UNIT 2

RENEWABLE AND NON RENEWABLE RESOURCES

Forest

A forest is a dense growth of trees and other plants covering a significant amount of land.

Forests are the predominant terrestrial ecosystem on Earth. Only five countries are home to more than 50% of the world's forests (Brazil, Canada, China, the Russian Federation, and the United States of America). The tropical latitudes have the highest proportion of forests (45%), followed by the boreal, temperate, and subtropical domains.

Forests have a significant impact on the life of the planet. It not only protects diverse biodiversity but also has a positive effect on climate. As a result, forests have a multifaceted value. Forests are essential for various reasons. It has economic, ecological, and cultural significance.

Forest Resources

The different types of resources like Wood, timber, bushmeat, medicines etc., provided by forests are termed Forest Resources.

Forests are the foundation of many industries, including timber, processed wood, paper, rubber, fruits, etc. Forests supply various products and services, including food, fodder, lumber, rubber, latex, resins, waxes, steroids, lubricants, flavourings, dyes, incense, and fibres. Many of these substances may be acquired sustainably, which increases the forest's long-term resource value.

The economic value of forest biodiversity is enormous. The forest's diverse flora and fauna are critical to several life-sustaining things, like medications and insecticides. Forests have economic value because they help to stabilize the environment. For example, forests that prevent soil erosion save a potential cost of erosion management.

Deforestation

Deforestation refers to the decrease in forest areas across the world that are lost for other uses such as agricultural croplands, urbanization, or mining activities. Greatly accelerated by human activities since 1960, deforestation has been negatively affecting natural ecosystems, biodiversity, and the climate.

The Causes of Deforestation:

1. Agriculture is the Number 1 Cause of Deforestation (~80%)

According to the **FAO**, agriculture causes around 80% of deforestation. And how does agriculture cause so much deforestation? According to the same report, 33% of agriculture-caused deforestation is a consequence of subsistence agriculture – such as local peasant agriculture in developing countries.

2. New Constructions (~15%)

The construction of human infrastructures has also been driving deforestation. More specifically, 10% of deforestation can be attributed to new infrastructures that serve the current human lifestyle in four main ways: transportation, transformation and energy generation.

3. How Urbanization Is Causing Deforestation (~5%)

The populational shift that is leading people to move from rural areas to urban areas is also contributing to deforestation (5%, according to FAO). This urban growth – in which **68% of the world's population** is expected to live in cities by 2050 – is leading to an exponential growth of housing and consumption sites.

The most known consequence of deforestation is its **threat to biodiversity**. In fact, forests represent some of the most veritable hubs of **biodiversity**. From mammals to birds, insects, amphibians or plants, the forest is home to many rare and fragile species.

80% of the Earth's land animals and plants live in forests.

Food Resources

Natural or artificially produced materials, which are used as food to derive metabolic energy, are called *food resources*.

Food is ultimate source of:

- Metabolic energy (required for growth)
- Body repair
- Body nutrients & heat balance
- Daily activities

Types of Food Resources

- **Agricultural crops:** All cereals, pulses, vegetables and foods
- **Livestock:** Food obtained from animals e.g., Milk, meat, eggs, honey.
- **Fish:** Major part of world population dependent on fish as food source. (fish, crabs, prawn etc.)

Crops: Mainly crops providing grains like rice, wheat, maize, etc.
Vegetables and fruits: It includes vegetables and different types of fruits.
Animals and Birds: Animals like cow, goat, pig, camel and hen are utilised for food production.
Aquatic animals: This includes different types of fishes, ducks, crane and water birds.

Average Minimum dietary requirement about 1800 cal/person per day

- Increasing population results in less per capita food availability
- Relation between population growth and growth in food production becomes important
- Food production in most developing countries is less than their population growth rates

Water Resources

Water resources are natural resources of water that are potentially useful for humans,[1] for example as a source of drinking water supply or irrigation water. 97% of the water on Earth is salt water and only three percent is fresh water; slightly over two-thirds of this is frozen in glaciers and polar ice caps.[2] The remaining unfrozen freshwater is found mainly as groundwater, with only a small fraction present above ground or in the air.[3] Natural sources of fresh water include surface water, under river flow, groundwater and frozen water. Artificial sources of fresh water can include treated wastewater (wastewater reuse) and desalinated seawater. Human uses of water resources include agricultural, industrial, household, recreational and environ mental activities.

Types of Water Resources

Saltwater Resources:

•The planet's atmosphere is covered in saltwater. However, when it relates to potable water sources, saltwater is actually ineffective. Desalination plants, though they do operate, are in short supply due to the high energy costs associated with the operation.

Surface Water Resources:

•The water in lakes and rivers is known as surface water. Potable water, recreation, industry, agriculture, transportation, livestock, and hydroelectric energy are all uses for this water.

•Groundwater natural resources provide over 63 percent of the municipal water supply. Irrigation relies on surface water for 58 percent of all its water supply. Irrigation relies on groundwater for 58 percent of its water system.

•Surface water systems have nearly 98 percent of the water used by industry. As a result, maintaining and improving the surface water quality is critical. Watershed entities track streamflow and groundwater management on a regular basis.

- **Agricultural Use**

  Agriculture accounts for about 69 per cent of all water consumption especially in agricultural economies like India. Agriculture thereby becomes the largest consumer of the Earth's available freshwater.

- **Industrial Use**

  Water is the lifesaver of the industry. It is used for various purposes such as a raw material coolant, a solvent, a transport agent, and as a source of energy.

- **Domestic Use**

  It includes usages like drinking, cleaning, personal hygiene, garden care, cooking, washing of clothes, dishes, vehicles, etc.

- **Use for Hydropower Generation**

  Electricity generated from water is called hydropower. Hydropower is one of the highly renewable sources of electricity in the world.

Energy Resources

An energy resource is something that can produce heat, power life, move objects, or produce electricity