



LAND RESOURCES

'A nation that destroys its soils destroys itself' - Franklin D. Roosevelt

Land as a Resource

Land area constitutes about 1/5 of the earth surface. To meet out the challenging demand of food, fibre and fuel for human population, fodder for animals and industrial raw material for agro based industries, efficient management of land resources will play critical role. Soil, water, vegetation and climate are basic natural resources for agricultural growth and development.

Land Degradation

Due to increasing population, the demands for arable land for producing food, fibre and fuel wood is also increasing. Hence there is more and more pressure on the limited land resources which are getting degraded due to over-exploitation. Nearly 56% of total geographical area of the country is suffering due to land resource degradation. Out of 17 million hectare canal irrigated area, 3.4 million hectare is suffering from water logging and salinity. Soil erosion, water logging, salinization and contamination of the soil with industrial wastes like fly-ash, press mud or heavy metals all cause degradation of land.

Soil Erosion

Soil erosion refers to loss or removal of superficial layer of soil due to the action of wind, water and human factors. In other words, it can be defined as the movement of soil components, especially surface-litter and top soil from one place to another. It has been estimated that more than 5000 million tonnes topsoil is being eroded annually and 30% of total eroded mass is getting loosed to the sea. It results in the loss of fertility. It basically is of two types, viz. geologic erosion and accelerated erosion. Various factors which affect soil erosions include soil type, vegetation cover, slope of ground, soil mismanagement and intensity and amount of rainfall. Wind is also responsible for the land erosion through saltation, suspension and surface creep.

In order to prevent soil erosion and conserve the soil the following conservation practices are employed,

Conservational till farming, Contour farming and Terracing

Strip cropping and alley cropping

Wind breaks or shelterbelts

Salinization

It refers to accumulation of soluble salts in the soil. Concentration of soluble salts increases due to poor drainage facilities. In dry land areas, salt concentration increases where poor drainage is accompanied by high temperature. High concentration of salts affects the process of water absorption hence affects the productivity.

Water Logging

Excessive utilization of irrigation may disturb the water balance which can lead to water logging due to rise of water table. Anaerobic condition due to poor availability of oxygen in water logged soils may affect respiration process in plants which will ultimately affect the productivity of water logged soil.

Desertification

Desertification is a process whereby the productive potential of arid or semiarid lands falls by ten percent or more. Desertification is characterized by devegetation and depletion of groundwater, salinization and severe soil erosion.

Causes of Desertification

- Deforestation
- Overgrazing
- Mining and quarrying

Shifting Cultivation

Shifting cultivation is a practice of slash and burn agriculture adopted by tribal communities and is a main cause for soil degradation particularly tropical and sub tropical regions. Shifting cultivation which is also popularly known as 'Jhum Cultivation' has led to destruction of forest in hilly areas. It is responsible for soil erosion and other problems related to land degradation in mountainous areas.

Man Induced Landslides

Human race has exploited land resources for his own comfort by constructing roads, railway tracks, canals for irrigation, hydroelectric projects, large dams and reservoirs and mining in hilly areas. Moreover productive lands under crop production are decreasing because of development activities. These factors are affecting the stability of hill slopes and damage the protective vegetation cover. These activities are also responsible to upset the balance of nature and making such areas prone to landslides.