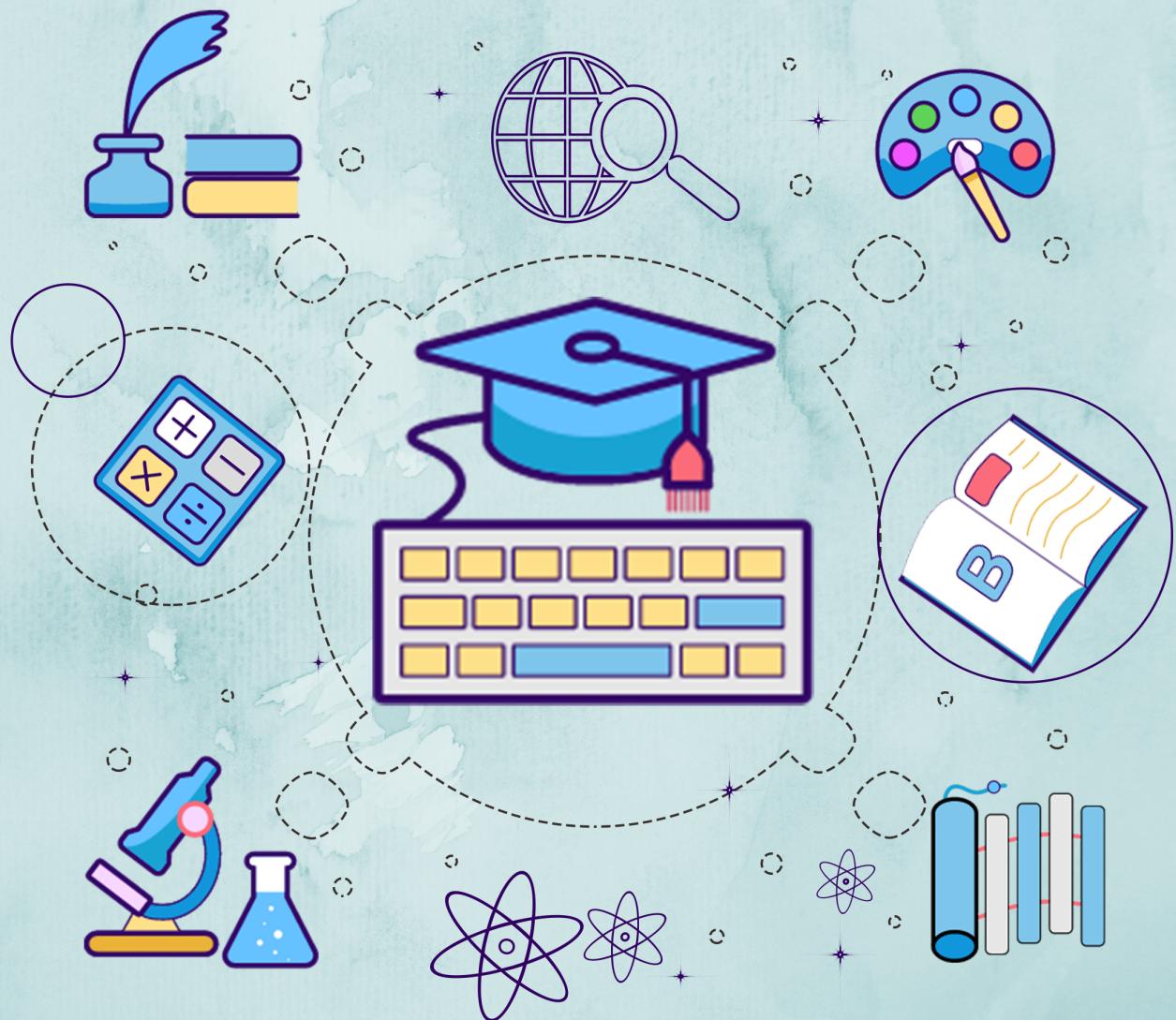


# Kerala Notes



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## KTU STUDY MATERIALS

# DISASTER MANAGEMENT

## MCN301

# Module 3

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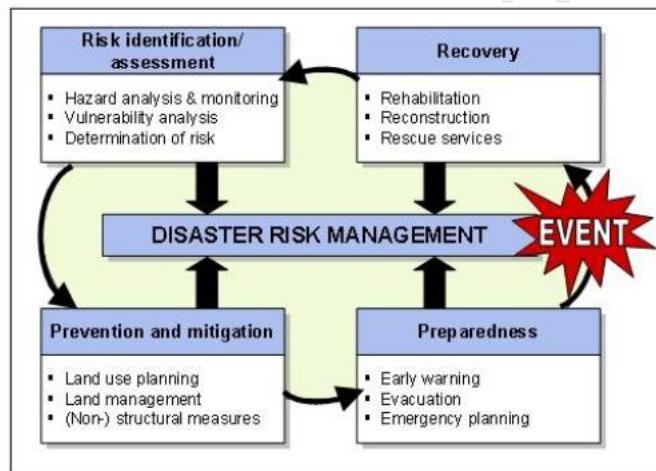
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## MODULE 3

### **DISASTER RISK MANAGEMENT**

- The systematic process of using administrative directives, organisations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster is called Disaster Risk Management.
- Disaster risk management ultimately aims to decrease risk by reducing exposure to hazard, lessen vulnerabilities and increase capacity, and hence build resilience to disaster. When disaster risks are assessed, the next step is to consider a wide range of options available to prevent the disaster from occurring, protect people, their assets, and the environment, in the event that it occurs. The knowledge gained from the assessment allows individuals and communities to anticipate the types of disaster that are likely to affect them, and to think of ways to reduce the impact, or prevent it altogether.
- Disaster management functions are generally consisting of four stages of action.
- The four stages or phases widely accepted are **mitigation, preparedness, response and recovery**.
- Mitigation and preparedness are phases prior to the occurrence of a disaster. Response and recovery are post disaster phases.

#### Disaster Risk Framework



- Risk identification and assessment: This involves determining and analysing the potential, origin, characteristics and behaviour of the hazard – e.g. frequency of occurrence/magnitude of consequences.
- Application of risk reduction measures in mitigation: Planning and implementation of structural interventions (e.g. dams, sea defence) or non-structural measures such as disaster legislation.
- Disaster preparedness and emergency management: Activities and measures taken in advance to ensure effective response to the impact of a hazard, including measures related to timely and effective warnings as well as evacuation and emergency planning.
- Recovery/Reconstruction: Decisions and actions taken in the post-disaster phase with a view to restoring the living conditions of the affected population.
- The four (4) cornerstones of Disaster Risk Reduction Four parallel and complementary lines of actions can be considered to reduce exposure to disasters and achieve a more sustainable approach to development:
  1. Community / stakeholder participation
  2. Public policy actions
  3. Safer construction and urban development
  4. Development of a culture of prevention

## Disaster Management Cycle

- Disaster management is a continuous and integrated process. It involves planning, organising, coordinating and implementing, and evaluating actions which are required for:
  - **Preventing threat** to the community due to any emergency or disaster
  - Mitigation or **risk reduction** from any likely disaster or its consequences
  - **Capacity building**, including research and knowledge management, to reduce vulnerability
  - **Preparedness** of individuals and communities to cope with any disaster
  - **Immediate response** to any threatening situation or disaster
  - **Assessing the severity** and consequent effects of any disaster
  - Undertaking **evacuation, rescue and relief**
  - Ensuring **rehabilitation** of affected community and **reconstruction** for them

## Measures for Disaster Risk Reduction

### **PREVENTION**

- Disaster Prevention is defined as those activities taken to prevent a natural phenomenon or potential hazard from having harmful effects on either people or economic assets. Broadly, disaster prevention refers to measures taken to eliminate the root causes that make people vulnerable to disaster

#### The Basis of Disaster Prevention

- For disaster prevention to be successful, a priori planning is required. Planning of prevention hinges on two (2) issues:
  - hazard identification (identifying the actual threats facing a community) and
  - vulnerability assessment (evaluating the risk and capacity of a community to handle the consequences of the disaster).
- Once these issues are put in order of priority, emergency managers can determine the appropriate prevention strategies.
- Primary prevention is to reduce, avert or avoid the risk of the event occurring, by getting rid of the hazard or vulnerability, e.g. to avoid overcrowding, deforestation, choked drainage and to provide services.
- Secondary prevention means to recognise promptly the event and to reduce its effects, e.g. by staying alert to possible displacements of population; by being ready to provide immunisation, food, clean water, sanitation and health care to the affected population.

#### Hazard Mapping

- A hazard map shows the hazard likely in a region
- To prepare a hazard map data is required about the hazards that have happened in the region in the past. This data can be obtained from two sources –Recorded history –Information gathered from community
- **Recorded history:** For the last many decades, records of hazards that have occurred in different regions of the world are available. These are being compiled in many countries for the purpose of disaster mitigation. Such records gives an indication of types of hazards that may occur in that region.
- **Information gathered from the community:** Where records are not available or insufficient, it is necessary to talk to the people living in the region. They may remember the hazards they faced before or have heard about from their elders.
- **Two objectives of hazard map:** (i)To make the people of the region aware of the hazards likely in the region. (ii). To help disaster managers and other stake holders to plan and be prepared for the disaster as and when it occurs

#### Vulnerability Analysis

- Vulnerability analysis is the process of identifying vulnerable conditions exposed to natural hazards. They provide valuable information

## Physical Vulnerabilities Analysis

- Buildings: The vulnerabilities of buildings are based on the location of the site, the design, materials used for construction, construction techniques used, and its proximity with other buildings
- Infrastructure: In considering infrastructure, three broad groups are to be considered—they include transportation systems like roads, railways, bridges, airports, etc., utilities like water supply, sewage and power supply; and communication network.
- Other critical facilities: Critical facilities are vital to the functioning of the societies during times of disaster and are considered as lifelines. Examples include hospitals and other essential services; emergency services; communications systems; buildings and structures with cultural importance; and certain structures such as dams that are essential to the long-term sustainability of the economy.

## Social Vulnerability Analysis:

- Certain groups of people like single parent families, pregnant or lactating women, mentally and physically handicapped people, children and the elderly require special attention and focus.
- Certain other groups like migrants, people residing at remote areas also require special attention. Risk perceptions for these groups have to be assessed, and the required awareness programs have to be initiated.

## Economic Vulnerability Analysis:

- Direct losses potential: Direct losses could include damage or destruction of physical and social infrastructure and the likely cost incurred to repair or replace it. It could also include costs related to the damages to crops and other means of production.
- Indirect losses potential: Indirect losses include the impact due to loss of production, employment, income generating activities, and the likely inflation in the society. While direct cost is easy to calculate, assessment of indirect costs is difficult.

## MITIGATION

- Mitigation refers to all the **measures taken to reduce the risk** from disasters.
- This can be done through many actions that are aimed at **increasing the capacity** and resilience of the individuals and community.
- A number of steps like **hazard mapping, vulnerability analysis, building codes** for structural mitigation, alternative economic models to prevent economic vulnerability, etc. are required.
- Personal mitigation** is a key to national preparedness. Individuals and families are trained to avoid unnecessary risks.
- The objectives of mitigation are:
  - **Reduce the risk** due to natural and man-made disasters
  - Take steps like **hazard mapping and vulnerability analysis** for risk management
  - Prepare and enforce **structural mitigation** measures like building regulations and their implementation
  - Reduce risk by exercising **control over development**
  - Help vulnerable populations putting in place measures for **crop planning, urban planning and land use** regulations.
- Primary Objectives of Disaster Mitigation: The primary objectives of disaster mitigation are two (2) fold, namely hazard likelihood reduction and risk consequence reduction.
  - **Hazard likelihood reduction:** This objective is only appropriate for a few natural hazards, as it is not possible to reduce the occurrence of many hazards. However, the likelihood of floods occurrence can be reduced by mitigation measures such as sea defence walls.
  - **Risk consequence reduction:** This is a reduction in the impact of a hazard, via a reduction in exposure and/or vulnerability. It involves ensuring that the population, structures, or other systems are able to withstand such an event with as few negative consequences as possible.

- In reducing both *hazard likelihood* and *risk consequence*, the primary aim is to decrease risk of death and injury to the population. The secondary aims are to decrease damage and economic losses inflicted on public sector infrastructure and to reduce private sector losses.

a. Mitigation measures for buildings

- Mitigation measures for buildings are essentially aimed at **preventing damage and fatalities due to earthquakes**. These are generally referred to as **structural and non-structural mitigation measures**.

i. Structural Mitigation:

- This refers to any physical construction to reduce or avoid possible impacts of hazards, which includes engineering measures and construction of hazard resistant and protective structures and infrastructure.
- Structural mitigation essentially means ensuring that **houses, offices and other commercial buildings** can withstand the likely disaster.
- In many countries **building regulations** exist. But it is implemented only in big cities.
- Large number of victims in rural areas during and after earthquakes is due to **faulty building construction**.
- Even in the **Latur earthquake**, buildings made of stones, weakly cemented together was the reason for huge loss.
- Structural vulnerability is also **high among the poorer sections** of society. Their houses generally get damaged and blown away during a cyclonic storm.
- The concept of structural mitigation also includes those structures which have not collapsed but suffered minor damage during an early disaster.
- Structural retrofitting is done in buildings to resist against future disasters.
- While in big cities, buildings are designed and constructed according to building regulations like the **Building Code of India**, the concept of such resistant buildings should also penetrate in rural areas.

ii. Non-Structural Mitigation:

- This refers 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.

Non-structural mitigation can be considered as having two components.

- i. A structure, like a multi-storey building, has load-bearing components such as slabs, beams, columns and foundation elements. Walls, partitions, parapets, sun shades etc., are **non-load bearing components**. Failure of a non-structural component will not result in the collapse of a building.
- ii. Within the building, there are many components like **electrical systems** (such as ducts for wiring, light fitting), AC ducts, fire-protection systems etc., which mainly add load to the structure (are not load bearing). Then there are **amenities** like tables, chairs, beds, cupboards, wall mountings etc., which are added as comfort components for functionality.

Mitigation done for those elements other than structural load bearing elements is considered non-structural mitigation.

- All non-structural components must be **adequately fixed** to avoid their falling off, due to vibration, during an earthquake. External elements like parapet walls, stone or tile facings need to be appropriately braced so that they don't fall off due to vibration. False ceilings and suspended ducting etc., must be adequately secured with nuts or screws.
- If there are **wall-mounted elements** like ACs, they need to be adequately anchored to the wall to prevent their falling off and injuring people.

- **A cupboard, for example, can fall off during an earthquake** and injure people. It is advisable to fix them to the walls. Most of the other interior elements like tables etc., tend to move due to vibration and must be secured. Many chairs are on rollers in plush offices and will run on the floor if not secured.

### iii. Mitigation Infrastructure

The major aspects of infrastructure are **communication and transport**.

- During a disaster, we will generally not know what kind of damage will be caused to the infrastructure and what will be available.
- Generally, one uses the road network and transport vehicles for evacuating people, transporting relief material, **medical (ambulance)** services etc., which are crucial in a disaster situation.
- Many times, after a disaster, such road network may be damaged by landslides or flooding making **relief work difficult**.
- Alternative road networks or means of transportation must be designed as a mitigation strategy for making transportation possible.

### b. Control over Development Activities

The government should have policies and practices in place for:

- **Land use for various purposes:** using the hazard mapping and vulnerability analysis.
- **Agricultural crop patterns:** Crop patterns must be studied and farmers advised to grow the kinds of crops that can withstand the impact of a disaster
- **Alternate income schemes** must be made available for people in case they lose their livelihood, including insurance schemes and similar means.
- **Critical infrastructure** must be ensured to save the heavy economic loss due to disasters.
- **Water resource management schemes** must be implemented to save water and to avoid flooding.
- **Building houses in flood-plains** must be avoided and commercial buildings on **hill slopes** must be avoided.
- Constructing houses is highly risky and must be approved based on thorough **geological studies** only

### i. Construction of Dams:

- Construction of dams and embankments is necessary to **irrigate land, for power generation and also to provide drinking water** to the population.
- Dams and embankments also help to reduce the severity of floods. They are constructed at huge cost for the benefit of many.
- However, there is also a negative aspect of such infrastructure. A dam **displaces thousands of people** from the habitat that they have been living in for many years. They lose their homes as many villages are likely to be drowned due to the water body created by the dam. These people also **lose their livelihood**.
- The massive water body also drowns many square kilometres of forest area, destroying the flora and fauna of the region.

### ii. Land Use

The pressure of population and economic development has altered the land use pattern over the years. It is easy to monitor land use with modern technology like remote sensing.

• Some points of concern are:

- **Construction near river banks** has become very common. It is reported that one reason for the heavy flooding in Tamil Nadu in 2015 is the encroachment near river banks.
- **Deforestation** has been another major area of concern. Cutting of trees for various purposes like buildings on hill slopes has caused major landslides. This is also an ecological disaster because trees protect us from pollution.
- Construction of many buildings for housing and other purposes **prevents natural flow of rainwater**. With insufficient storm water drains, this acts as a trigger for floods in most cities in India. When we construct buildings it is imperative that we take care of means to drain rain water safely from such areas.

c. Mitigation of Man-Made Disasters

- **Hazardous industrial units** must be located away from city limits and dense human habitat. Sufficient infrastructure and facilities must be provided so that the industries do not suffer due to their remote location.
- All industries must have **safety audits** conducted for their premises and processes. This must be made mandatory and government agencies must also check such audit reports.
- Fire is a major hazard in all the cities. **Fire prevention measures** must be implemented in all industries and public places like cinema halls, auditoriums etc. Installation of fire and smoke alarms, water for extinguishing fires and other measures put in place must be checked frequently. Fire drills must be conducted regularly.
- **Design of transportation infrastructure** like roads and railways must take into account strict safety measures for their functioning. Considering the enormous numbers of road accidents and fatalities, it must be ensured that stringent road use control is enforced for the safety of vehicle drivers and pedestrians.
- **Education and awareness** about man-made hazards and the way people can contribute to the safety of human beings and infrastructure must be mandatory. This is the simplest way to prevent man-made disasters.

### PREPARDNESS

- Disaster preparedness encompasses the knowledge and capacities developed by governments, professional response and recovery organisations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions
- Preparedness is the **second phase** of the disaster management cycle.
- This basically indicates the **measures required for facing disasters** that are likely to occur in the region.
- If mitigation measures as outlined earlier are taken, the community is better prepared to cope with disasters.
- The objectives of preparedness are to:
  1. **Ensure public awareness** and preparedness for disasters
  1. Prepare and be ready to implement a **disaster management plan**
  2. Ensure standard **procedures for evacuation** and immediate relief
  3. Prepare **sheltering plans** and ensure physical availability of shelters
  4. Have plans for **warehousing** of relief materials and logistics of operation
  5. Ensure availability of **healthcare services** by identifying teams, and availability of medicines and other essential materials
- Disaster preparedness can be studied under three specific categories:
  - 1) *Target-Oriented Preparedness*: Preparedness plans may be target specific, for instance, we may require different types of planning for the vulnerable groups of women, children, elderly and disabled.
  - 2) *Task-Oriented Preparedness*: Specific groups jointly develop activities based on one of the community's plans to evaluate the community's capability to activate the preparedness plan in a real emergency. Eventually, these tasks enable the development of plan revisions, employee training and material resources to support readiness.
  - 3) *Disaster-Oriented Preparedness*: This addresses the likelihood of occurrence of a specific disaster. Emphasis is placed on structural and non-structural mechanisms
- The effectiveness of the various types of preparedness depends on the availability of information on hazards, emergency risks and the countermeasures to be taken, and on the degree to which government agencies, non-governmental organisations and the general public are able to make use of this information.

- Disaster preparedness provides a platform to design effective, realistic and coordinated planning, reduces duplication of efforts and increase the overall effectiveness of government, household and community members' disaster preparedness efforts.
- Disaster preparedness activities embedded with risk reduction measures can prevent disaster situations and also result in saving lives and livelihoods during any disaster situation, enabling the affected population to get back to normalcy within a short time period.
- Disaster preparedness is a continuous and integrated process resulting from a wide range of risk reduction activities and resources rather than from a distinct sectoral activity by itself. It requires the contributions of many different areas – ranging from training and logistics, to health care, livelihood to institutional development.

a. Disaster Management Plan

- The first step in disaster preparedness is the making of a disaster management plan that honestly represents **what the local government and communities are capable of doing** to cope with a disaster.
- In the USA, such a plan is called an **EOP or Emergency Operational Plan**.
- The objectives of this plan are:
  - 1) Identify **agencies** for the DM operations and their functions
  - 2) Identify **individual(s)** to command the operations
  - 3) Identify individuals from different agencies, and their **functions**
  - 4) Identify the method of **coordination** between different agencies, government and private
  - 5) Identify the mechanism for **resources management**, needs and availability of resources
  - 6) Detail out the **likely emergencies** for the area, both man-made and natural
  - 7) Ensure **flexibility in the plan** to be able to modify it according to experiences gained
- The DMP should generally contain information such as:
  - 1) **Objectives:** How it helps citizens to cope with disasters
  - 2) **Disaster scenarios:** Contains information about actual and likely disasters; how the public will be informed and any unusual situations that may arise
  - 3) **Organisation and control:** The existing disaster management structure, the person or official in command, the roles of other officials and their functions
  - 4) **Coordination and inter-relationships:** Roles of government agencies, private agencies and other social groups and how they will interact to optimise the efforts.
  - 5) **Resources and logistics:** The resources available and to be procured from outside and procurement times, warehousing and distribution
  - 6) **Health and medical care:** From first aid to treating injuries, dealing with dead bodies etc. are to be dealt with. Preventive medical services and healthcare services must be detailed out, identifying the available infrastructure, and warehousing of medical supplies and their distribution.
  - 7) **Public information:** Mentions the methods of early warning to the public and continuous flow of information as the event unfolds.
  - 8) **Communication:** Communication channels between the central control and other government and private agencies must be known to everyone. This must find a place in the plan as this is a crucial element in disaster management.
  - 9) **Updating of plan:** The updating of plan is also required based upon the experiences gained by operating the plan in a disaster situation. Certain assumptions made in the planning may not be correct and these can all be corrected by keeping the plan flexible and easily changeable.

b. Early Warning systems

- Wherever practicable, **people must be made aware** of a possible disaster in advance.
- This will give them **time to prepare** themselves for leaving their homes for safer areas.
- Many **natural phenomena are predictable**. It is possible to issue early warnings to the people likely to be affected by the event.
- Objectives:
  - 1) To **inform** the public about likely risks
  - 2) To **forecast** in advance and communicate to all concerned about impending disasters
  - 3) To **ensure speedy actions** in communication and response
  - 4) **Capacity and resilience** building in the community for the expected risks
- Early warning, however, is not restricted to warning about impending disasters alone. The early warning system should ideally consist of:
  - a. **Hazard and vulnerability analysis** for a region; this will give a comprehensive idea about the risks the population is likely to be subjected to
  - b. **Continuous monitoring** for early detection of impending disasters and issuing the necessary alerts to the public
  - c. **Developing a communication system** and flow of communication such that public and, disaster responders are immediately informed of the developing situation
  - d. Making **efforts for capacity building** for the identified risks in the community

c. Evacuation Plans

- In many instances like a cyclone (which is quite predictable now-a-days), a **major task before the disaster** strikes will be to evacuate people from the areas that the cyclone will affect.
- There will be a storm **surge in sea level** and people living in low-lying areas will have to be taken to higher reaches.
- Accompanying heavy rains can **flood** many areas which need to be identified.
- An **evacuation plan** must be prepared and people must know and should be informed of such plans in advance.
- Many people would be unwilling to leave their homes and **belongings** and shift to temporary shelters.
- The **security of their homes** and belongings is an issue that they should be assured of.

d. Sheltering Plans

- A **basic need** of displaced persons is a place to live in and be safe.
- A disaster management plan would have identified dedicated shelters or buildings like **schools** that can be used to accommodate people displaced from their homes.
- Such temporary shelters must be **sufficient to lodge** the many thousands who may need them.
- The shelters and sheltering plans will vary according to the disaster.
- In **earthquakes**, **tents** in open areas may be more appropriate unless one can find safe buildings.
- In **floods**, **buildings at higher levels** are to be found for sheltering people.
- In the case of earthquakes for example, due to **aftershocks** after the main tremor, people may be afraid of living inside buildings. Even if a building stands, it may still be not safe for living. Temporary shelters in open spaces may have to be built in large numbers in such situations.

e. Inventory of resources

- An inventory must be made of **all the resources available** for disaster management.
- The inventory includes material **resources**, **equipment**, **trained personnel**, etc.
- Such inventories **help to plan actions** and deployment of resources and the roles of different people.
- Providing resources for disaster management is essentially the **responsibility of the government**.

- Many private individuals, corporate bodies and others make **contributions** in terms of money and materials.
- There must a central agency that must **evaluate the requirements** and tell the donors what the affected people need.
- Resources are of many types:
  - 1) **Money, space, equipment** for many purposes
  - 2) Trained and dedicated **human resource**, defence forces
  - 3) **Local agencies** like police force, firemen and community volunteers
  - 4) **Private agencies** in terms of expertise, human resource and material
  - 5) **Medical services** including human resource, equipment, hospitals, medical supplies
  - 6) Central **control room**, human resource
  - 7) Facilities for use of **modern technological tools** like GPS, GIS and remote sensing

f. Warehousing

- To cope with a disaster, we will need large quantities of **material resources** like food items, water, medical supplies, etc.
- It may not be possible to procure them in large quantities at short notice.
- Some quantity of such materials needed in an emergency must always be available.
- In a disaster situation, with so much of media attention and help from across the world, the **availability of such materials is not generally a problem**, since so much of international help comes in.
- The **channelling of such materials** to those in need is an issue. Many concepts of supply chain management are applicable here.
- Relief materials for different uses come from **many sources**. They have to be received, stored and dispatched to different end user-points in remote locations.
- This needs careful planning. **Proper storage** of food items, medicines etc., is important so that they do not get spoilt during storage and transportation. Containers for storage, vehicles for **transportation and packaging** of relief material all should be covered under the plan.
- The **distribution network must be carefully planned** so that relief reaches the needy in time and there is no delay due to bottlenecks in any aspect of distribution.

g. Logistics

- The Oxford Advanced Learners' Dictionary defines logistics as "the practical organisation that is needed to **make a complicated plan successful**, when a lot of people and equipment is involved."
- The term probably came originally from **military science**, relating to procurement, maintenance and transportation of material, people and facilities.
- Logistics is very important in disaster management because the response to a disaster invariably involves **moving many people, relief materials, medical supplies** quickly and efficiently to remote places.
- Without a logistics plan such a complex operation cannot be completed. A logistics plan also **has to be flexible** as the disaster situation may change the assumptions on which the plan is based
- A logistics plan should invariably cover the following aspects:
  - 1) All the **usable routes** to reach the region affected including road network, rail lines, water transport systems and ports.
  - 2) **Alternative routes** in case of road blocks due to landslides/ avalanches, flooding etc.
  - 3) **Deployable vehicles** in terms of aircrafts, helicopters, buses, goods carriers and ships and boats. Existence of GPS in the vehicles is a must for easy location.
  - 4) **Quantum of supplies** in terms of food items, water containers, medical supplies and equipment, camping equipment, clothes and other items as may be required.
  - 5) A **plan for distribution** of relief materials to remote locations.

6) A plan for **transporting personnel and equipment** for relief and rescue work

7) **Route maps** of all transport systems in hard and soft copy formats.

*h. Communication*

- A very **critical element** in disaster preparedness is communication.
  - Many communication systems and **modes** are available today like landline phones, fax, text messaging services, wireless phones, satellite phones, internet-based communication systems and so on.
  - Many of these communication systems **may not be functional** once the disaster strikes.
  - Having **alternate modes** of communication is necessary.
  - Another aspect of communication in disaster management can be called **information management**.
  - The **protocols** of communication must be established clearly. Otherwise, there is likely to be **miscommunication, rumours** and people not acting as per plan.
  - The following points are important with respect to communication in disaster management.
- 1) • Ensure that a **standard operating procedure (SOP)** is available and it contains a section on communication.
  - 2) • Make an **inventory of the modes of communication** and equipment available for communication.
  - 3) • An **information flow chart** must be available for key individuals who are supposed to receive and send communication.
  - 4) • **Communication protocol** must be available and known to all important people.
  - 5) • Ensure that key persons have a **back-up communication** facility in case of failure of one or two modes of communication.
  - 6) Warning about an impending disaster and its consequences must be made known through **mass media** and the information must be repeated a number of times.
  - 7) • Mass media, like the **newspapers and radio and television**, have great reach and must be used for giving correct information. Media briefings should be arranged frequently and who will brief the media also should be decided upon.
  - 8) • Ensure 24x7 availability of **emergency and toll-free numbers** during the emergency period. Such centres should get correct information which needs to be updated frequently so that people can get such information speedily.

*i. Education and Training of Personnel*

- Many activities associated with disaster management **require special skills**. People need to be trained to undertake such activities.
- **Government officials** who are going to be involved with disaster management activities need to be trained for dealing with disaster situations as per need.
- Many of them may not be aware of **concepts like hazard maps, risks, vulnerability, disaster management cycle, etc.** They need to get familiar with such terms and phases of disaster management.
- Another important element of training may be the use **IT tools** and various kinds of software.
- Participants must also be familiar with concepts in **remote-sensing, GPS and GIS** to better appreciate the use of such tools.
- A dedicated force like the **disaster response team** has to be developed by selecting the right people and training them in the special job that they have to perform, the tools and equipment they would use and the various methods of search and rescue.
- Many of them may also be trained in simple **first aid** of medical service. People at the community level who volunteer to be part of the response team should also be trained in some aspects of search and rescue and to help the response force in their functions. Also depending upon their responsibilities and involvement, people must be familiar with
  - i. the disaster management plan for the region and
  - ii. the standard operating procedures.

j. Public Awareness Program

- Public awareness must be created through multiple modes and methods. Some of these could be:
  - 1) •Attractively designed and attention-catching **publicity materials** to be displayed in several localities to create awareness about hazards and risks.
  - 2) •Volunteer groups must be encouraged to **stage street corner shows and plays** to highlight and inform public about disasters and standard procedures to save themselves.
  - 3) •**Discussions in mass media** like radio and television can be effective in creating public awareness.
  - 4) •Conducting **mock drills** frequently for the disaster can also increase awareness.
  - 5) **Informal training programmes** can be conducted to increase awareness about disasters.
  - 6) Discussions on **safety procedures** during disasters, among the local community, should be encouraged.
  - 7) Information about disasters and related procedures must be included in **school curricula**.
- The objectives are:
  - 1) •**Community level disaster management groups** must be trained and prepared to deal with disasters.
  - 2) •**Knowledge is power**; an informed community is better prepared to deal with disasters.
  - 3) **Confidence level** of the community will increase.

**RESPONSE**

- Response is the stage immediately after a disaster
- The objectives of the response phase are to:
  - 1) provide immediate relief to **reduce the suffering** of the affected people
  - 2) Conduct **search** operations and **rescue** those stranded
  - 3) Provide **food, water and accommodation** in temporary shelters to displaced people
  - 4) Provide **medical services** as may be needed to people injured
  - 5) Take measures to **prevent unhygienic conditions** that can cause diseases, and their spread.
- Disaster response is aimed at providing immediate assistance to maintain life, improve health and support the morale of the affected population.
- It is focused at meeting the basic needs of the people until more permanent and sustainable solutions can be found.
- Disaster response depends on the adequacy of preparedness prior to the disaster, considering the scope of responses required.
- Disaster response preparedness are the pre-disaster activities that are undertaken to minimise loss of life, injury and property damage in a disaster, and to ensure that rescue, relief, rehabilitation and other services can be provided following a disaster.
- Preparedness for the first and immediate response is referred to as “emergency preparedness”

Factors that Determine the Nature of Disaster Response

- Disaster response is determined by the nature of disaster event which is mostly characterised by:
  - 1) **The type of disaster:** Disaster manifests in many forms, its onset may provide long warning, short warning, or no warning at all. The relative anticipation of the disaster event thus, would influence the effectiveness of activating preparedness plans, mobilisation, and application or response effort.
  - 2) **The ability to take pre-impact actions** Responses to disaster are operationalized in three main phases namely the “pre-, during and post-disaster” situation. Disaster early warning systems may provide timely warnings for anticipating impending disaster. Pre-impact responses (such as evacuation, shelter, and other protective measures) may be carried out if time and conditions are favourable.

- 3) **The severity and magnitude of disaster** The severity and size of the problem determines the response required. Particular effects could be seen in the ability of responses to cope with the problem; the urgency of response action and the priorities which are applied in terms of the scale of potential effects of no appropriate response as well as the requirements for external assistance.
- 4) **The capability of sustained operations** The capability of sustained operation is an essential ingredient of effective response. This is influenced by factors such as resource capability, management capability, community self-reliance, and availability of international assistance. It is important that these issues are clearly addressed in preparedness planning and response action plans.
- 5) **Identification of likely response requirements** Knowing the likely response required to address specific disaster is important and ought to be identified in the preparedness planning stage of the disaster management cycle.

#### Requirement for Effective Response

Information and resources are two (2) essential requirements for effective response without which plans and efforts at responding will not yield the anticipated results.

#### *Information*

- An early warning system provides vital information for effective response operation despite the unpredictability of some disaster events.
- An effective warning system must be robust to transmit warnings as early as practicable.
- Information gained from these systems could help in the planning and decision-making as well as inform the general public.
- Resources form an essential component of disaster response. The need for disaster management organisations to be resource ready cannot be over emphasised considering the untimely occurrence of disasters, which most often is on short notice.
- The ability to mobilise the needed resources on short notice is most often hampered by many factors. Its effect on systems gives little room for procrastination of actions.
- Disaster management requires a carefully drawn response plan which is often prepared in anticipation of emergency and activated in times of urgency.
- The response plan as a component of the disaster management plan includes ways of managing human and financial resources, response to supplies availability and communication procedures.
- This involves identifying, strengthening, and organising resources and capacities for timely and effective response to a potential disaster.

#### Disaster Response Planning

- In disaster response planning, roles and responsibilities are defined, policies and procedures are developed and generic tools for responses are identified and developed.
- The response plan is developed based on assumptions of risks and hazards, and does not address specific disaster scenarios - as is the case for contingency plans.
- Plans thus, must be monitored, evaluated and adapted to the specific situation in times of disaster.

#### Rationale of Disaster

- Responses are mainly directed at:
  - 1) limiting casualties;
  - 2) alleviating hardship and suffering;
  - 3) restoring essential life support and community systems;
  - 4) mitigating further damage and loss; and
  - 5) providing the foundation for subsequent recovery.

#### Disaster Responses:

- a. Search and Rescue

- Typically, in many disasters, this is the first step in response.
- As an example, in an **earthquake**, **many people get buried under debris** of their homes or other buildings. Some people may be alive under a collapsed building. Some of these people may survive if they are rescued and given medical help.
- Some people may be dead and it is necessary **to remove those dead bodies** as rotting bodies can become a health hazard.
- **Specialised teams** are involved in search and rescue. While the local community can also help, we need trained response forces having the necessary equipment to do the job.
- Depending upon the geographical spread of the affected area, **it may take time to reach** the affected people.
- The transportation network may be damaged. In such situations, **aerial search** and location of affected people will be required.
- **The local community can be trained** for some of these activities.
- **The survivors will be the first responders** in disasters. They can help many other people so that they survive.
- If a **proper disaster management** plan and operating procedures are laid out, the search and rescue work can take place fast.

*b. Medical Care/ First Aid*

- An **immediate requirement** when rescue efforts are going on is medical help.
- Some people may have minor injuries that need **first aid** immediately. Some others may have serious injuries requiring **hospitalisation**.
- Many others may need **heavy medication and surgical procedures** to save their lives. All this requires well-planned and organised medical services.
- On-field care and **ambulance services** must be available.
- Many **remote areas** may not have facilities and equipment available locally. The patients will have to be shifted to nearby towns for healthcare.
- Also, the dead bodies recovered should be taken care of, till they are **identified and disposed** by relatives. It will also be necessary to monitor the health of survivors, particularly the children and the elderly.
- The need for first aid and emergency medical care arise in most disasters and response in this direction is of essence.
- First aid is the provision of initial care for an illness or injury.
- It is usually performed by non-expert, but trained personnel to a sick or injured person until definitive medical treatment can be accessed.
- Emergency medical care is immediate paramedic attention to severe wounds and the rapid transportation of the ill or injured to a health facility

*c. Relief Aid:*

- This relates to any provision of assistance during an emergency that is meant to attend to a person's immediate requirements for survival or recovery.
- It may include food, clothing, housing, medical care, necessary social services and security when a person is faced with circumstances beyond her or his control.
- Relief aid must be targeted at the most vulnerable first: Vulnerable children or orphans, female or child headed households, pregnant or lactating women, sick or elderly populations.

*d. Humanitarian Relief*

The Humanitarian Charter provided 4 (four) principles that must be followed in responding to emergencies based on the right to live in dignity, the right to receive humanitarian assistance, and the right to protection and security. The principles are:

- 1)  avoid exposing people to further harm as a result of your actions;

- 2)  ensure people have access to impartial assistance;
- 3)  protect people from physical and psychological harm due to violence and coercion; and
- 4)  enable access to remedies and recovery from abuse
- e. **Damage Assessment**
- During the response phase, many **government and private agencies** will be at many sites where damage has occurred.
  - •Loss of life and **damage to private and public property** has to be assessed.
  - **Aftershocks** of earthquakes can cause damages.
  - There may be damage to buildings, roads, and water supply and sanitation facilities. Such damage will have to be assessed and work started on priority on some aspects like **water and sanitation** for the health of the public.
  - People can live in temporary shelters for some days, but they would like to go back to their homes as early as possible. **Reconstruction efforts** should start as early as possible.
- f. **Coordination**
- Coordination is key to successful disaster response, and is essential in ensuring timely and appropriate scaling-up of resources.
  - Good coordination is crucial for combining resources effectively and efficiently, in order to reach the disaster-affected more rapidly.
  - It contributes to better cooperation, reduces the level of duplication and helps to ensure a well-organised operation.
  - Coordination activities can take place at different levels and in different forms.
  - During the response phase, with **multiple agencies** offering their help, coordination of efforts is a key factor.
  - •Setting up of a **control room** and identifying the person in command, is a first step in coordination.
  - For coordination of the response efforts, the following points are important:
    - 1) **Unified command:** A person, most suitably a government official, should be identified as the **person commanding the whole operation**. He or she may allocate duties to others in case the geographical spread of the area is large.
    - 2) **Control room:** The control room should be safe from the impact of the disaster. The control room should be manned **24 hours of the day with a good communication set-up** to communicate with people at different locations. Key persons in command must be notified of all developments at frequent intervals as agreed upon.
    - 3) **Communication network:** Communication network during disaster is of critical importance. **Fail-safe communication set-up must be available all 24 hours**. Normally satellite phones and internet facilities are used to have enough speed in the communication system. Failure in communication facilities becomes a serious handicap in response efforts.
    - 4) **Information to media:** Media briefing should be done daily so that correct information goes to the world at large. **Rumours can cause immense miscommunication and confusion**, resulting in hardship and suffering to people.
- g. **Psychological Support:**
- Disasters come with grieving moments as many may lose not only properties, but also dear ones with negative psychological outcomes.
  - Impacts on psychosocial well-being can be both short term and long term.
  - Psychological services play a crucial role in responding to crises that involve large populations, as they cater for the needs of the majority of the affected population.
  - They help in the recovery process and reduce the development of mental health problems.
  - Psychosocial support activities include identifying and referring individuals requiring specialised support through professional mental health services.

#### h. Public Health Support:

Public health services are required during disaster response. The relevance of medical services is most felt in disasters when there are:

- Deaths, injuries, Loss of clean water, Loss of shelter, Loss of sanitation, Loss of routine hygiene, Disruption of solid waste management, Public concern for safety, Increased pests and vectors Damage to health care system, Worsening of chronic illnesses, Toxic/hazardous exposure, Loss of food supply, Standing surface water

The public health services required in responding to disasters include:

- Mass casualty management, Mental health, Environmental health, Reproductive health, Managing and continuation of existing health services, Managing and continuation of medication on chronically affected diseases (HIV, TB, Leprosy etc), Management of the dead and missing Emergency feeding, Communicable disease surveillance and response, Sanitation

### **Standard Operating Procedures (SOPs)**

- In making disaster plans operational, there is the need to develop SOPs which could guide the team in effective operation.
- SOPs are the set of standard procedures that “operationalize” the disaster response and/or contingency/ plans.
- In other words, SOPs specify the way in which individuals or units will carry out their functions under the plan (such as, mobilisation of response team, deployment of assessment team process assessments, etc.)
- The SOPs set out what should be done, how it should be done, who is responsible for implementing what, and specifies available resources. SOPs take cognisance of four stages of preparation and procedures: *during normal times, alert/warning and, during disaster, rehabilitation*

**During Normal Times:** The state institution mandated to respond to disaster ought to:

- Formulate and distribute disaster preparedness plans, and conduct drills in all areas;
- Produce maps of Wards/Village Tracts showing areas most vulnerable to storms, floods and other natural disasters;
- Make a list of vehicles and motor boats that can be used for emergency work;
- Compile a list of departments, non-governmental organisations (NGOs), and members of People’s Strength that will take part in relief operations in the predisaster, disaster and post-disaster periods and designate representatives for contact;
- Obtain beforehand the required relief and aid supplies;
- Form the necessary disaster preparedness committees and organisations;
- Create shelters and safe locations for use during disasters depending on local conditions;
- Conduct educational talks on natural disasters and rehearse periodically for the local community depending on local conditions; and
- Coordinate with departments concerned to form Security services, Auxiliary Fire Brigades, communication agencies and Red Cross Societies; and
- Provide organising and training activities.

**Alert/Warning Stage:** In the situation of impending danger, efficient warning systems would activate the needed alert. The following actions would be necessary in such stage of disaster.

- Emphasise the dissemination of news obtained through early warning systems to the community;
- Assign duties to administrative bodies and NGOs to fly warning flags as part of the disaster preparedness programme in the vulnerable areas of the Ward/Village Tract;
- Alert and mobilise members of the Security services, Auxiliary Fire Brigade, communication agencies, the Red Cross, Youth, members of People’s Strength and NGOs;
- Make the necessary arrangements to evacuate the public to safe locations (shelters) in a timely manner;

- Increase security sentries as required;
- Ensure that all levels of supervisors have all teams ready for assigned duties; and
- Keep the office operational 24 hours a day in the emergency period

**During Disaster Stage:** In the event of a disaster, the issues to consider are:

- Alert the community in areas the natural disaster is likely to strike;
- Safeguard the road and water transport routes, keep relief and medical teams at the ready and arrange transport to affected areas at short notice;
- Evacuate the community from vulnerable areas to safe locations or designated shelters as quickly as possible;
- Operate relief camps and supervisory centres at designated shelters as quickly as possible;
- Ensure that administrative personnel and NGOs in areas vulnerable to storms give disaster warnings door to door as a matter of urgency;
- Keep available relief and aid supplies at the ready to launch relief operations quickly and effectively;
- Evacuate the public remaining in the area to designated safe locations;
- Make arrangements to evacuate movable property including cattle to designated locations; and
- Ensure the well-disciplined implementation of orders received from the coordinating agencies and sub-committees with the help of members of the Security services, Fire Brigade, Red Cross Youth members, and members of People's Strength, social organisations and NGOs.

**Rehabilitation Stage:** The rehabilitation stage is the post disaster phase where affected population restart their lives in a much difficult situation considering the impact of their losses. The SOPs for the rehabilitation stage are:

- Conduct field inspections in affected areas as soon as possible and provide the necessary assistance and support;
- Submit immediate preliminary reports with population figures, death and injury figures of cattle and animals, data on socio-economic losses, and carry out further systematic data collection;
- Make arrangements to provide health care and social protection to disaster victims;
- Clear collapsed buildings and trees as quickly as possible;
- Prioritise the restoration of transportation, electricity and water supply and telephone and telegraph services as soon as possible;
- Make arrangements as quickly as possible to reclaim contaminated wells and ponds for access to clean water and dig new wells for drinking water;
- Make arrangements to bury/cremate the remains of disaster casualties and animal carcasses;
- Manage and systematically utilise disaster funds and supplies, as well as cash and supplies donated by well-wishers, social organisations and NGOs; and
- Support the local population for the resumption and recovery of economic activities to previous conditions.

## RECOVERY

- The immediate goal of the recovery phase is to bring the **affected area back to normalcy** as quickly as possible.
- The objectives of recovery phase are:
  - 1) To **take care of the displaced persons** till they are able to return to their houses
  - 2) To **assess the damage to infrastructure** and estimate the cost of reconstruction
  - 3) To obtain funding and start the **reconstruction of infrastructure and houses** for the displaced persons
  - 4) To undertake **economic rehabilitation** of people who have lost their livelihood
  - 5) To ensure that **essential services** like water, sanitation and power supply are available to people
- The recovery process can be very long and **may take years** to accomplish.

- The responsibility for reconstruction is with the **government or local administration** and they must prioritise and undertake reconstruction work for the good of the public at large.
- During reconstruction, it is recommended to consider the **basic causes for the extensive damage** to life and property and build that in the new design for reconstruction.
- By this time, most of the NGOs and other **volunteers will leave** as the initial response phase gets over.
- **Enormous amounts of funding** will be required to reconstruct the damaged infrastructure, including private houses.

a. Assessment of Damage:

- This may include:
  1. Number of collapsed **houses**, damaged houses and **public buildings**
  2. Damage to **road and rail** network
  3. Damage to **water supply** system and sanitation systems
  4. **Power supply systems** and lines and equipment damaged
  5. Damage to **communication network**
  6. **Environmental damage**, loss of animals, trees, damage to water bodies
- The costs will include:
  1. **Rebuilding** of collapsed houses and public buildings
  2. **Compensation** to people for the damages
  3. **Retro-fitting** of partially damaged buildings
  4. Cost of removing debris, reconstruction of **roads, railway, power and communication network**; re-laying of water and sanitation systems
  5. Cost of supporting people with **food and shelter** till they are able to move into their own houses.
  6. Cost of **economic rehabilitation**
  7. Cost of **restoring the damage to the environment**
- All the costs should be worked out on current prices, with escalation for time lapse due to shortage of funding and delays in implementation of reconstruction plans.

b. Reconstruction:

- The reconstruction of **public utilities and services** take priority as they have an impact on a large number of people.
- **Water supply system, sanitation system and power supply lines** must be set right so that people have these services at the earliest.
- Attention will then have to go to **communication and transportation networks** which are again vital for many services.
- With **international help**, both in terms of money and expertise, these can be set right fast.
- It also must be ensured that people get **healthcare free of charge** during this period.
- Many will **need long term healthcare** depending upon the disaster and injury.
- Reconstruction work **may go on for years**. People will have to be compensated suitably during this period by way of monitory assistance.

c. Economic Rehabilitation:

- A disaster may bring to halt many economic activities like **manufacturing, trade and agriculture** on which many people depend for their livelihood.
- As the restarting of many economic activities may **take a long time**, people need to be provided alternative sources of income.

- Creating a **data base of people with their skill sets** may help to assign jobs suitable to them for their economic rehabilitation.
- They can be **employed in the reconstruction activities** to give them a source of income.
- Many actions can be taken to reduce the suffering of people due to loss of livelihood.
  1. Provide **economic support** to people for minimum standard of living
  2. Give **easy loans and aid** to take up some economic activity
  3. Provide **employment in the reconstruction activities**
  4. Create a **data base of skill sets** of people
  5. Provide **employment in government** sectors
  6. Provide **support and facilities to industry** to restart operations and so on
  7. Adopting **alternative crop pattern** and practices to reduce losses

### **RELIEF**

- Disasters in most cases take away many essential subsistence needs and livelihood, making coping difficult for victims/communities affected. The victims end up needing help.
- It is defined as 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. Relief can be of an immediate, short term, or protracted duration
- Relief, as a disaster management process, provides timely essential needs such as basic household items, shelter, food, water and sanitation, or health items.
- Relief activities provide goods and services to disaster-affected populations in the form of supplies, vouchers or cash transfers, so as to enable those populations to cover their essential needs. Relief measures differ, depending upon the nature of disaster. At certain occasions, money may have no value, but certain articles like food, clothes, etc. may be more important
- Relief, globally, is guided by fundamental principles which disaster organisations and NGOs engaging in disaster relief response ought to apply. The principles require that:
  1. Response to disasters must have humanitarian imperative
  2. Aid is provided based on needs alone and must be done without discrimination of any kind (race, creed or nationality of the recipients)
  3. Aid will not be used to further a particular political or religious standpoint
  4. Aid agencies do not act as instruments of government foreign policy
  5. That culture and custom are respected in response and relief activities
  6. Disaster response is built on local capacities
  7. Ways are developed to involve programme beneficiaries in the management of relief aid
  8. Relief aid would reduce future vulnerabilities to disaster as well as meeting basic needs
  9. Accountable to both those we seek to assist and those from whom we accept resources
  10. Information, publicity and advertising activities shall recognise disaster victims as dignified human beings and not hopeless objects

*Project Management Cycle related to relief:*

- The project cycle management (PCM) is a conceptual tool used for the planning and management of programmes and projects leading to the improvement of programme effectiveness and outcome.
- In disaster response, the PCM provides five (5) main continuous components that guide disaster response.
- They are: assessment, planning and designing, implementation, monitoring, review and evaluation

## Assessment

- The first step after the onset of a disaster is to assess the origin, magnitude and effect of the disaster on the affected population so as to be able to identify humanitarian needs and plan possible interventions.
- The purpose of an assessment, therefore, is to ascertain the need for an intervention based on identified needs.
- This is done to identify the problem, its source and consequences.
- There are four (4) types of assessments that are usually conducted during disasters. These are immediate, rapid, detailed and continual assessments.
  - **Immediate assessments** are conducted within 72 hours after the disaster. It is generally conducted by in country actors and involves the collection of basic disaster information.
  - **Rapid assessments** are conducted immediately after the disaster and take up to a week. These involve gathering of information on the needs and existing capacities of the affected population. Possible areas of intervention and resource requirements are determined.
  - **Detailed assessments** are conducted after rapid assessments to obtain further information on the affected population's needs and capacities for programme planning. They can take up to a month to conduct, more or less depending on the area, the complexity of the issues and resources available.
  - **Continual assessments** are conducted once the detailed assessment has been completed and relief programmes are running. They update information on the situation and involve beneficiaries for recovery programming. In addition, when contextual changes occur, continual assessments allow to initiate rapid or detailed assessments

## Planning:

- The planning and design process is critical to a relief operation as it helps to set out in clear stages what the operation will do.
- It also determines how progress and results will be monitored and defines the duration of relief activities.
- The planning process describes the steps and order to undertake when planning relief interventions.
- The design describes the selection of relief interventions that are best adapted to the needs of the context faced.
- The factors that must be considered when planning relief activities are:
  - The needs identified during the assessment, presented by technical sector (shelter, NFIs, food, water and sanitation, health)
  - The overall PoA for the operation
  - The capacity and mandate of the disaster management organisation
  - Programmes conducted/planned by other stakeholders (government, humanitarian organisations)
  - The security and access to disaster-affected populations

## Implementation

- The implementation phase is when the activities are carried out to achieve the desired results.
- The implementation of relief activities is conducted once the assessment and the planning processes are completed.
- This may include the mobilisation and distribution activities.
- The key issues that would be considered are beneficiary targeting and identification and methods and tools for implementation.

## Monitoring

- Monitoring, also known as process evaluation, is a continuous process of follow-up on all the activities throughout the disaster response and relief activities.
- Monitoring is done through the use of indicators which measure the extent to which an objective has been accomplished.
- These indicators measure changes in the lives of beneficiaries as a result of the relief they received.

- The resulting progress reports lead to decisions on whether or not an intervention needs to be changed or adapted as the situation evolves.

#### Review and Evaluation

- Reviews and evaluations are the assessments carried out at a given point in the intervention.
- These involve analysis of the situation that produces intermediate/final reports that lead to recommendations for and adaptations to the intervention or to lessons learnt for the organisation.

### **INTERNATIONAL RELIEF ORGANIZATIONS**

#### a. United Nations and Subsidiary Agencies

- The United Nations is an **inter-governmental organisation** of world countries.
- It was established in **1945** after World War II to ensure that such a calamity does not recur.
- It was started with 51 countries as members, and today has **193 members**.
- The headquarters of the United Nations is at **Manhattan, New York, USA**. It has other main offices at Geneva, Nairobi and Vienna.
- The United Nations is financed by assessed and voluntary contributions from member countries.

#### **United Nation's Office for the Coordination of Humanitarian Affairs (UN-OCHA)**

- OCHA was formed in **1991** by a UN resolution to strengthen the UN response to disasters.
- This was formed by combining two earlier offices of the **Department of Humanitarian Affairs and the Office of the United Nations Disaster Relief Coordinator**.
- After its formation, it was given power for the coordination of humanitarian response, policy development and humanitarian advocacy.
- OCHA is responsible for **bringing together humanitarian actors** to ensure a coherent response to emergencies.
- OCHA also ensures there is a **framework** within which each actor can contribute to the overall response effort.
- OCHA's mission is to:
  - 1) Mobilise and **coordinate effective and principled humanitarian action** in partnership with national and international actors in order to alleviate human suffering in disasters and emergencies
  - 2) Advocate the **rights of people** in need
  - 3) Promote **preparedness and prevention**
  - 4) Facilitate **sustainable solution**
- The following agencies are a part of the relief efforts:
  1. United Nations Development Programme (UNDP)
  2. United Nations Refugee Agency (UNHCR)
  3. United Nations Children's Fund (UNICEF)
  4. World Food Programme (WFP)

#### **United Nations Development Programme UNDP**

- UNDP is a global network for development. It has its headquarters in **New York**.
- The major focus of UNDP is on
  1. Promoting change and connecting countries to **knowledge, experience and resources** to help people to have a better life

- 2. Provide **expert advice, training and grants** to developing countries with focus on least developed countries
- The development focus of UNDP projects is on poverty reduction, HIV/AIDS, energy and environment, democratic governance, social development, and **crisis prevention and recovery**. UNDP also promotes protection of human rights and empowerment of women in all projects.
- UNDP is funded by voluntary **contributions from member countries**.
- UNDP operates in **177 countries**
- UNDP projects are focused on **reducing risk of armed conflicts and disasters**.
- It promotes and supports **early recovery** after disasters.
- UNDP supports local governments in **needs assessment, capacity building**, coordinated planning and policy formulation and standards setting.
- UNDP projects in the area of disaster management include
  1. **strategies to reduce the risk of natural disasters**
  2. **capacity building**
  3. **hazard mapping and assessment**

### World Bank

- World Bank, under the United Nations, is an **international financial institution**.
- The bank essentially acts as **lender providing loans** to developing countries for undertaking development projects requiring large resources.
- Many projects in developing countries have been supported by the World Bank during the last three decades.
- Projects worth **40 billion dollars in the area of disaster management** have been funded in countries like Argentina, Bangladesh, Colombia, Haiti, India, Mexico, Turkey and Vietnam.
- These projects cover areas like
  1. **Mitigation and prevention** projects including fire prevention measures like early warning systems, and education and training
  2. **Early warning systems** for cyclones
  3. **Flood prevention** measures
  4. **Earthquake-resistant construction**
  5. Establishment of a global facility for disaster risk reduction to help developing countries **enhance local capacity** for disaster prevention and emergency preparedness

### WHO

- World Health Organization WHO is the directing and **coordinating authority for health** within the United Nation's organizational structure.
- It is responsible for
  1. –providing leadership on global health matters,
  2. –shaping the health research agenda,
  3. –setting norms and standards,
  4. –articulating evidence-based policy options,
  5. –providing technical support to countries and monitoring and assessing health trends
- WHO has **many publications related to disasters** and the medical emergencies arising out of such disasters.

### IFRC

- The International Federation of Red Cross and Red Crescent Societies (IFRC) is the **world's largest humanitarian organisation**

- It provides **assistance without discrimination** as to nationality, race, religious beliefs, class or political opinions.
- Founded in **1919**, the IFRC comprises **189-member** Red Cross and Red Crescent National Societies, a secretariat in Geneva and more than 60 delegations to support activities around the world.
- The **Red Crescent** is used in place of the **Red Cross** in many Islamic countries.
- **Vision:** “To inspire, encourage, facilitate and promote at all times all forms of humanitarian activities by National Societies. with a view to preventing and alleviating human suffering, and thereby contributing to the maintenance and promotion of human dignity and peace in the world.”

**Role:**

1. carry out relief operations to assist victims of disasters
2. combine relief with development work to strengthen the capacities of its member National Societies.

**Focus:** The IFRC's work focuses on four core areas:

1. promoting humanitarian values,
2. disaster response,
3. disaster preparedness, and
4. health and community care.

• The seven underlying principles

1. **Humanity**—Humanitarian assistance is provided to one and all to alleviate their suffering.
2. **Impartiality** — The assistance is provided without discrimination as to nationality, race, religion, class or political allegiance
3. **Neutrality** — IFRC and its national societies do not take sides in any conflict nor do they engage in controversies of political, religious, racial or ideological nature.
4. **Independence** —The National Societies, while working within the laws and other regulatory framework in different countries, will exercise autonomy in their functioning and, provide assistance as per requirements.
5. **Voluntary Service** - The service is without any expectations of gain in any manner.
6. **Unity** — There can be only one Red Cross and one Red Crescent society in one country.
7. **Universality** — The movement is a worldwide effort.

- IFRC has an exceptional **decades-long** tradition in assisting people in disasters and crises.
- IFRC is a grassroots network with more than **13 million active volunteers** who work within communities in the areas of disaster response and recovery, disaster preparedness and risk reduction, health and development.
- As **community-based responders**, the volunteers and staff are often first on the scene of a disaster.
- They are capable of going the last mile in reaching out to vulnerable communities to provide assistance and to remain with the affected people throughout the **post-disaster recovery process**.
- In **2010**, their volunteers provided services estimated as worth more than **six billion US dollars** and reached more than **30 million people** in disasters alone.
- In large-scale disasters, such as the **Haiti earthquake in 2010**, more than **120 National Societies** from all continents contributed funds, human resources or goods to the Red Cross/ Red Crescent response.

**TIEMS**

- The International Emergency Management Society (TIEMS) is a non-profit, international NGO registered in **Belgium**.
- It has **chapters** in many countries including **India**.
- The NGO provides a global platform for **education, training, certification** and policy planning in management.
- The society aims to develop and bring **modern disaster management tools and techniques** into practice by exchange of information, innovations and new techniques.

- It provides a **forum for stakeholders** to meet, discuss and network about new technical and operational methodologies. It is proposed to establish local chapters worldwide to take care of cultural differences.
- The society also promotes **training and research in the area of disaster management**.

### IAEM

- The International Association of Emergency Managers (IAEM) is an international organisation dedicated to promoting the goals of **saving lives and protecting property** by
  1. mitigation,
  2. preparation
  3. response, and
  4. recovering from disasters.
- IAEM also sponsors the **Certified Emergency Manager and Associate Emergency Manager** (AEM) Programs to instil and maintain professionalism through the certification process.
- The IAEM has more than **9000 members** worldwide.
- It is a **non-profit organisation** of emergency management professionals. It represents professionals whose aim is to save lives, protect assets and limit damage to environment during disasters.
- The **mission of IAEM** is to "serve its members by providing information, networking and professional opportunities, and to advance the emergency management profession."

### IRP

- The International Recovery Platform (IRP) was formed at the **World Conference on Disaster Reduction** (WCDR) in Kobe, Hyogo, Japan in **January 2005**.
- The Recovery Platform is a part of the International Strategy for Disaster Reduction (ISDR) efforts.
- IRP is a key component for implementing the **Hyogo Framework for Action, 2005-2015**.
- This was ratified by **168 governments** for building capacity and resilience of member countries and communities to disasters.
- The IRP's role is
  1. –to identify gaps and constraints experienced by member countries in recovery and
  2. –to develop tools, resources and capacity for resilient recovery.

#### *Goals of IRP*

- to ensure that **risk reduction** approaches are systematically incorporated into the design of emergency preparedness, response and recovery programmes
- to promote "**Build Back Better**" approaches and support the development of enhanced recovery capacity at a regional, national and sub-national level with a **particular focus on high-risk low-capacity countries**.
- by closely linking its work with the goals of the **HFA**, to promote a shared vision amongst IRP partner organisations.
- to serve as an **international source of knowledge** for the development of recovery and risk reduction resource