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A Risk of Soil Degradation

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Abstract:- The organic matter of soil is degrading day by day. In recent decades, it has become very intense as the country's population has increased. One-quarter of species on planet earth lives in soils. It is predicated that around 27000 species of life forms are becoming extinct every year due to loss of habitat. The main causes of soil degradation are deforestation, removal of natural vegetation, converting forests to farms, degrading marginal lands and other agriculture related activities.

***Keywords*:-** *Organic Matter, Degrading, Intense, Extinct, Habitat, Deforestation.*

I. INTRODUCTION

Soil is the habitat in which zillions of organisms thrive. Land degradation has not yet been satisfactorily addressed, but raising awareness is essential so that future land management decisions can lead to more resilient and sustainable agricultural systems. One third of the world's land is degraded. In the past 30 years, 80% of insect biomass has disappeared from the earth. It is predicted that in the next 20 years the human population will be 9.3 billion and that 40% less food must be produced. In order to meet the food needs of a growing population, especially in developing countries, most of whom live very near poverty, more attention needs to be paid to the sustainability of agricultural land usage, which must grow by 13% or 120 million by 2030. Related crises affect the quality of human diets, drawing attention to highly processed foods with few vegetables and fruits, can create health problems. Poor soil in nutrients leads to poor nutritional value. Today, more than 2 billion people suffer from nutritional deficiencies. The levels of micronutrients we get from our diets in the early 20th century compared to what we get from similar foods today have dropped by 90%. Almost 40% of food produced in India is wasted every year, mainly in the production, transport and storage stages of the supply chain. Furthermore, land degradation in intensive agriculture is widely recognized in India in terms of lower productivity and crop yields than in other countries, greater use of external inputs and lower profits, land use intensity and cropping patterns change.

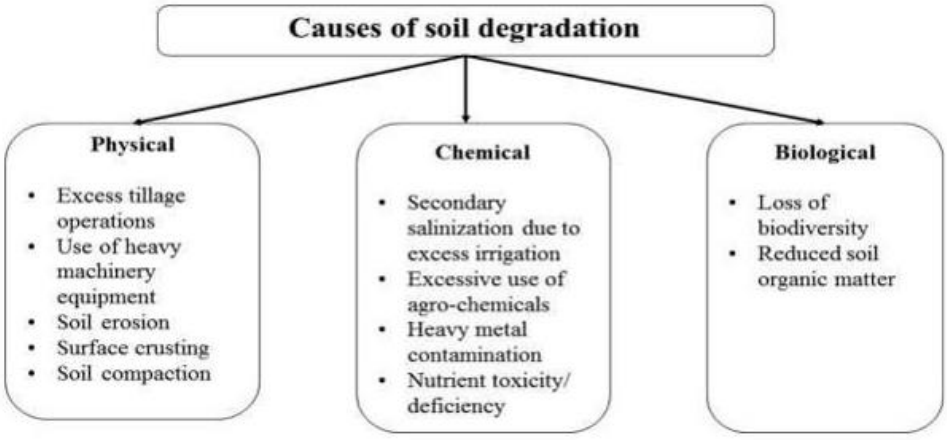

Fig 1:- Causes of Soil Degradation

II. REASONS

Land degradation is caused by excessive pressure on land to meet the competing needs of a growing population for food, feed and fibre. Soil is not an inert medium, but a living, vital ecosystem. It takes 500 years for one inch of topsoil to form through natural processes. As the soil degrades, the processes taking place within it are compromised. This leads to decreased soil health, biodiversity and productivity, causes problems at all levels in many ecosystems, and leads to major environmental impacts such as flooding and mass migration. Converting forests to arable land robs them of essential nutrients and impedes the recycling and replenishment of organic matter. It also reduces the amount of carbon the soil can store by 50-75%. Some major causes of soil degradation:

A. Soil Erosion -

The main causes of soil erosion are water, wind, waves and glaciers removal of the top layer of soil by various means, including both natural phenomena and human activities, is known as soil erosion. Water is considered the main cause of soil erosion. The most affected area in India by soil erosion is Rajasthan.

B. Decline of Soil Fertility -

The soil is under-productive despite adequate irrigation and nutrients. Frequent tillage, unscientific crop rotation and widespread overuse of chemical fertilizers are the main reasons for soil fertility decline. The land should not be cultivated for a period of time and its fertility must be maintained. Harvest after harvest makes the land barren. Soil fertility in India is mainly affected in Punjab, Haryana and UP.

C. Water Absorption -

If the country does not have a proper drainage system, the land will be flooded. This leads to saturation of the harvest. Flooding prevents normal air circulation and reduces the oxygen content in the soil. Building a proper drainage system to drain water from the land is the best way to reduce inundation.

D. Salinity –

In areas with little precipitation, the soil becomes saline or alkaline. In India, Rajasthan is an example. When seawater intrudes on land, the soil becomes salty. Due to the presence of calcium carbonate under the soil, water does not penetrate.

E. Moving Cultivation –

It is a cultivation method mainly practiced in the north eastern states of India. It is a type of open-air cultivation. After harvesting, the land is cleared and burned. The next ploughing is done in another plot, and the burnt land goes dormant for a period of time. In the early days, the interval between this two cultivations in country was 10-20 years. Population growth and declining land availability have narrowed the gap to just 2–3 years, resulting in large-scale deforestation, pollution, loss of wildlife habitat, and more. Forest burning leads to soil erosion and gradual soil degradation.

CONCLUSION

Currently, 62 percent of agricultural soils in India have less than 0.5 percent organic matter content. The minimum organic content of arable soil should be 3-6 percent. By bringing the land under shade from vegetation and enriching the soil with plant waste and animal waste, the organic matter content of the soil can be restored. Combined and simultaneous application of low-cost technologies, residue management, soil amendment use, INM approach, agroforestry, etc. will optimize resource utilization efficiency and improve overall crop production, especially in tropical regions of India. Appropriate policies and programs in all countries can help find solutions.

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