

# Unit I

→ Disaster:

→ In greek "dis" means bad "aster" means star.

→ This means that when the stars are in bad position, a bad pos event will happen, hence disaster can be considered as the impact of natural or man made hazards that negatively affect society or environment.

(or)

→ Any occurrence that causes damage, ecological disruption, loss of human life, deterioration of health & health services, on a scale sufficient to warrant extra ordinary response from outside that effected community or area (By WHO)

(or)

→ In simple  
It is a sudden event that causes  
a widespread & immeasurable damage, loss  
destruction to life, property, livelihood,  
economy & environment. is a disaster.

→ Disaster Management:

goal is to → To protect or preserve maximum  
no. of lives during a natural disaster like  
Floods, Fires, hurricanes etc.,.

→ It seeks to provide a Framework  
& direction to government agencies for  
prevention & management of disaster.

→ PM Narendra Modi released the  
1<sup>st</sup> DM plan in India on June 1<sup>st</sup> 2016



→ hazard :-

→ A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods & services, social & economic disruption or environmental damage.

ex nuclear, chemical, floods, etc. =

→ hazard originated from word hasard. in old French & az-zahr in arabic meaning chance or luck.

3) Differential b/n hazard & disaster

Hazard	Disaster
→ A dangerous situation that poses a threat to human life	→ An event that completely causes damage to human life & property.
→ Has less critical consequences	→ Has more critical consequences <del>&amp; more</del>

Scanned with CamScanner

→ Take its full shape after a series of events which might have led it to happen

→ often happens in short time causing more severe effects

## Natural Hazards

### Biological

- Epidemic
- Insect Infestation
- Animal Stampede

### Geophysical

- Earthquake
- Volcano
- Mass Movement (dry)

### Climatological

- Extreme temperature
- Heat/Cold Wave
- Drought
- Fire (eg. bush, forest, land)

### Hydrological

- Flood
- Mass Movement (wet)

### Meteorological

- Storm
- Cyclone
- Hurricane
- Tornado

## Human Induced Hazards

### Nuclear

### Technological

### Chemical

## Complex Emergencies

### Natural Hazards



### Human Induced Hazards



→ Vulnerability:

→ The extent/degree to which a community, infrastructure, services or geographic area is likely to be damaged by the impact of particular hazard or disaster

→ effected by physical, social, economical & environmental factors.

## Disasters

### i) Physical Vulnerability:

- Impact on physical environment
- It include who & what may be damaged or destroyed by natural hazard such as earthquakes, floods etc..

### ii) Economic Vulnerability:-

- Impact on/dependent upon the status of individual, communities & nations.
- poor are usually more vulnerable to disasters because they lack the resources to build strong structures.

ex) Poorer families may live in squatter settlements because they cannot afford to live in safer (more expensive) area.



iii) Social vulnerability: (People)

Inability of people, organizations & societies to withstand adverse impacts to hazards ~~due to characteristics inherent~~

iv) Environmental vulnerability: (about natural resources)

Impact on natural resources  
ex Wetlands, increase salinity from sea water etc...

→ RISK:

→ Risk is a measure of expected losses due to hazard event occurring in a given area over a specific time period

→ The level of risk depends upon the nature of hazard

→ how great the chance that someone will be harmed by hazard.



## Disasters

Risk = Probability of hazard \* Degree of vulnerability.

Total risk = (sum of the element of risk) \* (hazard \* vulnerability)

→ Resilience:-

Disaster resilience is the ability of individuals, communities, organizations & states to adapt to & recover from hazards, shocks or stress without compromising long term prospects for development.

→ Natural & man made disaster

Add from mid 1

→ Review of past disasters

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# Disasters

## Natural Disaster

- Tsunami
- earthquake
- Volcanic eruption
- Floods
- Droughts
- Tornadoes
- heat waves
- Cyclones
- Typhoons
- Landslides
- snow avalanches
- Hail storm
- ~~Cold wave & Fog~~

## Manmade Disaster

- Accident
- Nuclear
- Industrial
- Oil spill.

\*Natural disaster: It is defined as any catastrophic event that caused by natural or the natural processes of the earth.

→ Tsunami:

Tsunamis are giant waves caused by earthquakes, volcanic eruptions or landslides under the sea.

→ Earthquake

Large vibrations that move through rock or other earth material (shear forces).

→ Volcanic eruption:

A volcano is a mountain where lava (hot, liquid rock) comes from under the ground. So hot that it can even melt anything.

→ Flood

A water related disaster refers to overflow of water.



→ Drought Opposite of Flood  
It is defined as a period in which a region has deficit in its water supply whether surface or underground water

→ Tornado The hot and cold air mix & swirl around each other form a tube it is tornado.

→ Heat wave caused due to high atmospheric pressure.

→ Cyclone It is the storm system fuelled by the heat released when moist air rises & the water vapour in it condenses.

→ land slides A wide range of ground movements such as rock falls deep failure of slopes.

→ snow avalanche rapid movement of snow down a slope

→ Hail storm Water droplets freeze into an ice balls

### \* Man Made Disaster

Disasters which are caused by human negligence or errors

→ Accident Un expected, unplanned occurrence of an event which may involve injury which we do see them

Frequently

→ Nuclear Due to nuclear reactor which causes huge damage for future

→ Industrial Causing huge pollution

→ Oil spill huge pollution & waste of natural resource



## **Review of past disasters in India**

### **Kashmir Floods:**

- Year: 2014
- Areas affected: Srinagar, Bandipur, Rajouri etc.
- Death toll: 500 plus

### **Uttarakhand Flash Floods**

- Year 2013
- Areas affected: Gobindghat, Kedar Dome, Rudraprayag district, Uttarakhand, Himachal Pradesh, Western Nepal
- Death Toll: 5000 plus

### **The Indian ocean tsunami**

- Year: 2004
- Areas affected: Parts of southern India and Andaman Nicobar Islands, Sri Lanka, Indonesia etc.
- Death toll: 2 lakh plus

### **Gujarat earthquake**

- Year 2001
- Areas affected: Bhuj, Ahmedabad, Gandhinagar, Kutch, Surat, Surendranagar district, Rajkot district, Jamnagar and Jodia
- Death toll – 20,000 plus

### **Odisha super cyclone**

- Year 1999

- Areas affected: The coastal districts of Bhadrak, Kendrapara, Balasore, Jagatsinghpur, Puri, Ganjam etc.
- Death toll: 10,000 plus

#### Latur Earthquake

- Year: 1993
- Areas affected: Districts of Latur and Osmanabad
- Death toll: 20,000 plus

#### The great famine

- Year: 1876-1878
- Areas affected: Madras, Mysore, Hyderabad, and Bombay
- Death toll: 3 crore

#### Coringa cyclone

- Year: 1839
- Areas affected: Coringa district
- Death toll: 3.2 lakh people

#### Calcutta cyclone:

- Year - 1737
- Areas affected: Low-lying areas of Calcutta
- Death toll: 3 lakh plus

#### Bengal Famine

- Year 1770, 1943
- Areas affected: Bengal, Odhisa, Bihar
- Death toll: 1 crore



Water logging refers to the

the saturation of soil with water.

### \*Floods:-

- Floods are water related Disaster
- It refers to the overflow of water.

#### Floods

Natural.

man made.

- Due to heavy rainfall
- Heavy Snow-melting
- Due to tsunami, storms, cyclones etc.,

- Due to deforestation
- Breakage of Dams.

### causes of floods:-

- Heavy rainfall
- Breakage of dams
- Excess water d/d's.

- Human Loss.
- Property Loss.
- Communication Breakdown.
- Electricity supply cut off.
- Increase in air/water pollution.

Steps taken to prevent floods:

- Afforestation.
- Construction of dams in a proper way.
- Introduce better flood warning system.
- Construct building above flood level.
- Introduce water storage areas.
- Put up more flood barriers.

\* Drought: → Opposite of Floods.

It is defined as a period in which a region has deficit in its water supply - whether surface or underground water.



## Causes of Drought:-

- high temperature
- rate of evaporation is more
- Due to deforestation.

## Types of Drought:-

- Agricultural Drought:- This type of drought occurs when the soil moisture is not sufficient to support the production of crop.
- Hydrological Drought:- This type of drought occurs when the water levels in lakes & reservoirs fall below the average level.

## Anthropogenic Factors:-

- Deforestation
- Usage of Fertilizers.
- Usage of non-decomposable materials
- Greenhouse effect.
- Global warming.

## To prevent Drought :-

- Afforestation
- Try root irrigation
- Irrigate slowly (in amount)
- Build water storage plants  
reservoirs & dams.
- Follow watershed management.

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→ Introduction to Flood & drought  
added from EVS.

→ types of droughts  
mainly divided into 3 types

i) hydrological drought-

ii) Agricultural drought-

iii) Meteorological drought-

i) hydrological drought- This type of drought occurs when the water level in lakes & reservoirs falls below the average level.

ii) Agricultural drought- This type of drought occurs when the soil moisture is not sufficient to support the production of crops.

iii) Meteorological drought- This happens when the actual rainfall in an area is significantly less than the climatological mean of that area.



→ Impact of droughts:-

→ Economic impacts:- (money)

→ The economic impact of drought on an community can mount up after just one season of drought. Farmers may lose value due to crop failure, & an inability to feed & water livestock during drought.

→ Agriculture dependent businesses conduct less business.

→ Tourists may be reluctant to visit drought-affected areas, reducing another source of community income.

→ Environmental impact:- (surroundings)

→ Rivers & lakes drop to low levels & turbidity & salinity increases affecting fish habitat.

→ animals have less water to drink

→ migrate to water areas or to places of water concentration.



→ Social impacts

→ It affects both human health, physically & emotionally in both rural & urban areas.

→ Water scarcity can lead to issues for both people & animals.

→ Health impacts

→ can lead to health issues

→ can lead to fires etc...

"Anything else" it's just about droughts so we can write "