

Land Resources

Land is the most important valuable resource for mankind,

- It provides food, fibre, medicine.
- It is a mixture of inorganic materials and organic materials.
- To construct building
- Acts as a dustbin for most of the wastes created by the modern society.

Land degradation:

It is a process of deterioration of soil or loss of fertility.

Effects of land degradation:

1. Soil texture and soil structure are destructed.
2. Loss of soil fertility.
3. Loss of valuable nutrients.
4. increase in water logging, salinity, alkalinity and acidity problem.
5. Loss of economic social and biodiversity.

Causes of land degradation:

1. Population:

More land is needed for producing food, fibre and fuel wood. So land is degraded due to over exploitation.

2. Urbanisation:

Urbanisation reduces the agricultural land. Urbanisation leads to deforestation, which inturn affects millions of plants and animals.

3. Fertilizers and pesticides: It affects fertility of the soil and causes land pollution.

4. Damage of top soil:

Increase in food production generally leads to damage of top soil through nutrient depletion.

5. Water logging, soil erosion, salination and contamination of the soil with industrial wastes and cause land degradation.

Soil erosion:

The process of removal of superficial layer of the soil from one place to another is called soil erosion.

Harmful effects of soil erosion:

1. Soil fertility decreases due to the loss of top soil layer.
2. Loss of it's ability to hold water and sediments.
3. Sediments run off can pollute water and kill aquatic life.

Types of soil erosion:

1. Normal erosion:

It is caused by gradual removal of top soil by the natural process. The rate of erosion is less.

2. Accelerated erosion:

It is caused by man made activities. The erosion is much faster than the rate formation of soil.

Causes of soil erosion:

1. water

water causes soil erosion in the form of rain, run off, rapid flow and wave action.

2. wind:

It is an important climatic agent, which carry away the fine particles of soil creates soil erosion.

3. Biotic agent:

Over grazing, mining and deforestation are the major biotic agent cause soil erosion. 35% of soil erosion is due to over grazing and 30% is due to deforestation.

4. Land slide:

It causes soil erosion.

5. Construction:

Construction of dams, buildings, roads removes protective vegetal cover and leads to soil erosion.

Control of soil erosion (or) Soil conservation practices:

The art of soil conservation is based on following basic principles

1. To slow down the water for concentrating and moving down the slope in a narrow path.
2. To slow down the water movement when it flows along the slope.

3. To encourage more water to enter into the soil.
4. To increase the size of soil particles.
5. Reduction in the wind velocity near the ground by growing vegetation.

Conservational tillage:

The process of mixing the residues from previous crops into the soil by ploughing is called conservational tillage. It improves soil permeability and increase organic matter, which in turn improve soil moisture and nutrients.

Organic farming:

Process of increasing organic input to the soil. E.g bio fertilizer

Crop rotation:

Process of growing different crops in successive year on the samew land. It prevents the loss of fertility of the soil.

Contour Ploughing:

It is very useful areas with low rain fall, i.e placing some furrows to store water, which reduces runoff and erosion.

Mulching:

Soil is covered with cropl residues and other form of plant litters.

Strip cropping:

Planting of crops in rows to check flow of water.

Terrace farming:

Conversion of steep slopes in to a series of broad terraces which run across the contour. It reduces soil erosion by controlling run off.

Agroforestry:

Planting crops in between rows of trees or shrubs, that can provide fruits and fuel wood. After harvesting the crops the soil will not be eroded because trees and shrubs will remain on the soil and hold the soil particles.

Wind break:

Trees are planted in long rows along the boundary of cultivated lands, which block the wind and reduce soil erosion.

Desertification:

It is a form of land degradation. It is a progressive destruction or degradation of arid or semi-arid lands to desert.

Causes:

1. Deforestation
2. Over grazing
3. Over utilisation of water
4. Mining and quarrying
5. Climate change
6. Excessive use of fertilizers and pesticides

Effects of desertification:

80% of productive land in the arid and semi arid regions are converted into desert. Around 600 million people are affected by desertification.

Source : <http://nprcet.org/e%20content/eee/EVS.pdf>