

5.6 CYCLONE HAZARDS

Cyclone is violent wind rotating round a central area.

The word *cyclone* is derived from the Greek, word *cyclos* meaning 'the coils of a snake'.

In the northern hemisphere, a cyclone refers to an area of low atmospheric pressure surrounded by winds moving in a counter-clockwise direction, while a corresponding area of high atmospheric pressure with winds blowing in the clockwise direction is called an *anti-cyclone*.

In the southern hemisphere, the wind directions are reversed. The intensity of the cyclones and the strength of winds depend on the amount of pressure drop in the centre of the cyclone and the rate at which this pressure increases outwards.

Severe tropical cyclones cause storm surges. A *storm surge* is an abnormal rise of sea level near the coast due to which sea water inundates low-lying areas of coastal region causing damage to human life and property.

Classifications of cyclones

They are classified as

- (i) extra tropical cyclones (temperature cyclones) and
- (ii) tropical cyclones.

World meteorological organisation uses the term 'Tropical cyclone' to cover weather systems in which wind speed (exceeds 63 kmph).

Tropical cyclones are the progeny of the ocean and atmosphere, powered by the heat from the sea and driven by easterly trades and temperate westerlies, high winds and their own fierce energy.

In India cyclones deals with

- **Strength of associated winds.**
- **Storm surges.**

- **Exceptional rainfall occurrences.**

Extra tropical cyclones occur in temperate zones and high latitude regions. Cyclones that develop in the regions between the tropics of capricorn and cancer are called **tropical cyclones**.

Effects

The following are some of the adverse effects of cyclones

- Cyclones are associated with high pressure gradients and consequent strong winds, which, in turn, generate storm surges. This causes sea water to inundate low-lying area of coastal regions drowning human beings and livestock.
- This erodes beaches and embankments.
- It also destroys vegetation and reduces soil fertility.
- Very strong winds associated with cyclones may damage installations, dwellings, communication systems, trees, etc., resulting in loss of life and property.
- Heavy and prolonged rains due to cyclones may lead to river floods and submergence of low-lying areas causing loss of life and property.
- Floods and coastal inundation due to storm surges pollute drinking water sources causing outbreak of epidemics.

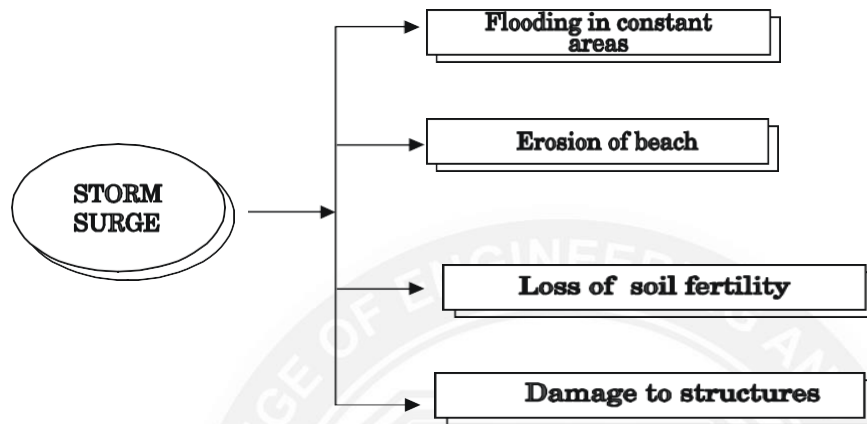


Fig. 5.6.1 Effect of cyclone

Preventive measures of cyclone (cyclone management)

- Cyclone is a natural hazard and it is beyond human control. However, the damages caused by these cyclones can be minimized by using the following measures:
- Some long term defence measures can help to protect us from devastation. Such measures include planting more trees on the coastal belt, construction of dams, storm shelter, wind breaks, proper drainage and wide roads for quick evacuation.

Forecasting and warning

- Forecasting a cyclonic event is the best measure of minimizing the losses due to a cyclone. Advanced systems of cyclone forecasting are now available to almost all the developed nations of the world.
- Warning should be issued immediately to the concerned government agencies and to the general public.

Construction

- Special care should be taken while constructing houses, bridges, roads, and communication networks in cyclone-sensitive areas.
- Cyclone shelters should be constructed in cyclone-prone areas and arrangements must be made to evacuate people in case of an emergency.

Relief tasks

- Relief measures such as economic help and support by individuals, community and government and non-governmental organizations should be ensured to help in resettlement and rehabilitation of affected people.
- Awareness should be spread at all levels of the community to prepare everyone for emergencies.

