disaster scenario. The participants are expected to sit in groups and discuss these issues and share it with the larger group for more suggestions and comments. This will result in a common and greater understanding amongst the participants present during the training programme.

17
SESSION

Participant Workbook

Group Work

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to: a) Understand various problems that arise after a disaster. b) Suggest various solutions and c) Understand the role of NGOs in carrying out a need and damage assessment in these sectors.	

Methods of Delivery: Discussion and Presentation method along with sharing of experiences.

Approximate duration: 150 minutes

Development of Action Plan

Duration	60 minutes
Main Points	• NGOs have a crucial role to play in helping the community to be better prepared. • Each NGO can take the responsibility of preparing the community in its area of operation. • To avoid duplication of efforts, NGOs can prepare a plan of action where they decide the area for taking the initiative and the time frame in which the assigned task could be completed.
Importance of this session	The session is one of the most important sessions as itwould help the participants/NGOs avoid replication and duplication of efforts in helping the community to be better prepared. The involvement of NGOs in the preparedness process will be of immense help for the community to effectively face any disaster.

18
SESSION

Participant Workbook

Development of Action Plan

	Participant Notes
Enabling Objectives At the end of the session, the participants will be able to: • Understand the role of the NGOs • Identify clearly their area of operation and the time frame for the completion of the assignment.	

Methods of Delivery: Discussion and presentation method

Approximate duration: 60 minutes

Session-wise Feedback by Participants

Kindly comment on the following
a. Participant Workbook:

- Content

- Sequencing of session

- Amount of Information (too much, too little, just right)

b. Session Delivery:

- Content covered

- Time

- Use of methods (presentation, exercises demonstration and others)

- Interactivity with participant

What I like	What could improve
DAY 1	
Session 1: Introduction	
Session 2: What is Disaster Risk Management?	

Session 3: Institutional Framework of Disaster Management in India?

Session 4: Mainstreaming Disaster Risk Reduction with Development

Session 5: Who are the Stakeholders in DRM?

Session 6: DRM Practitioners, Role, Responsibilities and Opportunities

Session 7: Feedback and Closing of Day 1

DAY 2
Session 8: Recap of Day 1
Session 9: Participatory Learning Appraisal
Session 10: Prepararion of Community Based Disaster Management plan
Session 11: Film Show
Session 12: Mock Drill

Session 13: Gender Mainstreaming in Planning Process	131

Session 14: Feedback and Closing of Day 2	

DAY 3	
Session 15: Recap of Day 2	

Session 16: Need and Damage Assessment	

Session 17: Group Work	

Session 18: Development of Action Plan

Session 19: Overall Evaluation and Feedback

Session 20: Valedictory and Closing

Valedictory and Closing

Duration	45 minutes
Importance of this session	This session is very important as participants share their experiences during the three-day training. The feedback received from participants would help the organisers to be better equipped for training programmes in the future. This session also reaffirms the plan of action designed by the participants.

Methods of Delivery: Discussion.

Approximate duration: 45 Minutes

Glossary of Terms

Terminology: Basic terms of disaster risk reduction The ISDR Secretariat presents these basic definitions on DRR in order to promote a common understanding on this subject, for use by the public, authorities and practitioners. The terms are based on a broad consideration of different international sources. This is a continuing effort to be reflected in future reviews, responding to a need expressed in several international venues, regional discussions and national commentary. Feedback from specialists and other practitioners to improve these definitions will be most welcome.

Acceptable risk	The level of loss a society or community considers acceptable given existing social, economic, political, cultural, technical and environmental conditions. *In engineering terms, acceptable risk is also used to assess structural and non-structural measures undertaken to reduce possible damage at a level which does not harm people and property, according to codes or "accepted practice" based, among other issues, on a known probability of hazard.*
Biological hazard	Processes of organic origin or those conveyed by biological vectors, including exposure to pathogenic micro-organisms, toxins and bioactive substances, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. *Examples of biological hazards: outbreaks of epidemic diseases, plant or animal contagion, insect plagues and extensive infestations.*
Building codes	Ordinances and regulations controlling the design, construction, materials, alteration and occupancy of any structure to insure human safety and welfare. Building codes include both technical and functional standards.
Capacity	A combination of all the strengths and resources available within a community, society or organization that can reduce the level of risk, or the effects of a disaster. *Capacity may include physical, institutional, social or economic means as well as skilled personal or collective attributes such as leadership and management. Capacity may also be described as capability.*
Capacity building	Efforts aimed to develop human skills or societal infrastructures within a community or organization needed to reduce the level of risk. *In extended understanding, capacity building such as technology at different levels and sectors of the society. This also includes development of institutional, financial, political and other resources.*

Climate change	The climate of a place or region is changed if over an extended period (typically decades or longer) there is a statistically significant change in measurements of either the mean state or variability of the climate for that place or region. *Changes in climate may be due to natural processes or to persistent anthropogenic changes in atmosphere or in land use. Note that the definition of climate change used in the United Nations Framework Convention on Climate Change is more restricted, as it includes only those changes which are attributable directly or indirectly to human activity.*
Coping capacity	The means by which people or organizations use available resources and abilities to face adverse consequences that could lead to a disaster. *In general, this involves managing resources, both in normal times as well as during crises or adverse conditions. The strengthening of coping capacities usually builds resilience to withstand the effects of natural and human-induced hazards.*
Counter measures	All measures taken to counter and reduce disaster risk. They most commonly refer to engineering (structural) measures but can also include non-structural measures and tools designed and employed to avoid or limit the adverse impact of natural hazards and related environmental and technological disasters.
Disaster	A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources. *A disaster is a function of the risk process. It results from the combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences of risk.*
DRM	The systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards.
DRR	The conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development. *The disaster risk reduction framework is composed of the following fields of action, as described in ISDR's publication 2002 "Living with Risk: a global review of disaster reduction initiatives", page 23:*

	• *Risk awareness and assessment including hazard analysis and vulnerability/capacity analysis;* • *Knowledge development including education, training, research and information;* • *Public commitment and institutional frameworks, including organisational, policy, legislation and community action;* • *Application of measures including environmental management, land-use and urban planning, protection of critical facilities, application of science and technology, partnership and networking, and financial instruments;* *Early warning systems including forecasting, dissemination of warnings, preparedness measures and reaction capacities.*
Early warning	The provision of timely and effective information, through identified institutions, that allows individuals exposed to a hazard to take action to avoid or reduce their risk and prepare for effective response. *Early warning systems include a chain of concerns, namely: understanding and mapping the hazard; monitoring and forecasting impending events; processing and disseminating understandable warnings to political authorities and the population, and undertaking appropriate and timely actions in response to the warnings.*
Ecosystem	A complex set of relationships of living organisms functioning as a unit and interacting with their physical environment. *The boundaries of what could be called an ecosystem are somewhat arbitrary, depending on the focus of interest or study. Thus the extent of an ecosystem may range from very small spatial scales to, ultimately, the entire Earth (IPCC, 2001).*
El Niño-southern oscillation (ENSO)	A complex interaction of the tropical Pacific Ocean and the global atmosphere that results in irregularly occurring episodes of changed ocean and weather patterns in many parts of the world, often with significant impacts, such as altered marine habitats, rainfall changes, floods, droughts, and changes in storm patterns. *The El Niño part of ENSO refers to the well-above-average ocean temperatures along the coasts of Ecuador, Peru and northern Chile and across the eastern equatorial Pacific Ocean, while the Southern Oscillation refers to the associated global patterns of changed atmospheric pressure and rainfall. La Niña is approximately the opposite condition to El Niño. Each El Niño or La Niña episode usually lasts for several seasons.*
Emergency management	The organization and management of resources and responsibilities for dealing with all aspects of emergencies, in particularly preparedness, response and rehabilitation. *Emergency management involves plans, structures and arrangements established to engage the normal endeavours of*

	government, voluntary and private agencies in a comprehensive and coordinated way to respond to the whole spectrum of emergency needs. This is also known as disaster management.
Environmental impact assessment (EIA)	Studies undertaken in order to assess the effect on a specified environment of the introduction of any new factor, which may upset the current ecological balance. *EIA is a policy making tool that serves to provide evidence and analysis of environmental impacts of activities from conception to decision-making. It is utilised extensively in national programming and for international development assistance projects. An EIA must include a detailed risk assessment and provide alternatives solutions or options.*
Environmental degradation	The reduction of the capacity of the environment to meet social and ecological objectives, and needs. *Potential effects are varied and may contribute to an increase in vulnerability and the frequency and intensity of natural hazards.* *Some examples: land degradation, deforestation, desertification wildland fires, loss of biodiversity, land, water and air pollution, climate change, sea level rise and ozone depletion.,*
Forecast	Definite statement or statistical estimate of the occurrence of a future event (UNESCO, WMO). *This term is used with different meanings in different disciplines*
Geological hazard	Natural earth processes or phenomena that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. *Geological hazard includes internal earth processes or tectonic origin, such as earthquakes, geological fault activity, tsunamis, volcanic activity and emissions as well as external processes such as mass movements: landslides, rockslides, rock falls or avalanches, surfaces collapses, expansive soils and debris or mud flows.* *Geological hazards can be single, sequential or combined in their origin and effects.*
Geographic information systems (GIS)	Analysis that combine relational databases with spatial interpretation and outputs often in form of maps. A more elaborate definition is that of computer programmes for capturing, storing, checking, integrating, analysing and displaying data about the earth that is spatially referenced. *Geographical information systems are increasingly being utilised for hazard and vulnerability mapping and analysis, as well as for the application of disaster risk management measures.*
Greenhouse gas (GHG)	A gas, such as water vapour, carbon dioxide, methane, chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), that absorbs and re-emits infrared radiation, warming the earth's surface and contributing to climate change (UNEP, 1998).

Hazard	A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. *Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydro meteorological and biological) or induced by human processes (environmental degradation and technological hazards). Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterized by its location, intensity, frequency and probability.*
Hazard analysis	Identification, studies and monitoring of any hazard to determine its potential, origin, characteristics and behaviour.
Hydro meteorological hazards	Natural processes or phenomena of atmospheric, hydrological or oceanographic nature, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. *Hydrometeorological hazards include: floods, debris and mud floods; tropical cyclones, storm surges, thunder/hailstorms, rain and wind storms, blizzards and other severe storms; drought, desertification, wildland fires, temperature extremes, sand or dust storms; permafrost and snow or ice avalanches. Hydrometeorological hazards can be single, sequential or combined in their origin and effects.*
La Niña	(see El Niño-Southern Oscillation).
Land-use planning	Branch of physical and socio-economic planning that determines the means and assesses the values or limitations of various options in which land is to be utilized, with the corresponding effects on different segments of the population or interests of a community taken into account in resulting decisions. *Land-use planning involves studies and mapping, analysis of environmental and hazard data, formulation of alternative land-use decisions and design of a long-range plan for different geographical and administrative scales.* *Land-use planning can help to mitigate disasters and reduce risks by discouraging high-density settlements and construction of key installations in hazard-prone areas, control of population density and expansion, and in the siting of service routes for transport, power, water, sewage and other critical facilities.*
Mitigation	Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.
Natural hazards	Natural processes or phenomena occurring in the biosphere that may constitute a damaging event.

	Natural hazards can be classified by origin namely: geological, hydrometeorological or biological. Hazardous events can vary in magnitude or intensity, frequency, duration, area of extent, speed of onset, spatial dispersion and temporal spacing.
Preparedness	Activities and 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.
Prevention	Activities to provide outright avoidance of the adverse impact of hazards and means to minimize related environmental, technological and biological disasters. *Depending on social and technical feasibility and cost/benefit considerations, investing in preventive measures is justified in areas frequently affected by disasters. In the context of public awareness and education, related to disaster risk reduction changing attitudes and behaviour contribute to promoting a "culture of prevention".*
Public awareness	The processes of informing the general population, increasing levels of consciousness about risks and how people can act to reduce their exposure to hazards. This is particularly important for public officials in fulfilling their responsibilities to save lives and property in the event of a disaster. *Public awareness activities foster changes in behaviour leading towards a culture of risk reduction. This involves public information, dissemination, education, radio or television broadcasts, use of printed media, as well as, the establishment of information centres and networks and community and participation actions*
Public information	Information, facts and knowledge provided or learned as a result of research or study, available to be disseminated to the public.
Recovery	Decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk. *Recovery (rehabilitation and reconstruction) affords an opportunity to develop and apply disaster risk reduction measures.*
Relief / response	The provision of assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. It can be of an immediate, short-term, or protracted duration.
Resilience / resilient	The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organizing itself to increase its capacity for learning from past disasters for better future protection and to improve risk reduction measures.

Retrofitting (or upgrading)	Reinforcement of structures to become more resistant and resilient to the forces of natural hazards. *Retrofitting involves consideration of changes in the mass, stiffness, damping, load path and ductility of materials, as well as radical changes such as the introduction of energy absorbing dampers and base isolation systems. Examples of retrofitting includes the consideration of wind loading to strengthen and minimize the wind force, or in earthquake prone areas, the strengthening of structures.*
Risk	The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions. *Conventionally risk is expressed by the notation Risk = Hazards x Vulnerability. Some disciplines also include the concept of exposure to refer particularly to the physical aspects of vulnerability.* *Beyond expressing a possibility of physical harm, it is crucial to recognize that risks are inherent or can be created or exist within social systems. It is important to consider the social contexts in which risks occur and that people therefore do not necessarily share the same perceptions of risk and their underlying causes. activity disrupted or environment.*
Risk assessment/analysis	A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend. *The process of conducting a risk assessment is based on a review of both the technical features of hazards such as their location, intensity, frequency and probability; and also the analysis of the physical, social, economic and environmental dimensions of vulnerability and exposure, while taking particular account of the coping capabilities pertinent to the risk scenarios.*
Structural / non-structural measures	Structural measures refer to any physical construction to reduce or avoid possible impacts of hazards, which include engineering measures and construction of hazard-resistant and protective structures and infrastructure. *Non-structural measures refer to policies, awareness, knowledge development, public commitment, and methods and operating practices, including participatory mechanisms and the provision of information, which can reduce risk and related impacts.*
Sustainable development	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of "needs", in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social

	organization on the environment's ability to meet present and the future needs. (Brundtland Commission, 1987). *Sustainable development is based on socio-cultural development, political stability and decorum, economic growth and ecosystem protection, which all relate to disaster risk reduction.*
Technological hazards	Danger originating from technological or industrial accidents, dangerous procedures, infrastructure failures or certain human activities, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. *Some examples: industrial pollution, nuclear activities and radioactivity, toxic wastes, dam failures; transport, industrial or technological accidents (explosions, fires, spills).*
Vulnerability	The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards. *For positive factors, which increase the ability of people to cope with hazards, see definition of capacity.*
Wild land fire	Any fire occurring in vegetation areas regardless of ignition sources, damages or benefits.

Disaster Risk Management Programme

Repeated disasters threaten sustainable development. Disasters destroy decades of human efforts and investments towards development, thereby placing heavy demands on society for reconstruction and rehabilitation. Between the years 1991 to 2000, Asia has accounted for 83% of the population affected by disasters globally. Within Asia, 24 percent of deaths due to disasters occur in India, on account of its size, population and vulnerability. The Indian sub-continent is highly prone to natural disasters. Geographically floods affect 40 million hectares of the land, cyclones affect particularly the east and west coastal areas and 59 percent of the land is vulnerable to earthquakes. High level of risks combined with low levels of local capacity to cope with the hazards result in major loss of lives, property and livelihood.

Disaster Risk Management Programme:
The GoI (Government of India) and UNDP (United Nations Development Programme) Disaster Risk Management programme provides support to the Government to set up an institutional framework addressing issues of disaster preparedness, response, prevention and mitigation. In addition, a sub-component of the programme focuses on earthquake vulnerability reduction in 38 cities falling in zones III to V (medium to high risk to Earthquakes) having a population of more than half a million each.

The progarmme objectives are:

a. Capacity building to institutionalize systems for DRM in the government

b. Support preparation of participatory multi-hazard preparedness plans, through preparation of response and mitigation plans for disaster risk management at state, district, block, and village and ward level in 176 most multi-hazard prone districts of 17 selected states (roughly covering 30 percent of India's population).

c. Awareness generation and education programmes in disaster risk reduction and recovery

d. Networking knowledge on effective approaches, methods and tools for disaster risk management, developing and promoting policy frameworks at state and national levels.

The DRM programme is being funded under a multi donor framework of $ 41 million. Apart from UNDP other donors such as the European Union (EU), the United States Agency for International Development (USAID), the Government of Japan, the Australian Agency for International development (AUSAID), Department of International Development (DFID), the European Commission Humanitarian Aid Office (ECHO) and United Nations International Strategy for Disaster reduction (UNISDR) are part of this framework.

The use and sharing of information in this module is encouraged, with due acknowledgement of the source.

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