B.A/B.Com/B.Sc. Second Semester
Environmental Studies (AECC)

Unit 3: Natural Resources

Land resources: Land is a finite and valuable natural resource which occupies nearly 20 percent of the earth surface. Land provides habitat for humans and other terrestrial organisms. The basic functions of land in supporting human and terrestrial ecosystems can be summarised as :

1. Provide habitat for millions of land organisms.
2. Production of food, fibre and other biotic materials.
3. Maintain the flow and storage of surface and ground water sources.
4. Act as storehouse of minerals and other raw materials.
5. It provides space for industrial establishment and settlement.

Landuse changes: The term landuse refers to the land occupied by human being for various purposes. Due to increase in human population, there is rapid landuse change, which directly affecting land resources. Landuse change has many other negative impacts on ecosystems and environmental components. Some factors responsible for landuse change are:

Economic and technological factors: Increasing global economic activities are increasing demand for goods and services. This enhancing technological development to meet the demands and exerts pressure on land resources. Many land areas are converted to industrial areas and business establishment.

Demographic factors: Population growth is another major factor of landuse change. It exerts pressure on all the components of environment of that particular area. Growing population can change landuse pattern of an particular area as it demand for residential area or other infrastructure like road, rail lines, commercial area etc.

Cultural factors: Numerous cultural factors also influence landuse of an area. It also changes the landuse pattern as it requires infrastructural development in that area. Many political and economical conditions are also influence landuse pattern.

Natural factors: Many environmental factors are also responsible for landuse change. Various sudden climatic extreme events can change landuse pattern of an area suddenly. This can imbalances ecosystem stability and can change the topographical features.

Changes in landuse pattern have various detrimental social and environmental impacts. Few impacts are:

Biodiversity loss: Landuse change of an area can directly reduce biodiversity. Forest lands are converted into residential, agricultural and industrial area. These types of landuse change have negative impact on ecosystem and biodiversity.

Global warming: Deforestation due to landuse changes can results in increase in the amount of carbon dioxide in atmosphere which is a major greenhouse gas.

Climate Change: Landuse changes also contribute to microclimatic change of an area. Various processes involved in climatic balance, such as evapo transpiration by vegetation, sunlight reflection by land surface etc. are hampered due to landuse change.

Pollution: Different types of pollution of environmental components are directly related to landuse change. Conversion of natural land area into different land for human purpose results in disruption of ecological balance which results in degradation of the quality of environmental components.

Other impacts: Landuse change have different other impacts like soil erosion, release of different pollutant and contaminants, increased frequency many diseases in human health, increased impacts of natural disasters etc.

Soil erosion: The process of destruction of soil due to natural and manmade activities and the removal of destroyed soil is called soil erosion. Depending upon the causes, soil erosion is of two types- normal or geologic erosion and accelerated erosion. Normal erosion is caused by natural agents like wind, water, gravity etc. Accelerated erosion is caused due to different human activities. Agents of soil erosion may be climatic or biotic. Water and wind are climatic agents. Different human activities like overgrazing, deforestations, mining etc are included as biotic factor of soil erosion.

Land degradation: Land degradation is a process in which quality of land is degraded by environmental and human induced processes. Soil formation is an extremely slow natural process. It takes more than one hundred years for formation of one inch of soil. Natural processes of land degradation are disasters like drought, flood, landslide etc. Human activities contributing to land degradation are unsustainable agricultural practices, deforestation, overgrazing, industrial establishment, water management plan etc.

Desertification: It is a process of land degradation by which fertile land becomes infertile and ultimately converted to desert. All the activities of land degradation are responsible for desertification process. Desertification and land degradation can affect human society. These two processes can results in reduction in food production, water scarcity and water pollution which can directly affect human health.

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