

Soil Erosion and its Impact on Agriculture

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Erosion is the process by which the surface of the earth is worn away mainly by the action of wind, water, and glacier. When too much rain leads to flooding and this floodwater washes away the topsoil, sometimes wind leads to erosion by picking up and carrying loose particles away and breaking off more particles, also glaciers erode the soil by slowly carving out valleys and shaping the mountains. Farming, cutting down forests, the building of roads and cities are a few human activities that also lead to erosion.

There are 5 main types of soil erosion: -

- **Raindrops or splash erosion:** -The erosion caused because of falling raindrops on the soil surface with crumbs the soil structure is known as raindrops or splash erosion.
- **Sheet Erosion:** - it is the uniform removal of topsoil from the land surface by the action of the wind called sheet erosion.
- **Rill Erosion:** - It is the most common form of erosion which is observed during heavy rain through many streamlets and head, cuts are called rill erosion.
- **Gully Erosion:** - The headward destabilized erosion which occurs due to the runoff of surface water along drainage lines known as gully erosion.
- **Streambank erosion:** - The washing up of soil away from banks of a stream or a river is called stream bank erosion.

Impact of soil erosion on agriculture

Soil erosion led to many unfavourable conditions, it results in the loss of soil and breakdown of the soil structure. It decreases the soil fertility due to decreases in the amount of organic matter, it also reduces the moisture content of soil resulting in drought conditions, decreases

in soil fertility leads to decreases in the quality and quantity of crops, has to face issues with plant reproduction.

Thus, soil erosion affects the natural vegetation badly which leads to the transfer of fertile land into a desert, due to soil erosion the soil shifts and accumulates on the roads and streets. This blocks the driving and results in accidents it also blocks many irrigation canals and increases water pollution.

Methods to prevent soil erosion:

Soil erosion is one of the major environmental problems, so we have to prevent it which can be done in the following ways: -

- **Crop Rotation:** -Growing crops in rotation reduce erosion, as the larger residue prevent topsoil from being carried away by wind and water.
- **Conservation Tillage:** - Conservation tillage methods such as no-till planting, diking leaves, field surface covered with crop residue that protects the soil from eroding forces.
- **Contour Farming:** - In contour farming the planting of crops in rows around a hill reduces the risk of erosion.
- **Strip Farming:** -Planting fields and long strips alternated in crop rotation is an effective measure to prevent soil erosion.
- **Terrace Farming:** - Planting of hillsides and a step like formation is terrace farming from which we can prevent soil erosion.
- **Grass waterways:** -By planting grass in the field as it stabilizes the soil and provides a drainage outlet.
- **Diversion Structures:** -They cause water to flow along a desired path reducing the risk of erosion.
- **Planting Trees:** - By planting trees we can increase the vegetation as much as possible, the roots of trees hold the soil firmly and don't allow it to wear away easily.