

UPSC Civil Services Examination

UPSC Notes [GS-I]

Topic: Mass Movements [Geography Notes for UPSC]

Mass movements

- Mass movement is also known as mass wasting.
- It is the movement of masses of bodies of mud, bedrock, soil, and rock debris, which commonly happen along steep-sided hills and mountains because of the gravitational pull.
- Gravity exerts its force on all matter, both bedrock and the products of weathering.
- Hence, weathering is not essential for mass movement though it helps mass movements.
- Mass movements which are sliding of huge amounts of soil and rock are seen in mudslides, landslides, and avalanches.
- The air, water or ice does not transport debris with them from place to place but on the other hand the debris may transport with it water, ice or air.
- These are very active over weathered slopes rather than over unweathered materials.
- Mass movements do not come under erosion though there is a shift of materials from one place to another.
- Heave, flow and slide are the three forms of movements.

Causes preceding Mass movements

There are many activating causes preceding mass movements. They are:

- Removal of support from below to materials above through natural or artificial means.
- An upsurge in height of slopes and gradient.
- Overfilling through addition of materials by artificial filling or naturally.
- Overburdening due to heavy rainfall, saturation, and lubrication of slope materials.
- Elimination of material or load from over the original slope surfaces.
- Event of explosions, earthquakes, etc.
- Extreme natural seepage.
- Heavy drawdown of water from reservoirs, lakes, and rivers leading to a slow outflow of water from under the slopes or river banks.
- Indiscriminate removal of natural vegetation.
- Mass movements can be classified into two major classes:

- Rapid movements
- Slow movements.

