

UNIT 2

APPROACHES TO DISASTER RISK REDUCTION

DISASTER CYCLE OR DISASTER MANAGEMENT CYCLE



The ongoing process by which governments, businesses, and civil society plan for and reduce the impact of **disasters**, react during and immediately following a **disaster**, and take steps to recover after a **disaster** has occurred.

KEY NOTES FOR DISASTER

- Mitigation - Minimizing the effects of disaster.
Examples: vulnerability analyses; public education.
- Preparedness - Planning how to respond.
Examples: preparedness plans; emergency exercises/training; warning systems.
- Response - Efforts to minimize the hazards created by a disaster.
Examples: search and rescue; emergency relief .
- Recovery - Returning the community to normal.
Examples: temporary housing; medical care

DISASTER RISK REDUCTION

Disaster risk reduction (DRR) is a systematic approach to identifying, assessing and reducing the risks of disaster. It aims to reduce socio-economic vulnerabilities to disaster as well as dealing with the environmental and other hazards that trigger them.

Disaster Risk Reduction (DRR) aims to reduce the damage caused by natural hazards like earthquakes, floods, droughts and cyclones, through an ethic of prevention. **Disasters** often follow natural hazards. A **disaster** depends on how much impact a hazard has on society and the environment.

PHASES OF DISASTER

The four phases of disaster: 1) mitigation; 2) preparedness; 3) response; and 4) recovery

MITIGATION

- Taking actions to reduce or eliminate long-term risk to people and property from hazards and their effects
- Information that provides a foundation for typical mitigation measures
- Effective Mitigation efforts can break the cycle of disaster damage, reconstruction, and repeated damage.

The mitigation activities are to:

- Protect people and structures.
- Reduce the costs
- Restricting deforestation to prevent slides
- Construction of roads and bridges to withstand the disaster

PREPAREDNESS

- Preparedness includes plans or other preparations made to save lives and facilitate response and recovery operations
- During the preparedness phase, governments, organizations, and individuals develop plans to save lives, minimize disaster damage, and enhance disaster response operations.
- The disaster preparedness activities guide provide more information on how to prepare an better organization and business community for a disaster

The goals of preparedness activities are

- Planning, assigning, and training staff who can assist in areas of response operations.
- Identifying resources and supplies that may be required in an emergency

RESPONSE

- It addresses immediate threats presented by the disaster including saving lives, meeting humanitarian needs (foods, shelter, clothing, public health and safety), cleanup and start resource distribution

- The actions taken before increasing mortality and morbidity and to prevent further property damage when an event occurs

Response activities include:

- Applying intelligence and other information to lessen the effects or consequences of an incident.
- Increasing security operations.
- Continuing investigations into the nature and source of the threat.
- Ongoing public health and agricultural surveillance
- Specific law enforcement operations aimed at preempting, interdicting, or disrupting illegal activity, and apprehending actual perpetrators and bringing them to justice.
- Ensuring continuity of critical services (e.g., law enforcement, public works). In other words, response involves putting preparedness plans into action.

RECOVERY

- Actions taken to return a community to normal or near-normal conditions, the repair of physical, social and economic damages
- Recovery begins right after the emergency
- It can be divided into two periods.

SHORT TERM : This phase lasts from 6 months to atleast one year

LONG TERM : Range upto decades requires strategic planning and action to the impacts of disaster

The recovery activities are

- Identify needs and define resources.
- Provide housing
- Address long-term care and treatment of affected persons.
- Implement additional measures for community restoration.
- Evaluate the incident to identify lessons learned.

CULTURE OF SAFETY

Culture of safety is a collection of the beliefs, intelligence and values that employees share inrelation to risks within an organization, such as workplace or community

The safety of workers depends on many factors including training and technology in place to prevent disaster.

ADVISORIES FROM APPROPRIATE AGENCIES

National Disaster Response Force (NDRF)

- The DM Act (Disaster Management Act), 2005 made the statutory provisions for the constitution of the National Disaster Response Force (NDRF) with the objective of specialized response to natural and man-made disasters.
- As per the Section 45 of the DM Act 2005, the NDRF has to function under the general superintendence, direction and control of the National Disaster Management Authority (NDMA) and under command and supervision of Director General, NDRF.
- NDRF a specialist force, the force is gradually emerging as the most visible and vibrant multi-disciplinary, multi-skilled, high-tech force of the NDMA capable of dealing with all types of natural and man-made disasters.
- At present, National Disaster Response Force (NDRF) is about constituted of battalions from the BSF, CRPF, CISF and ITBP.

National Disaster Management Authority (NDMA)

- The National Disaster Management Authority (NDMA), headed by the Prime Minister of India, is the Apex Body for Disaster Management in India.
- The setting up of the NDMA and the creation of an enabling environment for institutional mechanisms at the State and District levels is mandated by the Disaster Management Act, 2005.
- National Disaster Management Authority (NDMA), headed by the Prime Minister of India
- State Disaster Management Authorities (SDMAs) headed by respective Chief Ministers of the States
- National Disaster Management Authority has been constituted with the Prime Minister of India as its Chairman, a Vice Chairman with the status of Cabinet Minister, and eight members with the status of Ministers of State.
 - NDMA as the apex body is mandated to lay down the policies, plans and guidelines for Disaster Management to ensure timely and effective response to disasters.

Towards this, it has the following **responsibilities**:-

- ✓ Lay down policies on disaster management;

- ✓ Approve the National Plan;
- ✓ Approve plans prepared by the Ministries or Departments of the Government of India in accordance with the National Plan;
- ✓ Lay down guidelines to be followed by the State Authorities in drawing up the State Plan;
- ✓ Coordinate the enforcement and implementation of the policy and plan for disaster management;
- ✓ Recommend provision of funds for the purpose of mitigation
- ✓ Provide such support to other countries affected by major disasters as may be determined by the Central Government;
- ✓ Take such other measures for the prevention of disaster, or the mitigation, or preparedness and capacity building for dealing with the threatening disaster situation or disaster

National Institute of Disaster Management (NIDM)

- The National Institute of Disaster Management (NIDM) was constituted under an Act of Parliament with a vision to play the role of a premier institute for capacity development in India and the region.
- Under the Disaster Management Act 2005, NIDM has been assigned nodal responsibilities for human resource development, capacity building, training, research, documentation and policy advocacy in the field of disaster management.
- NIDM provides technical support to the state governments through the Disaster Management Centres (DMCs) in the Administrative Training Institutes (ATIs) of the States and Union Territories.
- NIDM hosts the SAARC Disaster Management Centre (SDMC) and works as its national focal point.

Functions include:

- ✓ Development of training material
- ✓ Formulate a comprehensive human resource plan
- ✓ Provide inputs to governments
- ✓ Develop educational materials for disaster management including academic and professional courses
- ✓ Promote awareness
- ✓ Conduct study courses

International Strategy for Disaster Reduction (ISDR)

- Created in December 1999, UNISDR is the secretariat of the International Strategy for Disaster Reduction (ISDR).
- Its core areas of work includes ensuring disaster risk reduction (DRR) is applied to climate change adaptation, increasing investments for DRR, building disaster-resilient cities, schools and hospitals, and strengthening the international system for DRR.

- UNISDR's vision is based on the strategic goals of the Hyogo Framework for Action:
 - Integrating DRR into sustainable development policies and planning,
 - Developing and strengthening institutions
 - Mechanisms and capacities to build resilience to hazards, and incorporating risk reduction approaches into emergency preparedness, response, and recovery programmes.

STATE DISASTER MANAGEMENT AUTHORITY (SDMA)

- The State Disaster Management Authority was established in the State under the Chairmanship of the Chief Minister with 8 other members under section 14 of the Disaster Management Act, 2005 by a Government notification dated 26th June, 2008. It is the apex body for disaster management in the State.
- The State Executive Committee headed by the Chief Secretary with 4 other Secretaries as members was also set up to assist the State Disaster Management Authority in the performance of its functions.
- The District Disaster Management Authorities under the Chairmanship of the Deputy Commissioners and Chief Executive Members of the District Councils as Co-Chairmen with 5 District Officials as members were also set up for the better management of disasters in the Districts.

Powers and Functions of SDMA

- ✓ To lay down the disaster management policies and plans for state
- ✓ To lay down state disaster management policy
- ✓ Approve state plans as per guidelines of national plans.
- ✓ To lay down guidelines to be followed by departments of the state.

EARLY WARNING SYSTEM

DEFINITION OF EARLY WARNING SYSTEM

It is defined as the set of capabilities needed to generate and disseminating timely and meaningful warning information of the possible extreme events or disaster

Eg. Flood, drought, fire, earthquake..etc

- ✓ The early warning is used to describe the provision of information on a dangerous situation where that information can enable action to reduce the risks involved.

- ✓ It exists for biological hazards, industrial hazards, personal health and many other hazard
- ✓ The purpose of this information is to enable individual, communities, organizations threatened to prepare and act appropriately and in sufficient time to reduce the possibility of harm or loss
- ✓ Every warning information come from different meterological offices

There are four basic elements to an early warning system where each part must function efficiently for the system to be successful:

- **Risk knowledge** builds the baseline understanding about risks (hazards and vulnerabilities) and priorities at a given level.
- **Monitoring** is the logical follow-on activity to keep up-to-date on how those risks and vulnerabilities change through time.
- **Disseminating information** it provides delivery warning messages to potential location to alert local and regional government agencies. Messages should be simple and understandable
- **Response capability** insists on each level being able to reduce risk once trends are spotted and announced
- **Warning communication** packages the monitoring information into actionable messages understood by those that need, and are prepared, to hear them

TYPES OF EARLY WARNING SYATEM

Community Based Early Warning Systems (CBEWS)

- A Community-Based Early Warning Systems (CBEWS) is a system developed, managed and maintained by the community itself, that empowers individuals and communities threatened by hazards to act in sufficient time and in an appropriate manner
- It reduce the possibility of personal injury, loss of life, damage to property, environment and loss of livelihood.
- It help the ways to help communities use local resources and capacities effectively to better prepare for and respond to disasters and adopt measures to reduce their vulnerability.

Communication based early warning system

For an effective early warning system needs an effective communication system There are 2 components

1. communication infrastructure

- The information which can be obtained by proper communication system.

- Therefore, proper systems are provided for effective communication

2. Appropriate and effective infrastructure

- The information that are collected are delivered by appropriate source like SMS, radio, TV and internet
- Here ICT (Information communication system) plays an important role in disaster communication
- It spread the information to warn the public

Benefits of Early warning systems:

1. Reduction in loss of life
2. Early notification of emergency system
3. Improved traffic control
4. Reduced public stress



RISK ASSESSMENT

The identification, evaluation, and estimation of the levels of risks involved in a situation or hazard

STRUCTURAL MEASURES IN DRR

- No buildings can be made 100% safe against earthquake forces
- Any physical construction to reduce possible impacts of hazards i.e, engg techniques or technology to achieve hazard resistance
- Instead buildings and infrastructures can be made earthquake resistant to certain extent depending upon serviceability requirements
- Earthquake resistant design of buildings depends upon providing the building with strength, stiffness and inelastic deformation capacity which are great enough to withstand a given level of earthquake-generated force.
- This is generally accomplished through the selection of an appropriate structural configuration and the careful detailing of structural members, such as beams and columns, and the connections between them
- There are several different experimental techniques that can be used to test the response of structures to verify their seismic performance, one of which is the use of an earthquake shaking table (a shaking table, or simply shake table).
- This is a device for shaking structural models or building components with a wide range of simulated ground motions, including reproductions of recorded earthquakes time histories.

NON STRUCTURAL MEASURES IN DRR

For getting the structural measures implemented with honesty of purpose and use of non-structural measures in the form of policies guidelines and training have to be provided.

- Policy decisions about construction of structures with due approval from specified authorities have to be taken.
- The building codes etc have to be suitably amended and appropriately detailed and legal implications properly stated
- Guidelines both for earthquake-resistant constructions with specifications about site selection, foundation, construction, materials and workmanship making involvement of specialist architects, trained engineer and masons mandatory.
- The guidelines have to be formulated for the concerned authorities about land use planning, monitoring of construction work and controlling of settlements in hazard prone areas to avoid fatalities and loss of property.eg: policy, bills, documents, public knowledge

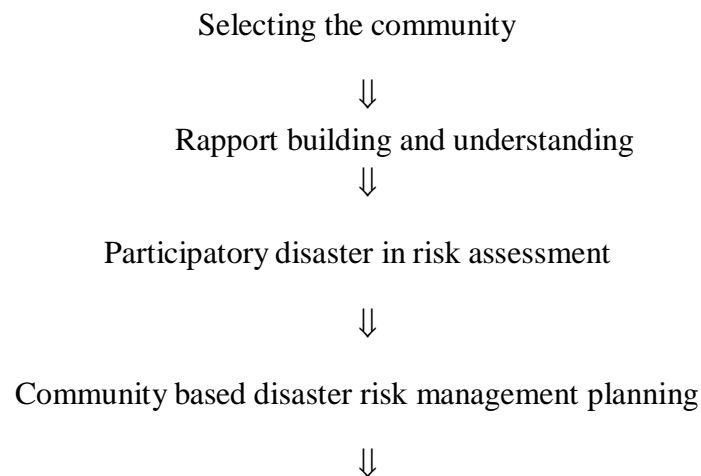
Community based disaster preparedness (CBDP)

Objectives

- To understand how community people can take the help of resources/NGOs for disaster preparedness
- Successful disaster preparedness strategies involve careful efforts to combine knowledge, technology, skills and practices
- NGO play various ways in community based disaster preparedness

STAGES IN DISASTER RISK REDUCTION

Disaster risk reduction process has 6 sequential stages.Each stages leads to further actions



Community managed implementation



Monitoring and evaluation

Selecting the community

- It is the first task of NGOs to conduct a detailed risk assessment survey of the whole area
- The selection of communities implementation of CBDP activities depends upon a number of factors and criteria

Criteria for identifying communities for CBDP activities

- Most vulnerable exposure to risk
- Poverty status of the community
- Government priority of physical, social, and economic vulnerability
- Budget availability

Rapport building and understanding

- This step is usually involves interacting and integrating with the community and gathering information to have a general description of the community
- Once the most vulnerable communities are identified it is important to understand local social relationship to build good informal relationship with the local people
- The NGOs who support the community in disaster preparedness need to build a picture of nature, needs and resources of the community

Participatory disaster risk assessment

- It is the process of identifying the risk that communities, villages face and how people overcome those risk
- This will be conducted in most vulnerable and priority communities
- This process involves hazard assessment, vulnerability assessment and capacity assessment, analysis and prioritization of risk
- The participatory risk will be conducted by NGOs with the involvement of local people, community

Community based disaster risk management planning

- At this stage the further analysis will be conducted jointly by NGO's and communities o analyse the risk and identity strategies and solutions to address them

- Based on this a detailed risk reduction and response plan will be developed for the particular communities
- Roles and responsibilities of the various stakeholders for implementation of activities will be clarified

Community managed implementation

- The implementation of plan should be done through the community organization at community level with the support from NGO and other technical institution
- The implementation process will include various structural and non structural activities
- The community based organization would be responsible for overall management of the disaster reduction activities
- The NGO plays a facilitating and coordinating roles for the implementation of the community plan and resources

Monitoring and evaluation

Participatory monitoring and evaluation (PME) involves local community, development agencies, NGOs, local authorities, PRI members and other stakeholders in measuring the progress made and identifying necessary follow action

MITIGATION STRATEGIES

The mitigation strategy is made up of three main required components:

1. mitigation goals
2. mitigation actions
3. Action plan for implementation.

These provide the framework to identify, prioritize and implement actions to reduce risk to



Mitigation goals are general guidelines that explain what the community wants to achieve with the plan .They are usually broad policy-type statements that are long-term, and they represent visions for reducing or avoiding losses from the identified hazards.

- Example goal: Minimize new development in hazard-prone areas.

Mitigation actions are specific projects and activities that help achieve the goals.

- Example action: Amend zoning ordinance to permit only open space land uses within floodplains.

Action plan describes how the mitigation actions will be implemented, including how those actions will be prioritized, administered and incorporated into the community's existing planning mechanisms.



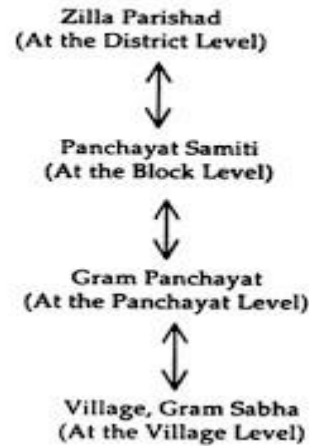
- Some communities choose to develop objectives to help define or organize mitigation actions . Objectives are broader than specific actions, but are measurable, unlike goals. Objectives connect goals with the actual mitigation actions.

PANCHAYAT RAJ INSTITUTION

- The term "Panchayati Raj" is an ancient concept adopted by the people of India for the local administration of a village.
- Raj means "rule".
- It is the basic unit of administration in a system of governance
- It is the backbone of villages/rural development for sustainable development
- Panchayati Raj is the basic unit of administration in a system of governance.
- The Constitutional (73rd Amendment) Act 1992 came into force in India on 24 April 1993 to provide constitutional status to the Panchayati Raj institutions.
- This act was extended to the Panchayats in the tribal areas of eight states, namely Andhra Pradesh, Gujarat, Himachal Pradesh, Maharashtra, Madhya Pradesh, Odisha and Rajasthan from 24 December 1996.

- Currently, the panchayat raj system exists in all states of india except Nagaland, megalaya, mizrom and in all union territories except Delhi

THE STRUCTURE OF PANCHAYATI RAJ SYSTEM



Village level panchayat

- In the structure of the Panchayati Raj, the Village Panchayat is the lowest unit.
- There is a Panchayat for each village or a group of villages in case the population of these villages happens to be too small.
- The Panchayat chiefly consists of representatives elected by the people of the village.
- Only the persons who are registered as voters and do not hold any office of profit under the government are eligible for election to the Panchayat.
- The persons convicted by the court for criminal offences are disqualified from election of the Panchayat.
- The Panchayat Secretary assists the Panchayat in recording decisions, keeping minutes, preparing budget estimates and reports, and does other sundry jobs like preparing notices, explaining circulars, organising Gram Sabha meetings etc.

The Block Panchayat

- A block Panchayat (Panchayatsamiti) is a local government body at the tehsil or taluka level in India.
- This body works for the villages of the tehsil or taluka that together are called a Development Block.
- The Panchayat Samiti is the link between the gram Panchayat and the district administration. There are a number of variations of this institution in different states.

District Panchayat

- The District Panchayat also known as the District Council or Zilla Parishad is the third tier of the Panchayati Raj system.
- Like the Gram Panchayat, the District Panchayat is also an elected body.
- The Zilla Parishad chairperson is the political head of the district panchayat
- The primary objective of establishing the third tier of the government is to increase democratic participation, better articulate local needs and priorities, and to ensure a more efficient use of local resources

ROLES OF PANCHAYAT RAJ INSTITUTION

- They play an important role in primary education, health, agricultural development, women participation in local government..etc
- It also play an important role in rural development and management
- The various types of programmes for rural development such as primary education, health centres, cottage industries, agricultural marketing, transportation
- Education is the important tool which cultivates the sense of responsibility and care among students
- The sustainable development of rural can be done only in healthy environment and through quality education
- Better implementation and government policies
- Management and local resources
- Cultural and religious importance

RESPONSIBILITIES OF PRIs

- ✓ Construction, repairs, maintenance, alteration and extension of village roads, provisions of lights and roads..etc
- ✓ Supply of drinking water to the villages
- ✓ Adoption of preventive measures against epidemics and other dangerous trade, registration of birth and death and preparation of necessary records for the purpose
- ✓ Preparation of census records
- ✓ Social conservation
- ✓ Adaptation and encouragement of improved methods of cultivation
- ✓ Development and maintenance of village forests
- ✓ Control of markets, fairs
- ✓ Establishment and maintenance of village libraries
- ✓ Prevention of gambling

- ✓ To keep the records about the unemployed persons

Urban Local Bodies in India

In times, as urbanization has grown and at present, rapidly growing, the necessity of urban governance is unavoidable, which too evolved gradually since British times and has taken a modern shape in post-independence times. With the 74th Amendment Act of 1992, the system of urban local governance has been constitutionally recognized.

Types of Urban Local Bodies

1. Municipal Corporation
2. Municipality
3. Notified Area Committee
4. Town Area Committee
5. Cantonment Board
6. Township
7. Port trust
8. Special purpose agency



Main Features of 74th Amendment Act

1. There shall be constituted in every State, (a) a Nagar Panchayat (b) a Municipal Council for a smaller urban area; (c) a Municipal Corporation for a larger urban area.
2. All the seats in a Municipality shall be filled by persons chosen by direct election from the territorial constituencies in the Municipal area known as wards.
3. The Legislature of a State may, by law, provide the representation in a Municipality of persons having special knowledge or experience in Municipal administration;

4. Constitution of ward committee

5. Seats shall be reserved for the Scheduled Castes and the Scheduled Tribes in every Municipality

6. Not less than one-third of the total number of seats reserved shall be reserved for women belonging to the Scheduled Castes and Scheduled Tribes.

7. A State may, by law, endow the Municipalities with such powers and authority as may be necessary to enable them to function as institutions of self-government

8. The Legislature of a State may, by law authorise a Municipality to levy, collect and appropriate such taxes, duties, tolls and fees.

9. There shall be constituted in every State at the district level a District Planning Committee to consolidate the plans prepared by the Panchayats and the Municipalities in the district and to prepare a draft development plan for the district as a whole.

10. The Legislature of a State may, by law, make provision with respect to the composition of the Metropolitan Planning Committees;