

## Chapter-20

# Disasters and Management

On the basis of origins, there are two types of disaster as is 1. Natural disasters and 2. human born disasters these two disasters have immense loss of public money. With the help of this description of both disaster from the safety and management point view.

### Natural disasters

Changes is continuous process of nature. Such of changes found same time fruitful to the human but if the changes cause loss then it is called Natural disaster.

Natural disaster took places with in second in nature through which every one has to face may problem due to it.

#### Causes origin of Natural disaster

There are not one but many reasons for any natural disaster. The affluence of the internal and drahuas forces effect directly like earthquake volcanic etc. The in dispensable in sulation of the continuous human instance of human and the nature of land use in the growing population. As the result of desinclur of forest the refuge of last have put the environment in the jeopardy this is causing the problem of global warning which is spreading progress in same places. Human horning human equblton are indisectly inviting the natural disaster.

### Classification of Natural Disasters

From the point of vief of origin, Natural disaster is classified as follow.

- 1. Topography disasters :** Natural disaster are include is there which occure due to sudden changes into prographical such as earthquake, candslide volcano as etc. in india volcanoes ar not a active.
- 2. Seasonal disasters :** There include natural calamities which arise due to seas and charges such as tsunani cyclone, earthquake etc.
- 3. Disaster caused by organins :** Generate by

organism disasters In fuiss there disaster include whichis cased by organism some ain male live Malauia dead animal plaque etc.

### Natural disaster and Management

Management mean the duty of everybody at every level is ensue relief of the crision & that two on time. introduction of the character of society in the counlry after the natuual disaster human sercnce meets the work done by them following factore affect the managment.

1. Economic condition
2. Positive thinking of individual
3. Feeling of cooperation
4. Social intergrity fidelity
5. Geographical situations
6. Mode of transport and communication
7. Population density

Following are the details of the major disasters of all three of the above natural calamities and management related to their counterparts.

### Earthquake

Whenthere is bibration in the earth in any event orcuring is the interior part of the earth that called it earthquake earthquakeici desastating natural disaster. Itbring devastating changes in a few nomenal Earthquaali is calculated by seismograph in rictar seale. This is developed by chales Rictor an his name only the instrument is called Rictor. The spale is measurned as 1 to 12 Rictor if earth qurte is measure 5 an rictor scale then he called earth qualke as normal. As the scale risethe earthquake would take disaster shape.

#### Reasans for the earthquake origin

Earthquake is the result of the tectonic motic of the earth. Plato's effects in economic activities laeeses earthquake. Coutinuous process of equilibruin on earth also resulth in earthquake. continuous head

from the lead it antiaction. This process ouns for very longtime, but this conticuation also ciras the earthquake origin.

### Earthquake area

In the view of the major earthquake in india, it is known that the orthern counteries region is the most innovative mountain of it foothll. The heimalyies are part of new bundle mountain which is stile in some meditaine state. There is still no balance of sistuation in the himalysn region this area has chance of more earthquake. peninsula plateau is conondaed as part of earthquake but after koyna latur earth quake it is also considaed a earthquake area. This happen with Gujrt kach & Bhuj.

### Earthquake - A crisis

Earthquake is such a natural disaster that in a few moments such a form of destructive dhanges makes groups of common society hearts is dead. Thousands of people from the earthquake will become in at inadmissible times. Cracks on the surface of the earth traffic break down buildings rost

like a pile of sand cannel, bridges and damage. This is synonumous with dangers in the future.

### Earthquake Rescue and Management

**1. At government and social level :** After natural calamition like earth quake all governments provide immidiate relie ina arintis like india when the population density high the lost of life is more. It is necessary to spread the trap of earthquake writing measurement mentias in the country so that the knowledge of the is of earth quake know in advance whenever the possibeliy of earthquake ereses then the people should made aware through by media.

**2. At the personal level :** If them is a feeling of an earthquake then persnaly make sem atecisur immeditely to go to the open space, with off the gose and lights free the pets. It is possible become as earthquake aise man realizes the thing.

Every persa should unite himself in this situation inrespection of caste a cread or relegin and help the needy people. People in india have presnted a unique example by helping vricitms logethan.



Landslide



## Landslide

Sloping of clay scilify slopeing down from the slope is called landslide of muca layer scale starts slowly and make sound of sheezing and its sounds rises and gradnaly

### Reason for landslide

There is no single cause for landslide. There are many casises which result in landslide.

**1. Natrual reason :** In this structure of rocks, shield of land Rocks wash, Heavy rainfall, Expansion of regetation are primary caeses. Landslide all high is the newbending mountain area because there are weak rocks due to continous procesing of gratuity.

**2. Human causes :** Natural disaster like mening due to in antrrlled develometns of humans. In the rocks with forest destruction the root of the grassland leaves a strong hold, the end of soil erosion begins. Soil erosion gradually takes form of landslids. Road anstruction tunnel antruction lead to Human caise of landslide.

## Landslide sesmic Zone

In indian landslide takes place in hemalyan region followed by western ghats region. Where river floe is high, there alsolandslide is moil. The construction of roads in North Eastern India and

Jammu regin Landslide is mu sea share where errosias is more landslide is more.

## Landslide : A crisis

Landslide blocked the rout of rivers so some where blocking the rout of the traffic with the blocking of the road like becomes busy. The balance of demand and fulfilment deteriorates landslides occur in populated areas so it is causes loss of both public and money. People are buried in a heap of debries. Even in Uttaranchal heavy lands were lost due to landslides. Due to the landslides the road are blocked and here a temporary lake becomes when this lake breaks then there is loss of money and people. An example is a flood a kedarnath.

## Landslide and Management

**1. At government and social level :** Here than 90% of landslide happen due to rainfalld where as the transport routes have been constencted in the mountain area, there should propes arangment of both the roution and the rain wate draine. In the construction of the drains both the debris up to 45 dajra anyle should be removed dering construction if it is not possible to remove the strong wale it should support the role.



Flood

**2. At the personal level :** an going through by can if rain started in the landslide region then vehicle should be stopped by one side. Build the house in the mountainous are on the strong ground. Affect people by landslip should be help fully hearted.

## **Floods**

Due to the contant rainfall the water of the river brerks their emsankmants & sprealsin to vary large area it is called flood.

The uneven distribution of rain is the main reason cause natural disaster in India. Every year in India there is flood in some areas. In India 4 crore hectare are considered as flood affected areas.

Due to its large size and mansoon climate, both natural disaster affect India. Due to their general attitude and passive mindset Indians have ever since accepted floods as an act of God.

### **Causes of flood**

Due to no flow of water lable to the flowed area. In the raing leason, sitting with water, cateching the depressed route landed due to which the water rent fair outside the edyes & takes the shape of the flood. It is also responsible for the destruction of the fodder of the forest from the ground. on otherway population of upperroute, costruction of traffic routes in explicable and natural causes can be all the cause of flood.

### **Flood Affected areas in India**

India's flood affected area due to distribution of raintael determines the 90% of flood in the north eastern Area. Floods flowing in the northwest of India satlag, vyas, Ravi, Chenab, Jhelum are less where is flood in the ganga, Jammuna, Ghagra flood is more. Flood in Damodar river and kosi are very devastating therefore kosi river is a curse in Bihar, Damodar river is said to bea curse in Bengal.

In the North East, the Brahmaputra flows through a valley. Every year this valley is flooded. In this area the average rainfall is more than 250 cm.

**Flood-Problems and Disasters** – From the year 2000 onwards, the occurrence of floods in India have become more frequent. Around 80 Lakhs hectare get affected from it. In about an area of 35 Lakhs hectare crops are destroyed. Life gets

disrupted in about 3 crore hectare area. From an economic point of view there is a loss of about Rs. 1000 crore every year. Livestock are the most affected by the flood, and around 12 lakh livestock are lost, and upto 12 lakh houses are damaged.

In India More then 60% flood disaster happens in UP & Bihar, followed by West Bengal, Assam and Orissa.

Human life is inconvenienced, roads are heavily damaged and crops are damaged. Water sources get polluted, sources of communication break down. There is a fear of epidemic spreading. Dams, Lakes & canals are liable to be damaged.

## **Flood Management**

**1. At government and social level :** In the water of flood measure are taken for its preventas on this derrection the National flood control scheme was started is 1954. In this plan, it was started is 1954. in this plan it was decided to build water flow drains an the constraction of river embankment work of making dans under multipurpose scheme has also done in flood affected Area.

In this control the dams were build an Mahanandi Daroda, Sutlg, Vyas, Chamsal river.

It should be kept is mind that when its cuntructed it does not abstontct the natural flow of water.

Inrode to avoid the loss of food problem in 1954 flood fore asting againsation was established. Flood control room wsa established at each district headquarters. weather irrigation department observe the Amount of rainfull & Arrow of water flowing deeing it mansoon is the rain season.

2. Air ciraulation and weather partners also cause drought. Key events like E. nono or La nina help contribute to drought is aras.

**2. Personal level :** Individual should keep listening to one news in the raing reason on the Doordarshan channel. If thay an living in the flood pro one are should follow government instraction Turn of the power equipment. Precious term & cloths should be taken from house to the safe palce so that ehey can some other people also untill flurod water has not



seen down flow. Vehicles & pets should be placed at safe place. If in the house, if they start moving away from the danger make try to reach in safe place as early as possible.

## Drought

When a region has lack of flora A drought is a period of below average precipitation in a given region, resulting in prolonged shortages in the water supply. Whether atmospheric, Surface water or ground water. A drought can last for months or years, or may be declared after as few as 15 days.

### Causes of drought

Mechanism of producing precipitation include convective, stratiform and orographic rainfall. Convective process involve strong vertical motion that can cause the overturning of the atmosphere in that location.

1. Land and water temperatures causes drought As overall temperatures increase more water evaporates and severe weather conditions increase. Landscapes and crops need more water to survive and overall the demand for water increases.

Drought affected areas in India. 30% area gets affected by drought and an average of 5 crore people are affected every year. The Irrigation

department in India has divided the drought affected areas in two parts- **Firstly**, more than 25% land area is marked under uncertainty, which includes western Rajasthan and western Gujarat. **Secondly**, 25% land area is marked under uncertainties which includes eastern Gujarat, eastern Rajasthan, Punjab, Haryana, Uttarakhand, western MP, mid, Maharashtra, interior Karnataka, southern AP, mid Karnataka, North western Bihar, western Uttar Pradesh and Orissa.

In India around 77 districts have been declared drought prone, and among these most are in the western part of India.

### Drought Problem and Difficulties-

Famine is the biggest problem caused by drought. The more there is a scarcity of water, the more violent is the effect of a famine. Due to drought, there are three types of famine First- Since there is shortage of rain, the crops are destroyed, and therefore the production of food grain is not sufficient which leads to a food grain famine.



Drought

**Second:-** Consequently due to a lack of rain, neither food grain or cattle-food is produced which once again leads to a food grain drought & cattle- food drought. **Third-** If there is scarcity of rainfall, food grain production, cattle-food and water, it will be an acute drought. The famine of Vikram Sawant 1956 (1900) is also called as the famine of 56, the worst famine to have ever occurred in India.

## Drough Managment

**(a) At government and Social level :** Drough a eleated to low water gield. How the utilies of water can be disstributed depends the efforts of the societyfor this development of conservation rechique are to be established in the rural area & villages small are should be made acording to improve the planet condition Bhogirati like linking of river thas to be stuated. It has Duarl profit as it saves from flood to there are who are pure to glovels

**(b) Personal level :** For this it is necessarywe should understiond the importance of water people should take activitypartin saving of water people should make tanks in there house to save water. Use of that leeds & pectilizer in the field those used lesseal water

provdie good gield. Through cummunication mode message should be spread for the sorry the water.

## Marine Storm

Marine storm is also called cyclone in India. This cyclone variants in the tropical region, so they are called tropical cyclone. In India arise in the ocean area and inter India from the bay of Bangal and the Arabian sea. Tropical cyclone produced in the sea. So there is a lot of humidity in them. When entering the costral area, it does very rain. Their speed on the costral area is even faster. As the enter the inner parts their speed becomes relatively less in the quantity of rainfall. Due to excessive rainfall in their rapid pace, their is loss of public, money in costral areas.

## Marine Storm : causes of origination

Under the intake of heat due to excessive heat over the oceans, the air rise up wards and their are for morefill. These atmospheric storms produce a cyclone or a storm of ocean storm. It will depend on how much the storing will penetrat in the inner parts of the country. It depends on how high the temperature in north western India is therefore how



A picture of Marine Storm



effective the center of low barrage is made cyclonic storms also occur in northern western India in the winter season. But this is the temperate tropical cyclone. It enters west and north west direction in India. These include winter rain (MAUVTH) in northern western India. Which is very useful for Rabi crops.

### **Marine Storm : affected area**

From the ocean storms to the western and eastern seaside they affect the interior areas they are facing sea storm of the Arabian sea are often born from April to June. Their paths are usually parallel to the coast from Gujarat coast, the interior India the cyclones arising in the bay of Bengal are born from October to December. This cyclone Andhra Pradesh Telangana affects west Bengal.

### **Marine Storm : problem and crisis**

At the time of the formation of the ocean storm they are reduced but the speed of air increases in the size their size as the seamless. The speed of these chakrawats is about 15 kph. due to coming from the water area. They have very moisture. In the coastal areas with strong winds. It rains at high speed rain is so heavy that the situation of the floods arises. Tremendous wind blows due to the speed of the wind the poles of communication instruments are damaged in the crumbled houses collapse and the huts fall. Due to the strong wind sea waves enter the coastal region. Their also a cause great destruction- boats go back and life of the sailors falls in danger.

### **Marine Storm : management**

**1. At government and social level** - Advance information must be developed in relation to marine storms in advance depending on the satellite images and the information received from it, their should be information about the quantity of wind speed system on the root of the storm. These information should be broadcasted to radio and other media. The citizen should be informed about the safe area so that they can get their, in this way casualties can be saved. To reduced speed of the storm, intensive plantation campaigns should be started in coastal areas. Fisherman should be advised.

**2. At the personal level** - Any arrangements made at the time of crisis can not be successful without personal honesty and integrity. Individuals should reach the safe places on the basis of the information that is available about the storm, elderly, child and women reached the safe place. The government and the social institutions are being provided with the use of relief material.

### **Man made disaster**

**Fire** - The fire is human born disaster fire takes the lives of millions of people annually as a devastating catastrophe. In some movements life changes into ashes. Natural disaster won't take so many life as fire takes. Careless use of power tool & use of graters etc. in rural areas are responsible for fire. Crackers are also responsible for fire both in rural and urban also.

#### **Measures for safety**

Electricity faults are mainly responsible for fire. Inefficient wiring caused the fire. Also in kitchen if LPG are not properly used can cause fire in the house. More than the supply may also cause short circuits in area it is also the main cause of fire. Other cause of fire included Bonfire in under gas cylinder, cracker, explosive use etc also may cause fire.

### **Road Accident**

Construction of roads is the world for the better services as expansion of road network increased, the number of road accidents also increased. In view of this the traffic rules were defined but despite then efforts rash driving breaking traffic rules, etc caused huge road accident. Due to these accidents 125000 in India lost their life in road accident.

#### **Safety Measure**

To avoid accident follow the traffic rules. Walk in lane. Do not lose your speed to be sharp from prohibited limit. Run the vehicle with caution in the night and rain. The children below the scheduled age don't Allowed driving.

### **Air Crash**

Aeroplane has limited the geographical distance. All Travel facilities move world small but Aeroplane are fast than safety has to adopted

that much. The few seconds negligence may take life of many thousands. People, aeroplane is technical fault. At this time airports security, hijacked, terrorist attack have put human life at stake.

### **Safety measures**

All force area always follow the healthy & feeding instruction. Traveler should fasten the seat belt. As the emergency, emergency door can help. Use of his postcard can help to protect you. Safety details are given at the starting time of the flight so it should be services listened & followed.

### **Rail Accident**

Rail has become a very important mode of transportation for people & good these days as it comes under disaster in better fair and carries huge population at one time in the past decade Rail, also prone to Rail accident. It has been estimated that around 15000 road accident take thousand a life it is due to technical fault & carelessness of the Railway staff. Also wrong shutting terrorist etc. all also lead road accident.

### **Safety measures**

All cross railway crossing safely. Do not cross railways crossing from below. Stand in train gate. Always rules train when it.

### **Mass destruction weapons**

There is debate in the first use of the man devising armaments but in 1937 attack of Japan an air and 1945 nuclear Attack in Japan it has been widely used. If take the pace of traditional war. After fission with weapon it leads to dangerous war. If does not destroy human race but who the whole currently into ashes. It takes time to stand it thing all again.

### **Nuclear accidents**

Nuclear weapons explosives are the most destructive in human made modern weapons small nuclear weapon is more powerful than other large weapon and it destroys the city up to many kilometers was standing on the tracks. Don't make in have All and press emergency of button during that time of emergency.

**Safety Measures:-** At the time of attack one should retain one's patience and must not panic. At such moments people start feeling giddy, nausea

and vomit. In a little while, their memory becomes weak. Radio activity causes blindness. In this situation we should immediately close all doors and windows to shut out radio-active waves. After an atomic explosion we should immediately cover food and drinking water to avoid it being contaminated by radio-active waves.

### **Chemical industrial accidents**

A chemical accident is the unintentional release of one or more hazardous substances which should have human health on the environment. Chemical hazards all system while chemical accidents could occur under certain circumstances. Such events include fires, explosions, Leakages or releases of toxic or hazardous material that can cause pollution injury, disability or death.

While chemical accidents may occur whenever toxic materials are stored transported or used. The more severe accidents are industrial accident, involving must significant chemical accident in recorded history was 1984 Bhopal disaster in India in which more than 3000 people had died after a highly toxic vapour was released at Union Carbide pesticide factory.

### **Safety measures**

In safety measure this type of chemical industry should be situated for poor residential Area. Efforts to prevent accident range from improved safety system to fundamental change in the chemical use & maintenance recorded as primary orientation.

### **Biological Disaster**

Biological disaster defines the devastating effect caused by an enormous spread of Quaternary kind of king against man may the spread a Disease kills an epidemic. Biological disaster can be also be simply sudden growth in the population of certain kind of plant or animals eg. locust plague. It takes millions of life of people due these disaster. According to the scientist 100 from anthrax can take life of 30 lakh people.

### **Safety measures**

As soon as Biological disaster hit then give information to the government authorities. If Biological disaster can be formed through mouth & nose and through food also it can be transferred in



the body. use properly it can be transferred in the body. Use properly means of communication so that no rumors can be spread.

India weapons are of two types. First are atomic bomb and another all hydrogen bomb. There are more destructive than their bombs.

### Safety measures

Do not be afraid to be patient which attacks. Through nuclear attack cloud like Righties are made people begin to feel live commit and slowly memory became wear. Also people lost their eyes. In such situation the window and door should be locked and visitors don't enter and have a plan but fill may their place in the house. Also food and water should be closed as radioactive way affects them first.

In domain made disaster where railways. road accidents are rising and also nuclear, Chemical industrial & Biological accidents are rising.

### Important Point

1. Changes in nature are always there. The natural changes which affect the human society are called natural disaster, Disasters formed by human error are called human - born disasters.
2. Natural disasters are also called natural outbreak in India.
3. From those management decisions, those decisions are from responsibilities which can be helpful in reducing the disturbance of natural disasters. And successfully cope with the disasters.
4. The intensity of the earthquake is measured on the Richter scale.
5. Vibration of earth called earthquake.
6. Tsunami waves are prone to the emergence of an earthquake in the marine area when waves arise, they bring great fury in coastal areas.
7. Landslides come much more in the rainy season. The process of sliding down the slopes of clay and rocks is called landslide.
8. When the water of rain breaks the river embankment and spreads it into a very large area by sharing it is called flood.
9. Heavy (Mushadhar) rain is the main reason for the accumulation of depression and unplanned settlement flood in the river belt.

10. The river of Kosi is called the mourning of the Bihar river, Damodar river of Bengal.

11. Development of forest for flood control should be strengthened and the embankments should be strengthened.

12. Due to drought rain fall or a uncertainty of rainfall is a main cause of drought.

13. When not enough food production and no fodder and not enough drinking water is available in the drought, it is called famine.

14. Traditional water sources should be developed for drought and should be made in the each village and town to increase ground water level.

15. Tropical cyclones in India arise in the sea and enter the country on the behalf of the Bay of Bengal and Arabian sea.

16. These coastal areas are affected more by sea storms when the ocean storms is in high speed, in less time there is more destruction in the coastal areas.

17. Rail, road accidents are the major in the fire road air in the human born disaster. Mass destructive ordinance nuclear accidents are also human born disasters.

### Objective type Questions :

1. India is not concerned with the natural disaster.
  - (a) Earthquake
  - (b) Flood
  - (c) Landslide
  - (d) Volcano
2. The area in which earthquakes occur most in India is that-
  - (a) Plateau of south
  - (b) Himalayas
  - (c) Middle India
  - (d) Coastal India
3. In which of the following mountainous area in India there is high landslide.
  - (a) Aravali
  - (b) Himalayas
  - (c) Satpura
  - (d) Vindhya
4. Which river is said to be the bereaved of Bengal?
  - (a) Kosi
  - (b) Damodar
  - (c) Ganga
  - (d) Swarn Rekha
5. Which area of India is more prone to drought -
  - (a) North side
  - (b) North east region
  - (c) western region
  - (d) Coastal area

### Very Short answer type questions

1. What is Natural disaster ?
2. What is earthquake ?

3. What do you mean by landslide ?
4. What is the flood ?
5. Which river is called bereavement of Bihar ?
6. What is the main reason for drought ?

### **Short answer type questions**

1. What do you mean by Management ?
2. In which area of India there are more earthquakes and why ?
3. Which is the flood affected area in India ?
4. Explain 'TRICAL' .
5. In 1984 in which city of india a major gas leak was caused by chemical gas leakage.
6. Thing that happened in the country was death from anthrax ?

### **Eassy type questions**

1. How to face earthquake a natural disaster ?
2. Categorize the major factors of landslide .
3. Discuss the reasons for flooding in India.
4. What kind of management should be done to counter the famine ?
5. Highlight the problem of flood affected arises and it solution.
6. Describe human born disasters.

### **Numerical mapping**

1. Show earthquake affected areas in map of India.
2. Blocks landslide in map of India.
3. Show flood affected areas on map of India.
4. Mark the areas drought in the map of India.

### **Answer of objective questions**

1. (d) 2. (b) 3. (b)
4. (b) 5. (c)