UNIT 7: DISASTER MANAGEMENT

UNIT STRUCTURE

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7.1 LEARNING OBJECTIVE

After going through this unit, you will be able to

- define disaster management
- know about the precautionary measures to be taken for disaters
- learn about emergency aid/measures
- know about the measures to be taken during disaster.
- define the role of NGOs and the civil society in disaster management
- know about regional disaster and its management.

7.2 INTRODUCTION

In the previous unit, you must have read about disaster -its types and some natural and man made disasters. This unit will focus on disaster management. Disasters are of sudden occurrence. Ordinarily the occurrence of a disaster doesnot give any indication before it takes place. All kinds of disasters cannot be prevented but with due planning these

can be reduced to some extent and their effects could be lowered. It is often difficult to make a definite prediction about a disaster. But on account of technology and dedicated professional services the occurrence of a disaster can be foreseen and with due preparation it can be minimized. In this unit we will learn about how disaster can be managed. Meaning of disaster, preventive measures for disaster, precautions that are to be taken, the role of voluntary organizations and the civil society participation and as well as regional disaster management will be discussed in this unit.

7.3 DISASTER MANAGEMENT

A disaster ,whether it is a man made or due to natural causes, may have devastating effects. We cannot stop the loss or damage caused by disaster. But it can be reduced to some extent. This is called disaster management. Disaster is a sudden occurrence and it does not give any kind of warning before its occurrence. Earthquakes, floods, soil erosion, big industrial accident, deforestation caused by fire, volcanic eruption, cyclical storm ,cyclical sea waves, hail storm, Tsunami Tides, thunder-storm, drought, terrorist attack, natural or man made accidents are all different forms of disaster. Men's various activities are to some extent responsible for the occurrence of a disaster that causes loss or damage to lives and property But precautions/preventions if taken in advance can reduce the impact of disaster to some extent. For this we should take methodical and pre-planned steps. Skilled planning can also prevent in reducing the impact of disaster. Different kinds of disaster need different measures or precautions to prevent or reduce their impact. The U.N.O in 1987 took a very important proposal in this regard. According to this proposal, the 1990-2000 decade was declared as the International Natural Disaster Prevention decade. This proposal consists of the following :

- Every state should increase its capability of predicting a disaster and organizing its management.
- The loss or damage caused by Natural disaster should be minimized. The present and future scientific measures for prediction of such disasters should be expanded .

- Analysis of natural disaster, its solution and future prediction should be given the priority. .
- There should be a provision of possible guidelines and planning regarding disaster management .



CHECK YOUR PROGRESS

Q 1. From which year was an awareness about disaster started by the U.N.O.?

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7.4 SAFETY MEASURES IMMEDIATELY BEFORE A DISASTER

When we talk about the forewarning of a disaster we are expected to say that *" there is a possibility of occurring earthquake of 7.5 richter scale at such place with such year of time or a disaster to happen – the possibility of occurring an earthquake cannot be ruled out "* . There must be some definite quantitative value . The basic aim / purpose of these fore warnings is to minimize the amount of loss and damage to be caused by such earthquakes . It can be seen that the impact of natural disasters is felt most in the developing and underdeveloped countries. The main reason behind this is that these countries lack both the essential infrastructure and an integrated planning for disaster management . At the same time the population increase is another reason for the greater loss and damage on account of a disaster .

- **Pre Alertness:** For remaining alert in advance before a disaster occurs there should be scientific planning and so that we can face a disaster. Every country should have the capability to organize the warning system before a disaster . Besides , different organizations should be given responsibility to create an awareness about disasters among the people. The following disaster management organizations are mentioned stage wise :

	Stage		Organisation
1)	National	-	Home Ministry, Central aid and re-employment department
2.	State	-	Disaster Management Department
3)	District	-	Office of the District and Magistrate
4)	Sub-division	-	Office of Civil S.D.O.
5)	Block development	-	Block development office
6)	Panchayat	-	Panchayat Samity Office

Apart from these, there are various govt and non governmental organizations which are associated with disaster management. They are Police department , Para-military forces, Civil defence, Home guard, Fire service, National Cadet corps. National services, Nehru Yuvak Kendra , international agencies like FAO , ILO , UNDP , UNFPA , UNICEF , WEP , WHO , Red Cross Society , various national and international NGOs, private and public voluntary organizations . Data collected from satellites (Digital Data) help to analyze it. With the use of these systematic data , we can make use of the information, theory and technology of various geographical and scientific collection, analysis classification, simplification, transformation etc.

- **Fore Warning of Disaster on the Basis of Systematic Data Collection:** It is very difficult to predict a disaster and studies need to be conducted regarding various disasters .Nowadays excepting earthquakes, other kinds of disaster can be predicted. According to an international research journal “Nature” the earthquake can also be predicted. Nowadays, extensive studies have been undertaken and considerable amount of information technology is being used for prediction of disasters. It is possible to make timely use of this information technology to scientifically collect different geographical data, analyse, classify , simplify, transform and present them and as per requirement use them. Information gathered from satellites has played an important role in predicting a national disaster. For example, Indian Weather report institution through the medium of Television (T.V.) has telecast weather report. In India, through the help of satellite (digital

data), information regarding drought, flood, cyclone etc is disseminated among the public. Indian satellites like IRS-IC, IRS-ID, IRS-P3 satellites, are used to examine the status of flood and its management and through its help even the maps of flood affected areas are being prepared.

- **Decision Based on Informative System:** It has now become easier to prepare forewarnings of disaster on the basis of the present informative system. In this respect WMO has taken steps with the help of information , collection and research to find out the main reasons of disasters. The possibility of disaster taking place can also be predicted on the basis of statistical theory and historical information. It is very difficult to give precise advance warning but the probability can be referred to. For example, an advance warning can be such that there is a 70% to 80% possibility of the occurrence of an earthquake at such place (within coming year). This advance warning doesnot indicate that this possible earthquake cannot happen within some days or within the coming 20 years. It is a very complex matter to prepare advance warning on the occurrence of earthquake on the basis of such information. Information system has played a significant role in evaluating disaster and its management . For , these purposive modes of analysis enriched with information contribute to the adoption of effective practical decisions by the administrators and the voluntary and welfare institutions . In recent times , it has been possible to arrive at better decisions by applying the techniques of GIS and remote sensing.

  The technique of presenting , analyzing or unifying the physical, social, economic or political characteristics collectively or separately through the medium of maps with geographical significance is called GIS (Geographical Informative System) . If a model can be prepared using satellite based maps by collecting information on any zone or region their planning for disaster management and the implementation can be more effectively done .

- **Preparation/Guidelines for Disaster Management:** Natural disasters are the sudden unexpected natural processes or events that cause significant damage or loss of life and property and affect the environment.

Although we cannot stop a disaster yet we can atleast prevent or reduce the damage to some extent. For this, we need a methodical planning and management strategy .

We have to identify the areas or the zones which are vulnerable to a disaster or a calamity. Public awareness is necessary for taking precautionary measures before and after a disaster. Earth quake zones and the structures which are vulnerable to earthquakes should be identified. Proper roads and open areas and infrastructures are to be identified for the rescue operations at the time of disasters. The chief aim of preparing the plans should be to effect proper coordination among the various organizations , to train them up , to create awareness among the different sections of the people and to ensure the active cooperation of the govt. administration, non govt and voluntary organizations and the people.

Another important task is to keep the concerned departments ready for disaster management . Some of the media to be used during a disaster are Wireless Telephone, mobile phone, satellite phone, computer network etc.

- **Creating Awareness Among School Going Children:** One of the important steps to create an awareness about disaster management is to sensitize the school children . We can recall that at the dawn on 26th Dec. 2004 , Tsunami devastated the Indian Coastal areas of Kerala, Tamil nadu, Andhra Pradesh, Andaman and Nicobar island taking a toll of one thousand lives . Following this event in the year 2005, Indian govt. introduced in the CBSE curriculum lessons for creating awareness about Tsunami at all India level. As a result, the school children are being taught the do's and don'ts of facing the situation when a disaster takes place and when it passes over . A survey was conducted by Asian Disaster Reduction Centre (ADRC) in 2005 in Sri Lanka, Maldives and Indonesia in which school children, faculties and the general public were included . Its main aim was to give training in disaster management and to show how the loss and damage caused by disaster could be reduced to some extent. The study revealed that

through proper training a disaster could be mitigated to a considerable extent . Another revelation from the research was that more than 90.4% school students liked to read about disaster. Through school children their family members would also become aware about the precautionary measures connected with disaster. In order to popularize the measures for mitigating disasters among the general public , it is essential to include it as a compulsory subject for the school children and the necessary syllabus has to be prepared for the purpose . About 34 million school children in the world are expected to fall victim to a disaster. So it is likely that the school buildings may collapse during an earth quake in earthquake prone areas if these are not constructed as resistant to earthquakes.

- **Safety Measures/Actions:** Planning the safety measures is highly essential for inculcating awareness among the school children. Under the auspices of LOL UNDP Disaster Risk Management Programmes safety instructions/ guidelines have been prepared for schools by the Govt of India . The main aim of this is to give training about the precautionary measures to be taken before a disaster.

  The items that are included under safety guidelines are the following – Inclusion of the subject of disaster management in the curriculum, to increase awareness , provide education and training in different stages to the public and the government employees, mock drill, formation of disaster management committee in school , safety measures to be taken in the construction of buildings, to develop technology to mitigate disaster, conducting workshops with the help of electronic network, newsletter etc. Keeping in view these safety guidelines the security advisory councils involving every class should be formed in schools .



CHECK YOUR PROGRESS

Q 2. Which Indian organization is contributing to disaster management?

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Q 3. In which year was a course on disaster management included in the CBSE curriculum.

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7.5 EMERGENCY SERVICES

After a natural disaster, emergency services should be provided to the living and the injured people or animals who are badly affected by disaster. Whether an earthquake or any other form of disaster occurs or not , the level of preparedness of the disaster management authority/ department depends on how they keep ready the materials for rescue operations , how the damage or loss of lives is controlled and how far they could ensure the supply of drinking water, electricity, first aid, public relation and emergency services.

- **Supply of Water:** In case of disaster, like flood, supply of drinking water is necessary and for that the mouth of the tube well should be closed and bleaching powder is to be put in the well etc . Water should be taken after boiling and if required alternative water supply is to be arranged.
- **Supply of Electricity:** Usually electricity is disrupted during and after a disaster Therefore there should be an alternative provision for it . Alternative sources of power such as solar energy should be utilized for it. Electricity should be restored immediately. The electricity department should be prepared to restore electricity. For this, special training should be given to the employees . During a disaster, there is a possibility of short circuit ;so to avoid that the buildings should have provision for fire extinguishers. If possible, the supply of electricity should be stopped for that period. Torch light should be kept ready by everyone so that it can be used during the disaster. Additional battery set, torch light, hurricane lamp are to be kept ready .
- **Infrastructure:** Generally ,during a disaster , infrastructures and the roads in particular suffer extensive damage . In case of Assam , flood affects the roads and causes communication problems . Storm

destroys the newly built roads . Therefore the Public Works Department should remain prepared to face such an eventuality of loss or damage caused by hazards. The earthquake in in 1950 in Assam brought massive destruction to the railway tracks and caused big craters on the roads . The engineers and the staff of the PWD Department should be given proper training to remain vigilant against disasters and it is one of the important aspects of disaster management .

- **Relief Camps:** After a disaster organizing relief camps and their management become absolutely necessary . In particular during floods, shifting the flood affected people and animals to higher grounds is imperative . Volunteer groups should be formed for managing the relief camps . Separate toilets for males and females, drinking water, medicine, bleaching powder, brooms , tent, dry food, gas lamp, torch etc are necessary. These are the some of the things are to be arranged. The names of the refugees in relief camps should be systematically recorded. Special care needs to be taken for women , children , elderly persons and who are sick .
- **First Aid:** Sudden disaster causes loss of human lives , physical injuries, and also diseases. Sometimes dispensaries are also affected. So to mitigate such disaster, some medicines and trained staff should be made ready.. First aid kit should be kept ready and such kits contain:
  - Cotton cloth and pashmina cloth
  - Adhesive tape
  - Crepe Bandage
  - Sterile dressing
  - Triangular Bandage
  - Thermometer
  - Scissor
  - Glasses/ Gloves
  - Soap
  - Pain reliever
  - Antacid
  - ORS Packet

Alongwith the doctor, there should be an ambulance. If required, provision should be there to shift patients from relief camps to hospitals for better treatment. It is essential to form a group for prevention of contagious diseases and the members should be given proper training for the purpose . Besides , necessary food items are to be kept in store for future use if an epidemic occurs.

- **Communication:** Nowadays government and non government organizations associated with disaster management are playing a significant role in the management of the communication system . Communication system includes the means of transport such as motor cars, railway, aeroplane, post, doordarshan, besides tele communication etc . Some of the important communication media are Telephone, mobile phone, wireless set, Telex, Fax, satellite, phone, internet , etc .In case of a disaster, alternative communication is needed. Storm , earthquake, landslides, flood etc disrupt the communication. So, in such a situation, the alternative communication is used and these activities are included under communication management. Generally it is seen that due to lack of cooperation among various departments entrusted with responsibilities for this purpose , the loss of lives and damage of property as result of disasters increase manifold . If the forewarning of a disaster could be telecast then the damage could be reduced to some extent. In 2004, on December 25th when Tsunami occurred in Tamil Nadu . Andaman and Nicober island , radio broadcast was very successful in giving information.

  Radio and Doordarshan play a significant role in giving warning and providing counseling in case of an impending disaster.

- **Mutual Co-operation:** It is necessary to have mutual cooperation among various organizations, departments and those who actively participate in disaster management. Without mutual cooperation, it is not possible to transform into reality any plan connected with disaster management. The general Public, Govt. officials, employees and the non govt. organizations should have mutual cooperation among themselves to rescue the people from such disasters. In fact all sections

of the people must be involved in a war footing manner on a united effort to fight disasters.

- **Formation of Rescue groups:** Rescue groups should be formed and properly trained up for the rehabilitation of the victims of disaster. The rescuers should keep the required items ready such as helmet, torch, gumboots, life jacket, whistle etc to help the victims .

  Rescue operators should have rope, ladder, small wheel, knife, first aid box, axe, etc. In case of a disaster, the chief role of the rescuers or life savers would be to take the victims to relief camps and hospitals. The members of the rescuer groups should be sober, gentle, intelligent, capable of decision making, well built and determined males or females. They should be more than 18 years of age. Preferably , rescue operators should be selected from army background or from among the local people. They should survey the affected areas and collect data from there. The members of rescue groups should have co-operation and coordination among them.selves.

- **Essential Services in Disaster Management:** Essential services play a very important role in disaster management. The essential services are providing food , woolen clothes, bedding, utensils, gas etc, drinking water, first aid, etc. There should be good coordination among these services during a disaster.

7.6 STEPS TO BE TAKEN DURING DISASTER

There should be proper planning for the post disaster measures so that the loss can be minimized . Some of the steps that are to be taken after a disaster are–

- To rescue people from the calamity as fast as possible
- To identify the living, injured and the dead people and to keep their records .
- To keep the communication network from getting disrupted.
- To guard against the possible theft of essential articles ..
- To arrange temporary relief camps and to provide drinking water, medicine and electricity.

- To ensure the supply of essential things like food, woolen/warm clothes, bedding, utensils etc.
- To ensure adequate transport facilities in the affected areas
- To check the loss of lives and damage.
- To arrange the rehabilitation of the affected people and to take steps to bring back normalcy .
- To prepare a detailed report of loss and damage .

- **Relief Camps:** Establishing and organizing relief camps after a disaster takes place is very important. The affected people need special help for rehabilitation after a disaster . For instance, after a disaster , first aid, drinking water, food, seeds for cultivation etc are some of the important items needed by the disaster affected people . Under these circumstances the government and NGOs should act together in organizing the relief camps and the government should provide the necessary first aid , relief materials , rescue materials , food and medicines to the organizations managing the relief camps .
- **Resources:** During the disaster period the flow of required funds to deal with the loss and destruction will depend on the supply of the funds by the public and private organizations . To ensure the flow of funds in the post disaster periods the following steps need to be taken:
  - Every government should have some special funds to be spent for relief measures for disaster .
  - It should be strictly monitored so that the funds are utilized only for the disaster affected areas and for the specific purpose . The amount of fund needed for pre- disaster and post disaster periods will be determined by proper guidelines
  - Special insurance schemes should be made for disaster prone areas .
  - Special funds are to be allotted for relief measures
  - The various industrial and commercial organizations , educational institutions ,private companies etc are to be encouraged for forming relief funds.

- The financial institutions disbursing loans for constructing houses should ensure that necessary precautions are taken in constructing house .

- **Things that are Needed During a Disaster:** During the post disaster period certain essential things are required and providing these essential things is one of the major tasks . Some of the essential things are – food, water bottles, warm cloths, radio, paper, pen, old newspapers, soap, tooth paste, tooth brush , things that are used by small kids, heavy shoes, candle, knife, etc.

  To provide, the above mentioned things, disaster management committees should appoint some organizations and trained workers who can act and distribute the relief materials as per requirement to the victims.

- **Providing Relief after a Disaster:** To provide relief after a disaster is the primary responsibility of the National Crisis Management Committee under the central Government. Apart from that, various social groups and organizations have been playing an important role. It is essential to have co-ordination among all these groups to mitigate a disaster. Particular attention is to be given to the following in the post disaster period :
  - Improvement in transport and communication .
  - Providing safe drinking water
  - Maintaining proper electricity, telephone and sanitation
  - Managing the required food, shelter and clothes.
  - To keep accurate account of loss and damage
  - To ensure the supply of seeds for cultivation and other facilities.

- **Planning for the Required Action in Post Disaster Period:** The required guidelines have already been prepared at the national level . But it is essential to prepare the guidelines for actions to be undertaken by concerned departments. High level committees at the central , state and district levels are needed to tackle the problems during disasters. Committees are also to be set up at the gaon Panchayat

level. At the district level some special groups are to be formed such as rapid action force, rescuers, first aids, primary health care, management of relief camps, drinking water etc . Besides, there should be groups to look after sanitation, survey for payment of compensation, and relief works.

- **Psychology of the Affected People During Disaster:** The mindset of the disaster victims is gravely affected by natural disasters and their adverse effects . Many people attribute such disasters to fate . Dissater affected people usually suffer from a sense of insecurity as a result of which they are inflicted with fear , mental tension, depression , irritation and loss of sleep . The department of disaster management should take up special measures to change this mindset of the affected people. Flood is an unavoidable natural disaster in Assam . Some special measures need to be taken to make people live with the disaster of floods .
- **Providing Assistance for Rehabilitation:** During the post disaster period special assistance is needed for the rehabilitation of the victims. For example , it is necessary to provide seeds to the cultivators after floods. For this , the agriculture department should arrange for sowing of paddy seeds at higher plains . Reconstruction of the damaged infrastructure is another important task in the post disaster period. Besides, professional suggestions need to be sought from the concerned professionals to deal with the devastation caused by disasters .



CHECK YOUR PROGRESS

Q 4. What would you do if during a disaster electricity fails?

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Q 5. Do you see any change of mind in the case of residents of disaster affected areas?

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7.7 PARTICIPATION OF NGOs AND SOCIETY

In order to survive at the time of disasters it is important for the various communities in the society to remain alert. In this case , the NGOs are expected to take important steps Those who are engaged in disaster mangaemnt are to be properly trained and well prepared. In this respect the participation of voluntary organizations, NGOs and sections of the society may make positive impact. The voluntary organizations and the different communities need to share mutual cooperation for this . For its effective implementation the concerned people are to be particularly responsible for and aware about the immediate rescue operations , rehabilitation and improvement of the environment . For this is needed a year long plan of action as well as the competence to tackle the situation immediately . The voluntary organizations should remain ever ready to create an awareness among the different sections of the society. For example , during the monsoons advance warning about floods about to occur , relief steps to recover the losses etc can be imparted to the people besides ensuring the distribution of relief materials , medicines , seeds and other things . The poor people have to suffer untold miseries during a disaster , caused by destruction of houses and land becoming unfit for cultivation. The voluntary organizations are to extend both long term and short term help in this situation .

7.8 REGIONAL DISASTER MANAGEMENT AND PLANNING

Disaster management in general is a united effort of different departments through effective coordination. National Disaster management involves the planning for preparedness , prediction, warning for disaster, relief and rehabilitation, repair and reconstruction. For this different departments are to be involved at different levels and made ready through proper training for disaster management . The administrators, scientists , planning officers and various sections of the society have to play a vital role

in this . Organisations and various social institutions should be engaged in coordinated work before and after a disaster. For this in different levels, training is to be conducted for readiness for a disaster. In this regard, administration, science, planning commission, NGO and various communities play a very important role. Already Natural Hazard Management Authority (NHMA) has identified probable hazards and have informed public. This organization of govt. of India has adopted various schemes and works in association with NGOs in this regard. It includes maps of hazardous/risk zones, etc. In urban areas, guidelines of hazard proof houses and bridges are to be prepared.



CHECK YOUR PROGRESS

Q 6. What is the role of regional disaster management?

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7.9 LET US SUM UP

- Whether it is man made or due to natural causes , a disaster causes grave impact on the human society. We cannot stop a disaster and its devastating effect but we can reduce the damage or loss caused by it to some extent. This is called disaster management.
- The first and foremost aim of early prediction of disaster is to see that the loss and damage caused by a disaster can be reduced . The impact of disaster is more severe in the developing countries because there are lacunae in disaster management. In these countries , increasing population and high poverty levels are other important factors responsible for greater incidence of hazards .
- Some of the measures that can be adopted to mitigate disasters are given below :

- Early prediction.
- On the basis of information gathered, early prediction and preparedness
- On the basis of data, decision to be taken.
- Disaster management plan.
- Awareness among school children
- Safety measures.

- Emergency services connected with disasters as follows
  - Water supply.
  - Electricity
  - Managing relief camps
  - First aid
  - Communication
  - Mutual co-operation
  - Formation of rescue groups
  - Essential services and maintainence of law and order.
- Measures to be taken at the time of disaster.
  - Building relief camps
  - Security of resources
  - Arrangement of essential items after a disaster
  - Planning for the required action during disaster
  - Relief during a disaster
  - Aid for rehabilitation
  - The psychological condition of the victims after disaster
- To survive in disaster it is important for various communities in society to remain alert. Specially, NGO's should take important steps in this regard .
- The Natural Hazard Management Authority (NHMA) have identified areas of possible hazard.



7.10 FURTHER READING

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7.11 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: 1990-2000

Ans to Q No 2: Home Ministry, Central Aid and Rehabilitation Department.

Ans to Q No 3: 2005

Ans to Q No 4: There should be an alternative provision for it . Solar energy and other such kind of energy should be utilized for it .

Ans to Q No 5: Can be possible

Ans to Q No 6: Map of hazardous zone



7.12 PROBABLE QUESTIONS

VERY SHORT ANSWER QUESTIONS

Q 1. What do you mean by disaster management ?

Q 2. What is an emergency aid ?

SHORT ANSWER QUESTIONS

Q 1. Write a short note on the measures to be taken during a disaster.

Q 2. Write a short note on Regional Disaster Management and Planning Commission.

LONG ANSWER QUESTIONS

Q 1. Discuss some emergency aids during a disaster ?

Q 2. Explain with examples the role of voluntary organizations and the society in general in disaster management ?

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