

5.7 FLOOD HAZARDS

A flood is an overflow of water that submerges land which is usually dry. Floods are the most common natural disaster (or) Hazard in India. The heavy south west monsoon rain causes the Himalayan river basin distend their bank , often flooding surrounding areas. It results heavy losses for both economic and lives.

TYPES OF FLOOD HAZARDS

The types of flood hazards are given below

- (1) Riverine floods or Fluvial
- (2) Estuarine floods
- (3) Coastal floods
- (4) Various catastrophic causes.

1. Riverine floods. or Fluvial

Fluvial, or riverine flooding, occurs,.when excessive rainfall over an extended period of time causes a river to exceed its capacity. It can also be caused by heavy snow melt and ice jams.

There are two main types of riverine flooding

- ❖ Overbank flooding occurs when water overflows over the edges of a river or stream. This is the most common and can occur in any size channel from small streams to huge rivers.
- ❖ Flash flooding is characterized by an intense, high velocity torrent of water that occurs in an existing river channel. Flash floods are very dangerous and destructive not only because of the force of the water, but also the hurtling debris that is often swept up in the flow.

2. Estuarine floods

Estuarine floods usually result from the combination of a tidal surge at sea, caused by storm-forced winds and river flooding caused by rainstorms in inland.

3. Coastal floods

Coastal floods can be caused by hurricanes and other severe sea storms or by tsunami waves.

4. Various catastrophic causes

Various catastrophic causes can be identified, such as dam-burst or the effects of earth quake or volcanic eruption, can also lead to flood hazard.

EFFECTS CAUSED DUE TO FLOOD HAZARDS

There are 3 major effects that are caused due to flood hazard. They are

1. Primary effects that occur due to contact with water.
2. Secondary effects that occur because of the flooding, such as disruption of services, health impacts such as famine and disease.
3. Tertiary effects such as changes in the position of river channels.

1. Primary Effects

The primary effects of floods are due to direct contact with the flood waters. Here, water velocities tend to be high in floods.

- Water entering human built structures cause water damage. Even with minor flooding of homes, furniture, floors and walls are damaged.
- Anything that comes in contact with the water is likely to be damaged or lost. Flooding of automobiles usually results in damage that cannot easily be repaired.
- Massive amounts of erosion can be accomplished by flood waters. Such erosion can damage bridge structures, and buildings.
- The high velocity of flood allows the water to carry more sediment as suspended load. When the flood waters retreat, velocity is generally much lower and sediment is deposited. After retreat of the floodwaters everything is usually covered with a thick layer of stream deposited mud, including the interior of buildings.
- Flooding of farm land usually results in crop loss. Pets and other animals are often carried away and drown by the flood.
- Humans that get caught in the high velocity flood waters are often drowned by the water.
- Floodwaters can concentrate garbage, debris, and toxic pollutants that can cause the secondary effects of health hazards.

2. Secondary Effects

Secondary effects are those that occur because of the primary effects and tertiary effects which are the long term changes that take place. Some of the secondary effects of a flood are as follows: Drinking water supplies may become polluted. This may result in disease and other health effects, especially in under developed countries.

- Gas and electrical service may be disrupted.
 - Transportation systems may be disrupted, resulting in shortages of food and clean-up supplies.
- In under developed countries food shortages often lead to starvation.

3. Tertiary effects (long term effects)

- As the result of flooding, new channels may develop, leaving the old channels dry.
- Sediment deposited by flooding may destroy farm land.
- Jobs may be lost due to the disruption of services, destruction of business, etc.
- Insurance rates may increase.
- Destruction of wildlife habitat may occur.

Preventive & Protection measures to be taken during and after flood hazards

1. We should keep calm and do not panic.
2. We should always keep an emergency kit, enough supply of food and drink for the family to last the estimated length of the emergency situation.
3. We should listen to the radio but does not use the cell phone without reason.
4. Switch off electricity, gas and central heating. If there is enough time, move valuable or delicate objects and pollutant products to the higher levels of the strongest parts of the building.
5. Take the essential items like emergency baggage, identity and personal papers, medicines etc.
6. Do not cross flooded areas on foot or in a vehicle. If necessary secure yourself by holding on to ropes or cables.
7. Collaborate with public safety bodies and the services helping the homeless.
8. Check and see if there are any injured people in the vicinity and, if possible, help them.
9. Make yourself available to help with rehabilitation work.