

UNIT-4

Disaster Planning & Management:

Emergency management program is based on the framework of the four phases of emergency management: prevention-mitigation, preparedness, response, and recovery. All phases are highly interconnected; that is, each phase influences the other three phases.

Prevention-Mitigation, Preparedness, Response and Recovery

Prevention-Mitigation

Prevention: The actions taken to decrease the likelihood that an event or crisis will occur

Mitigation: The actions taken to eliminate or reduce the loss of life and property Damage related to an event or crisis, particularly those that cannot be prevented;

Preparedness: activities to design and implement strategies, processes, and protocols to prepare for potential emergencies;

Response: The immediate actions to effectively contain and resolve an emergency;

Recovery: Activities and programs designed to return conditions to a level that is acceptable.

Emergency Management: which has replaced Civil defence, can be seen as a more general intent to protect the civilian population in times of peace as well as in times of war.

Civil Protection is widely used within the European Union and refers to government approved systems and resources whose task is to protect the civilian population, primarily in the event of natural and human-made disasters.

Crisis Management is the term widely used in EU countries and it emphasizes the political and security dimension rather than measures to satisfy the immediate needs of the civilian population.

Disaster risk reduction: An academic trend is towards using the term is growing, particularly for emergency management in a development management context. This Focuses on the mitigation and preparedness aspects of the emergency cycle

Preparation of emergency management programme:

Preparedness planning for disaster management is quite useful. The preparedness plans can either be short-term or long-term encompassing the organizational aims and objectives, structure for tackling disasters, preparedness measures, communication system, warning arrangements, community disaster operations, operational aspects of implementation of plans, post-disaster review, training and public awareness. A Disaster Preparedness Plan made at any level:

Provides for hazard identification and risk analysis

Indicates basic information about the resources, demography, existing organizational set up, administrative facilities at the state, district and local levels

Describes preparedness and mitigation measures as well as response mechanisms

Defines specific roles and responsibilities for various actors at different levels

Ensures networking/coordination with the media, NGOs, international agencies and other stakeholders.

Planning for disaster preparedness and mitigation:

Disaster management Programme

Natural disasters cannot be prevented, but their impact on people's lives can be reduced to a considerable extent. Disaster management covers all aspects of preventive and protective measures, preparedness, rescue, relief and rehabilitation operations. It has three phases:

1. Impact phase: This has three stages.

Pre-impact/response

- Forecast
- Early warning
- Preparedness
- Tracking/monitoring approach of disaster
- Alertness/evacuation.

Impact

- Close monitoring of impact; establishing emergency communication; deploying rescue teams; medical support and other life-saving activities. Supply/air dropping of food, drinking water and essential items.

Post-impact

- Medical care
- Food, clothing and shelter for rescued people
- Estimating loss of life and property
- Disposal of bodies/animal carcasses, prevention of epidemics
- Repair and restoration of essential services/infrastructure.

2. Relief and rehabilitation phase

- Temporary shelter/drinking water/food/clothing/minimum household utility goods for victims
- Repair of roads, electricity and communication networks
- Salvaging damage to agriculture/distribution of seeds, fertilizer, etc.
- Restoration of health/educational facilities or temporary alternative arrangements
- Distribution of ex-gratia relief for those killed and compensation for the losses

- Building durable houses for victims.

3. Long-term mitigation and preparedness phase

This is a crucial period and devoted to long-term development of disaster prone areas to minimize the impact of the hazard and prepare the people as well as all supporting systems in the area to face future disasters.

Long-term planning for preventive measures

- Soil conservation/afforestation in river catchments
- Planting shelter belts/mangroves in coastal areas
- New cropping patterns to minimize crop loss
- Prevent human settlements in low-lying areas, relocate settlements to safer places.

Long-term protective measures

- Safe construction for houses/strict implementation of safety codes
- Hazard-proof roads, bridges, canals, water reservoirs, power transmission lines, etc.
- Flood-protection measures
- Improvement of warning systems
- Organizing people for counter-disaster activities.

Role of *Panchayati Raj* bodies in local disaster management

While the government has the duty to help people in distress, the latter have a greater responsibility to help the government help them to cope with disasters. *Panchayati Raj* bodies are the most appropriate local institutions for involving people in natural disaster preparedness. *Panchayati Raj* bodies have a role to play in all phases of disaster management.

Panchayat role during first phase of natural disaster management

Gram Panchayat or village level

- Convene meetings to ensure timely warning
- Update information on civic amenities/population, etc.
- Select safe locations for people and livestock
- Arrangements to evacuate the elderly, the disabled, children and women
- Medical and sanitation facilities at relief camps
- Disconnecting power lines during high winds/gales; storing foodgrain, drinking water, etc.

Block/Mandal Panchayat

- Supervise preparedness of *Gram Panchayats* (GP)
- Consolidate village-level information on items listed under GP
- Assessing preparedness of: primary health centres/evacuation arrangements, etc.
- Engineering staff at the Block/Mandal level should repair drainage/canal/roads, etc.
- Contact ex-army/security forces personal/volunteers to organize task force for assistance
- Procure and keep ready rescue material, including boats
- Function as link between district and village-level counter-disaster activities.

Zilla Panchaya or district level

- The District Collector/CEO should convene a meeting of all District Heads of sectoral departments and ZP members before the start of likely cyclone periods (May to June & Oct. to Nov.)
- All concerned departments to take up necessary repair and maintenance and related works for preparedness
- Organize 'Task Forces' at district, block and village levels
- Identify NGOs useful in providing assistance during disasters
- Check inventories of items required at short notice for rescue and relief operations
- At first warning, call meeting of Crisis Management Group (CMG) and alert blocks/villages
- All CMG members should be asked to keep their personnel in full preparedness
- District Collector should be CMG Leader and establish a control room managed by senior officers round the clock during the crisis.

Panchayat role in rescue and relief before and during natural disaster impact

Gram Panchayat or village level

- Set up temporary shelters/relief camps after initial warning/store food and water for people/livestock
- Evacuation of people and livestock should start immediately after final warning
- Keep rescue volunteers and task forces ready
- District/block medical/relief teams may be asked take position at strategic points and coordinate with village volunteers/task forces
- Organize veterinary aid teams for taking care of livestock and removal of carcasses
- Disposal of dead bodies and measures to prevent likely epidemics
- Assessing loss of life, livestock and damage to farming, property, etc.

Block/Mandal Panchayat

- Identify vulnerable areas and send task forces/volunteers to supervise safety measures
- Evacuate people from these areas and help GPs in organizing relief camps
- Arrange for emergency communication through police wireless/ham radio, etc.
- Arrange supply of food and other items to relief camps in adequate quantities
- Supervise rescue and relief activities with district-level officers
- Inform CMG in case help needed from police and defence forces
- Assist armed forces in rescue and relief operations
- Supervise rescue and relief and coordinate with various agencies including NGOs.

Zilla Panchayat or district level

- Monitor situation, identify blocks and villages most likely to be affected and issue warnings
- Activate control room and keep a full watch on the situation
- Arrange emergency communication with the help of police wireless/ham radio, etc.
- Arrange transport for evacuation of people and livestock
- Arrange for temporary shelters/relief camps
- Seek assistance of the armed forces if necessary
- Monitor rescue and relief operations at village and block levels

- Assist lower *panchayats* in mobilizing task forces/volunteers/NGOs for rescue and relief.

Panchayat role in reconstruction and long-term mitigation planning

Gram Panchayat or village level

- Assist in identifying victims for compensation, and then in its distribution
- Formulate reconstruction plans for houses, community buildings, roads, etc. within GP jurisdiction with the assistance of technical departments at block and district levels
- Enforce minimum specifications for safe construction
- Help district and block level organizations in arranging awareness camps for management and mitigation of disasters and ensure participation of the villagers
- Organize village-level task force/volunteers and train them in counter-disaster measures
- Assist in supervising and monitoring reconstruction and development projects
- Encourage local people to insure assets/livestock, which should be mandatory for those who can afford. Seek government help for those who are too poor to afford insurance.

Block/Mandal Panchayat

- Assist in rehabilitation, repair and reconstruction
- Assist *gram panchayats* in identifying victims for payment of compensation and in its distribution
- Prepare village and block-level mitigation plans; consolidate/integrate these with the block plan
- Enforce minimum safety specifications for construction
- Assist in long-term mitigation planning and its integration with block/district development plans
- Supervise and monitor reconstruction and long-term mitigation projects implemented by GPs and Block *Panchayats*.

Zilla Panchayat or district level

- Planning and implementation of rehabilitation, repair and reconstruction
- Compensation for loss of life, property, etc.
- Hazard and vulnerability mapping
- Anti-disaster measures to be integrated in all development projects
- Special funding to use disaster-resistant construction technologies in vulnerable areas
- Supervision of all construction and developmental activities.

Psychosocial Support and Mental Health Services (PSSMHS)

Disasters causes devastating effect on the human life, usually leaving a trail of human agony including short and long term psychosocial trauma on the survivors. Generally in any response the physical effects of survivors get immediate attention and psychosocial needs

often given less importance if not intervened may lead to dysfunction and disability. Timely psycho-social support will prevent development of long term psychosocial problems and hasten the recovery of survivors. Overall goal of psychosocial support intervention would be to enhance the coping and resiliency of the community towards improving overall well being. Psychosocial Support and Mental Health Services (PSSMHS) is one of the important cross cutting areas of DM intervention. The plan for PSSMHS shall be a component of overall planning for disaster management with an aim of providing Psychosocial Support and Mental Health Services integrated with preparedness, response, mitigation, relief and rehabilitation. The Ministry of Health and Family Welfare (MoH&FW) is the nodal ministry. The overall plan for the PSSMHS will be developed by the nodal ministry, other line ministries may prepare their plans based on the nodal ministries plans.

Preparation Of Emergency Management Programme:

1. Short term Planning:

a) Capacity development

- i) Sensitising and training (Basic and advance) on PSSMHS across identified departments, sectors and levels.
- ii) Strengthening of the national, regional and nodal capacity building institutions and resource centres at district and state level.
- iii) Developing PSSMHS needs assessment indicators and templates.
- iv) Strengthening of District Counselling Centres under Dept of Social welfare/ Women and Child Development (WCD).
- v) Map vulnerable groups and accord priority in preparedness activities.
- vi) Strengthening the resource base and data management/documentation in PSSMHS.

b) Education & Training

- i) Inclusion of Disaster PSSMHS in Post-Graduate Curriculum of Psychiatry, Psychology, Social Work, Disaster Management, Emergency Medicine and Health Education.
- ii) Inclusion of PSSMHS in Under Graduate medical studies.
- iii) Integrating with all training programmes in the area of Psychology, Social Work, Mental Health, Emergency Medical Response, Hospital Administration, Nursing and Paramedics.
- iv) Involve and train local community volunteers in basic psychosocial support.
- v) Mobilize trained psychosocial response teams national and state level.

vi) Map vulnerable groups and accord priority in preparedness activities.

c) Community Based Disaster Management

i) Inclusion in the CBDM Plan and training of Panchat Raj (PRI) team members.

ii) Developing awareness materials for the community.

iii) Evolve a mechanism for community outreach education programmes on PSSMHS.

d) Networking, Awareness other Measures

i) Enhance the network of institutions working in the field of mental health, give focus for creating PPP to augment the community resources.

ii) Take measures to increase public awareness about psychosocial care in disasters.

iii) Integrating with all training programmes in the area of Psychology, Social Work, Mental Health, Emergency Medical Response, Hospital Administration, Nursing and Paramedics.

iv) Involve and train local community volunteers in basic psychosocial support.

v) Mobilize trained psychosocial response teams national and state level.

vi) Map vulnerable groups and accord priority in preparedness activities.

e) Control Room & Emergency Operation Centre:

The State level control room will be suitably equipped. A standby State level control will be developed, which will be immediately activated if the main control room gets affected due to any disaster. The district control rooms will be strengthened adequately. During emergencies temporary control rooms will be set up as close as possible to the location of the crisis. The State and district control rooms will be located in Emergency Operation Centres that will have all emergency support functions of various departments/agencies functioning together during emergencies.

f) Environmental protection:

One of the most important components of Disaster mitigation is protection of the eco system. Efforts will be made to preserve and protect these systems with people's cooperation. The Government will promote conservation and restoration measures, especially with involvement and participation of the communities dependent on such environmental niches. In drought prone areas, watershed management and improvement of the vegetative cover will be given due priority. Emphasis will be given on promoting better sewerage and waste management systems in the urban areas.

B) Mid term Plan:

- i) Creation of core group of master trainers at district level
- ii) Strengthening public-private partnership in research & development
- iii) Formation of National PSSMHS resource Inventory under national Health Resource Inventory Initiation of distance learning courses for sensitization across various categories of disaster management stakeholders.
- iv) Development and standardization of uniform training packages for different designated target groups.
- v) Initiation of distance learning courses for sensitization across different categories of disaster management stakeholders.
- vi) Incorporation of PSSMHS trainings in DMHP, district health and hospital plans.

C) Long term Plan:

- i) Intensive Post Graduate / Post Graduate Diploma courses in PSSMHS.
- ii) Streamlining of institutions and their activities

Land-use Planning: A branch of physical and socio-economic planning;

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

Involves data studies and mapping; analysis of environmental and hazard data

Formulates alternative land-use decisions and design of a long-range plan for different Geographical and administrative scales

Helps to mitigate disasters by discouraging high-density settlements and construction of key installations in hazard-prone areas, control of population density and expansion

Facilitates charting of service routes for transport, power, water, sewage and other critical facilities.

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; because it is a very simple and cost-effective tool to collect ground level data. This is done through Participatory Rural Appraisal (PRA) exercise. Before the mapping exercise starts, the community members discuss among themselves their experiences/observations of previous disasters they have faced or the disasters they may face in future. It :

provides a pictorial base to the planning process, especially for the semi-literate populace and ensures maximum community involvement across gender, caste and other divides

Is found to be very effective in raising awareness among the community, and thereby enhancing participation of the community in problem identification

Makes use of locally available resources rather than depending on the external agencies for help and support

Encourages villagers/community members to draw the maps on the ground using locally available materials such as stone, sand and various colour powders for different items and indicators

Mapping is of various types:

a) Safe Mapping

It is called safe or opportunity mapping. It includes:

Road, alternative route, boats, communication centres

Safe shelter

Elevated lands, high land (mounds)

Alternate route for safe evacuation

Safe Primary Health Centres, Fire Stations, Police Stations

Safe place for evacuees

Godown, food stock availability, fodder availability etc.

Site for storing foodstuff

Identification of Disaster Management Teams

Temporary camp sites

b) Social and Resource Mapping

Resource mapping focuses on identifying locally available assets and resources that can be utilized for building the capacities of the community during and after disasters. Apart from infrastructure and funds, it could be individuals with specific skills, local institutions and people's knowledge, as all these have the capacity to create awareness and bring about changes in the community. A resource map is therefore not limited to a map depicting the available resources alone, but also its distribution, access and utilization within the village. It includes keeping a record of:

Safe shelters (pucca houses, community centres)

Drinking water sources

Water bodies

Agricultural land

Forest land

Dispensary and Primary Health Care Units

Road

Power installations

Telephone Office

Post Office and other structures

School and college buildings

Godowns (both government and private)

Dealers of dry food, kerosene etc

Tent house (generators, tarpaulins, utensils required in case of community cooking)

c) ***Risk Mapping***

The purpose of a risk map is to identify and classify areas, taking into account the probable damages that could occur as a result of a disaster. It:

- Allows the identification of the location of risks and threats

- Offers authorities and organizations with ideas, shared with the community and experts, to make decisions and know about the existing dangers and threats

- Promotes participation of local stakeholders to analyze, and make way for understanding their perception of the situations

- Registers historical events that have negatively affected the community

d) ***Vulnerability Mapping***

The group preparing the vulnerability map needs to select those risks that are found in the area to be mapped and decide which risks will be addressed. The risks would include:

- Seismic activity

- Landslide / slope failure

- Windstorm, cyclone, tornado, typhoon

- Floods

- Excessive precipitation, flash floods

- Extreme drought

- Industrial activities

Commercial activities

Road / Boat / Air accidents

Terrorist attack

Fire accidents

Execution of Emergency Management Programme:

Once emergency needs have been met and the initial crisis is over, the people affected and the communities that support them are still vulnerable. Recovery activities include rebuilding infrastructure, health care and rehabilitation. These should blend with development activities, such as building human resources for health and developing policies and practices to avoid similar situations in future.

- a). Includes actions taken to return to a normal or an even safer situation following an emergency.
- b). Recovery includes getting financial assistance to help pay for the repairs.
- c). Recovery activities take place after an emergency.

1. Rapid damage assessment.
2. Search and rescue.
3. Emergency medical care.
4. Emergency restoration of essential services.
5. Fire-fighting.
6. Emergency communications.
7. Crisis decision-making.
8. Evacuation, protection of lives and property.
9. The provision of emergency shelter for victims.
10. Debris removal (also associated with recovery).
11. Other activities that take place during the immediate post-impact Emergency period.
12. Land monitoring
13. Identification of high seismic area

14. Development Regulations and Building Codes

Long term :Damage Assessments

Assessments in terms of the extent and monetary value of damages can be carried out with the help of local government offices (e.g., municipal engineering office, municipal agricultural office, etc.), field surveys and interviews.

- a. **Effects on Basic Services:** electricity, water supply (potable water and irrigation water), sanitation
- b. Infrastructure: buildings, hospital/clinics, homes, road systems
- c. Livelihood: crops, sources of food/products
- d. Landscape: soil stability, extent of coastline and land erosion
- e. Ecological Communities: vegetation, terrestrial and aquatic life, forest cover

2. Components

- a. Rescue of affected people
- b. Distribution of basic supplies such as food, water, clothing, shelter, medical care and minimum household utility goods
- c. Repair and restoration of roads, electricity and communication networks
- d. Salvaging damage to agriculture, distribution of seeds and fertilizer, etc.

Short term: Recovery and Rehabilitation) 'build back better' principle:

Recovery and rehabilitation is carried out weeks and months after the disaster. It involves the restoration of basic services (e.g., communications, commuter transportation, electricity for homes), infrastructure (e.g., roads and bridges, schools), and livelihood. The goal of this phase is not only to restore what existed previously but also to set communities on a better and safer development path and to facilitate resilient recovery.

b) Community-Based Needs Assessments:

In order to come up with a proper and acceptable program for recovery and rehabilitation, it is also important to understand the felt needs of affected communities. Consulting affected populations through interviews prior to any recovery program ensures public acceptance and

support of any planned endeavour. A needs assessment helps prioritize particular areas that need the most immediate action for rehabilitation.

1. Infrastructure and Services
2. Community Livelihood
3. Priorities for Habitat Restoration

C) Long Term: Reconstruction and Development

Measures to rehabilitate human communities and natural ecosystems are critical in post-disaster situations in order to support human lives and sustain the delivery of ecosystem goods and services such as food, fuel and protection from natural events. A key concept here is climate-resilient recovery (CRR) where communities are not only provided with assistance to recover from climatic change events but are also equipped to deal with future disasters better. Reconstruction is a much longer-term activity that will involve permanent rebuilding, improved infrastructure, and recovery with enhanced preparation for the next climate change-related event. It should aim to build a better standard than what existed before ('build back better' principle) and be guided by the ecosystem approach to recovery and rehabilitation.

1. Climate-Resilient Livelihood
2. Climate-Resilient Infrastructure
3. Ecological Restoration

d) Incorporation of Indigenous Ideas and Practices

Traditional and local conceptions (or misconceptions?), technology and practices may either hamper or enhance disaster management efforts. Regardless of their effects, it is important that they should be taken into consideration and respected at all times. And, if beneficial, these might even be useful to be developed further and then integrate in pre- and post-disaster planning (e.g., traditional stonewalling technique to minimize soil erosion and increase slope integrity).

e) Resource mobilisation:

To augment the resources available with the State Govt. assistance from Union Government, public and private sector, multi-lateral and bilateral agencies, UN organizations, the Civil Society and other charitable organizations will be sought with the approval of the State Government. Communities and individuals would be encouraged to raise resources necessary

for immediate relief within the community itself and to access the Community Disaster Management Fund and institutional credit. A coordination mechanism will be put in place at all levels under the aegis of the State Disaster Management Authority, to ensure equitable distribution of resources, avoid duplication of efforts and generate synergy.

f) Rehabilitation of orphans and widows:

For the rehabilitation of orphans and widows a community-based approach will be adopted. Institutional rehabilitation will be considered only as an alternative option. The Women and Child Development Department will be the Nodal Department for the rehabilitation of the children who become orphans, and persons who become widows and physically or mentally challenged due to disasters.

g) Order :

Ordered that the Resolution be published in the State Gazette for general information. By order of the Governor.

Administrative Response during Disaster:

The basic responsibility for undertaking rescue, relief and rehabilitation measures in the event of natural disasters is that of the State Governments concerned. The role of the Central Government is supportive, in terms of physical and financial resources and complementary measures in sectors such as transport, warning and inter-state movement of food grains. Relief Manuals and Codes are available for undertaking emergency operations.

A broad view of the administrative response at national, state and district levels is given below

a) National Organisation

Under the Indian federal system, disaster management is the responsibility of State Governments. However, there is a Crisis Management Group headed by the Cabinet Secretary and consisting of nodal ministries in charge of various types of disasters and supporting ministries. For natural disasters, the Ministry of Agriculture is the nodal Ministry and the other Ministries play a supportive role. In the event of a disaster, a multi-disciplinary Central Government team, at the invitation of the affected State, carries out disaster assessment and makes recommendation for assistance.

b) State Level Organisation

Disaster preparedness and response in the State is usually delegated to the Relief and Rehabilitation Department or the Department of Revenue. The Crisis Management Group at the State level is headed by the Chief Secretary of the Government, with participating of all the related agencies.

c) District Level

A District Level Co-ordination and Review Committee is constituted and is headed by the Collector as Chairman with participation of all other related agencies and departments

d) Contingency Action Plan

A National Contingency Action Plan (CAP) has been notified. It facilitates the launching of relief operations without delay. This is updated every year. The CAP identifies the initiatives required to be taken by various Central Ministries/Departments in the wake of natural calamities, sets down the procedure and determines the focal points in the administrative machinery.

At the State level, the State Relief Commissioner (or Secretary, Department of Revenue) directs and controls the relief operations through Collectors or Deputy Commissioners, who are the king-pin of all relief operations, co-ordination, direction and control at the district level

e) Arrangements for Financing Relief

Schemes for financing expenditure on relief and rehabilitation in the wake of natural calamities are governed by the recommendations of Finance Commissions appointed by Government of India after every five years. Under the existing scheme, in operation for the period 1995-2000, each State has a corpus of funds called Calamity Relief Fund(CRF), administered by a State Level Committee, headed by the Chief Secretary of the State Government. The size of the corpus is determined having regard to the vulnerability of the State to different natural calamities and the magnitude of expenditure normally incurred by the State on relief operations. The corpus is built by annual contributions of the Union

Government and the State Governments concerned in the ratio of 3:1. At present, the aggregate accretion in the States' CRF for a period of five years from 1995-2000 amounts to Rs. 63042.70 million. The States are free to draw upon this corpus for providing relief in the event of any natural calamity. In the event of a major disaster warranting intervention at the national level, a provision exists in the form of National Fund for Calamity Relief with a

corpus of Rs. 7000.00 million (for 1995-2000) for the Union Government to supplement the financial resources needed for relief operations.

Mitigation measures During disasters:

1. Integrated multi-hazard approach (emphasis on cyclone and tsunami risk in coastal areas)
2. Early warning system for cyclones and tsunamis
3. Evacuation plans(emphasis on self reliance for sustenance with coastal community)
4. Capacity building
5. Training of all concerned
6. Public awareness programmes
7. Hazards mapping and vulnerability analysis
8. Risk identification, Zoning, mapping

Measures to be strengthened in Structural Mitigation:

1. Seawalls and coral reefs
2. Tsunamis breakwaters
3. Increasing the river dike height
4. Tsunami and cyclone shelters
5. Evacuation routes identification
6. Permanent structures strictly according to BIS codes
7. Retrofitting of vulnerable structures for tsunamis/cyclone resistance
8. Retrofitting important buildings like (Fire stations, school buildings railways, hospitals)

Measures to be strengthened in Non-Structural Mitigation:

1. Education
2. Public awareness
3. Information management

4. Risk communications
5. Land use zoning in accordance with law
6. Maintaining natural sand dunes
7. Reducing vulnerability
8. Empowerment