CHAPTER-5 CYCLONE

Precipitation (rain fall)

- Cyclonic (due to cyclone) occure in sea ocean
- Convective occure in normal land area.
- orographic occure in hilly area.

Cyclone:-

I) Tropical cyclone are intense low pressure system that develop over the sea or ocean in the tropical and sub-tropical region.

II) Tipical tropical cycle are accompany by force wind that exceed speed of about 63 km/h

III) According to modern conversation a cycle that forms over india ocean is refers to a cyclone but is called hurricane, if it forms over the Atlantic ocean and typhon if it forms over the pacific ocean and in USA this is known as turnado.

How are cyclone names?

I) During world ware 2 wheather forcastmges took to naming storms using female name by 1953 the American wheather service had put together a list of name (from A to W) that where used to name the storms that forms.

iii) By 1970 this list grew to include male and female name.

iii) By the year 2004. eight(8) country located near the india ocean country region agreed upon a naming convention that could help to identify the tropical cyclone, effecting the region.

iv) Baglandesh, India, Maldhip, Miaman, pakistan, Shrilanka, oma, thailand aggrey to contribute a list of name is thus developing a pool of name.

v) Cyclone developing in the region are now a named sequencially from the pool

Catagories of cyclone:-

cyclone are catagories according due to the wind speed and

i) catagory one cycle :- (90-120)km/h (wind speed
ii) catagory 2 cycle :-(121-164) km/h
iii) catagory 3 cycle :- (165-224) km/h
iv) catagory 4 cycle :- (225-279) km/h
v) catagory 5 cycle :- >280 km/h

Causes of cyclone:-

A cyclone is formed when a warm temperature of the sea reaches a threshold level and the wind structure is rising.

In other words tropical cyclone derive their energy from the warm tropical ocean and do not fall or formed unless the sea surface temperature is about 26.5°C. However once formed they can persist at low temperature and dissipate over the land. They lost their source of energy when they move over the land causing them to dissipate.

There are generally four stages that forms a cyclone which is including following.

1. Formative stages
2. Immature stages
3. Mature stage
4. Decay stage

The warning of the cycle is usually made during the formative stage then if necessary an evacuation will takes place during the immature stage.

The most danger is the mature stage where the cyclone reaches the pick limit and its strength cause most damage. Finally the cyclone will move into the decay stage and dessipate.

Hazard zone in India.

i) IMD. (India Meteorological department) published the result of a study conducted on 496 district of the country among this about 42 are costal district. the rest is close to the costal line.

ii) According IMD 12 district of the country are mostly affected by the cycle. This district are classify as very highly prone area and all 12 are in the eastern costal area.

iii) These including yanam district in puduchari, east godabari, Krishna and Nellore district in Andhari Pradesh, baleswer, Bhadrak, Jagatsinghpur and Kendarapada district in odissha, Medinipur. kalkatta and north and south parganas in west begal.

iv) Apart from these their are about 41 district which has classified as high porn, 80 district are moderatly poone and remaining 80 are less prone area.

Worst cycle in Recent Cases):-

i) Two cycle cause Phailin and hudhud cause extreem damage to life and property in India in recent time.

ii) Phailin was one of the most intense and most destructive cycle to make land fall in the country.

iii) This cyclone hit india in october 2013 in odisha

iv) It promted one of the largest evacuation in country in the decade. over 5 lakh 50 thousand people were evacuated and moved to cyclone shelters.

v) only 30 life were lost due to this cycle.

vi) In next year in 2014 cyclone hudhud make landfall near bisakhapatnam or work in Aandhra Pradesh and causes extensive damage to the coastal region.

vii) Total damage due to hudhud were estimate to be about 21908 core some 124 were dead during the cyclone.

Warning system in india.

Imp responsible for forecasting the occurance of cyclones for estimating and catagorised them and for issuing the warning when necessary.

IS issuing.

ii) cyclones in the bay of bengal and in the arabian sea are predicated by the area cyclone warning centre (ACWC) and cyclone warning centre (CWC) of department of IMD.

iii) National as cycle warning syste centre act as a co-ordinater between 2 (two).

iv) In 2014 IMD launch an amassage (SMS) based cyclone warning system that shall enable the masses to stay alert and prepared in the event of an approcing cyclone.

v) Apart from this national disaster response force is responsible for relief operations.

Effect of cyclone:-

i) Main effect of tropical cyclone include heavy rainfall, strong wind and large sea surge (wave) near land-fall.

ii) The destruction from a tropical cyclone depends mainly on its intensity, its size and its location.

iii) heavy rainfall can lead to landslide in hilly area.

iv) After the cyclone has past devastation of an contineous.

v) Fallen trees can block the road and delay the rescue with medical supplies. slow the repairs of electrical lines, telephone towers or water pipe which could put other life at risk for days for month.

vi) Nearly a million people dacied due to tropical cyclone.

Mitigation stategy of cyclone:

Multi structureal mitigation

Multipurpose cyclone shelter with suitable

i) Multipurpose cyclone shelter with suitable design in appropriate location in costal areas.

ii) These multipurpose cylon shelter can be used as shelter when the cyclone strike and at normal time can be used as community centres.

Engineer structure:

i) Engineer structure that can withstand wind forces need to be built.

ii) Majority of the building in the costal area are build with locally available materials and have engineer

iii) In this case good construction practice should be adopted.

iv) Building should be wind and water resistance

- Coastal belt plantation:

i) Coastal belt plantation along the coastal area will mitigate impact of strong wind

ii) It will also check soil erroor there by protecting

Cultivation field and house which are located in the coastal area.

Non structural Mitigation

Hazard Mapping:-

i) A hazard mapping will ~~vulnerab~~ illustrate the area vulnerable in given year.

ii) It is an effective mitigation Tool

Land use control

Land use control designed so that not critical activity are placed in vulnerable area.

i) Location of settlement in flood planes is of at most risk.

iii) Vulnerable area should be kept for patho, grazing or play grounds.

Cyclone forcasting and warning.

Better forecasting of cyclone, early and timely warning to the people who are likely to be effected leads to better preparedness and reduce impact to life, property and infrastructure