

① Case studies of 1993 Latur Earthquake

- The Latur Earthquake struck India at 3:56 a.m. local time on Sept. 1993
- The magnitude of the Earthquake was 6.4 M and depth of epicentre was 12 Km
- The main area affected was that of Maharashtra state in western India
- The major Earthquake primarily affected the District Latur and Osmanabad including Ansa Boek of Latur and onarga of Osmanabad
- A Total of 52 villages were demolished or vanished completely and 3000 people died and 30,000 were injured
- It was a shallow earthquake having focus/epicentre 12 Km deep which led major shock wave to cause more danger
- The Latur earthquake proved more enormously because it occurred at 3:45 A.M when people who come to its ambit are indoor mostly.
- The coordinates of the earthquake is epicentre / focus were N 18.07° and E 76.62° and this location

- (latitude + longitude) was very close to latv, which suffer the major damage
- Killan in latv, where epicentre of earthquake was believed to be located had a large crater, which remains in place to date
 - The liquefaction, which resulted from Earthquake / Tectonic movement destroyed the foundation of stone in soft soil and caused them to crumble.
 - more than 60% of the deaths were result of this liquefaction
 - "liquefaction" is the phenomena that cause soft soil or sand to shake loose as a result of seismic / tectonic activities

Relief work at latv :-

Relief work during this disaster was to rescue people who had been trapped in the debris.

- Several Foreign and local Donors reacted immediately in the tragedy by sending Relief Teams + Rescue workers
- The first Convoy of over 120 Trucks laden with Relief material, Tents, Blankets, Food, Clothing, medicines, & temp. shelter given by international Donors departed from Mumbai on

2 Oct., 1993

- The Indian Army, State Rescue, Police Force, CRPF (Central Reserve Police Force) and other law enforcement agencies had rushed their personnel (Reinforcement almost immediately to Earthquake affected Area).

Case study of Gujarat (Bhuj) Earthquake

- The 2001 Bhuj (Gujarat) Earthquake occurred at 26th Jan, 2001 on 51st Republic Day at 8:46 A.M local time and lasted for two minutes.
- The Epicentre was about 9 km south-west of the village Chabasi in Bhachan Taluka of Kutch District of Gujarat in Bhuj area.
- The Earthquake had magnitude of 7.6 m to 7.7 m on meralli intensity scale.
- The earthquake killed around 20 K people (including 18 people of South Eastern Pakistan) another 1,67,000 people were injured and 400,000 homes were destroyed.
- Bhuj is only situated 20 km (14 miles) from where focus/epicentre was located. The 7.6 m Bhuj earthquake was most deadly in Indian history.
- In this Earthquake, about 6,00,000 people were left / become homeless with 3,48,000 homes destroyed completely and additional 8,44,000 houses were damaged.

- Earthquake reportedly affected, directly or indirectly 15.9 million people, nearly 50% of the population of Gujarat.
- more than 29000 cattle were reported killed
- The Govt. estimates placed Direct Economic losses at 1.3 Billion Dollars although recent estimates indicated losses of about \$5 Billion
- Considerable damage also occurred reported in Anjar, Bhachan + Bhuj Taluka with hundreds of villages flattened / destroyed / devastated including historic buildings & many tourist attractions
- The earthquake destroyed 90% of homes, 8 schools, Two hospitals and 6 km of Road in Bhuj.
- In Ahmedabad, Gujarat's Commercial Capital, with a population of 45 million as many as 50 multi-storied buildings collapsed.
- The Earthquake destroyed the sole usable water supplies in Kutch area

III) Case study of Uttarakshi flood :-

Flood is a Temporary Rise in the water level as in a River, lake or among the sea Coast, resulting in its spilling over the crest, water crosses over the H.B. 2

Natural or Artificial Flood confines into the land that is normally dry,

- Floods are usually caused by excessive runoff from precipitation or snow.
- Coastal storm surges or other Tidal phenomena is also responsible for flood

on 15 June 2013, people hear discussion about the changes in the weather discussion but they thought it was a rumour.

on 16 June, 2013, water with full rage descended towards the Kedarnath Temple, which is considered one of the Holiest Hindu temple of Lord Shiva. The water entered the Temple and wash away everything in its surroundings and people, houses swept away with the moving flood debris.

The fury of flood had left behind the devastation in the Temple.

- Disaster struck/occured in Uttarakhand/Kedarnath valley and extricated 1000 people in June 2013. After Flood, the Initial Evaluation and emergency rescue operations was initiated by the Indian Army and other Relief operations.
- the effected people/communities struggled hard to survive in the new surroundings.