

UNIT- III

ENVIRONMENTAL SCIENCE, ENVIRONMENTAL HEALTH, AND SANITATION

NATURAL RESOURCES:

Natural resources are materials created in nature that are used and usable by humans. They include Natural substances (e.g., soil, water) and energy supplies (e.g., coal, gas) that serve to satisfy human needs and wants. —*Barsch and Bürger (1996), Minc (1976)*

NONRENEWABLE RESOURCES:

- These are the resources that are once used cannot be replenished or replaced. This means that nonrenewable resources are very limited in reservoir and cannot be used defensibly. These natural resources is also known as finite resources.(e.g. Fossil fuels, metals, sand)

Natural Resources and Associated Problems:

- Natural resources are those resources which exist without any human intervention. Earth ecosystem is one which will include air, land, water, sunlight, minerals, vegetation etc. including all animal life.

Climate Change: Activities done by man and increasing population were giving rise to greenhouse gases and carbon in atmosphere and are responsible to cause severe changes in the climate that usually affects the natural resources and biodiversity.

Exploitation of Resources: The biggest problem is the exploitation of natural resources. As we uses the natural resources our environment is degrading where as economic expansion is increasing day by day. As the population increasing our economical growth and Natural resources depletion is also increasing day by day. Due to this destruction of our Natural resources and Environment, this problem is becoming more severe or serious.

- **Over Population Leads to Exploitation**
- Due to growing population, all natural resources are under pressure, this results in over exploitation. Due to excessive use of natural Resources, e.g., water, fossil fuels, land, Forests, etc. were decreasing day by day.
- Due to over population, natural resources were depleting specially fertile land, forests, wild life, etc. Due to this there is danger for natural species and aquatic life.
- **Environmental Pollution**
- Environment pollution is an unacceptable changes in the environment which has deleterious effects on plants and animals.

Forest Resources

- Forest has great importance in our life. We can not underestimate forests. Our survival basically depends on forest as the air we breath is provided by forest the wood we use for our lively hood, it also prevent soil erosion and decline the changes in climate.

There are various uses of forest:

- Commercial use
- Ecological uses
- Life and economy of tribal
- Over exploitation of forests
- Aesthetic values

Water resources:

- Water resources are natural resources of water. Water resources are useful for Human beings, e.g., water supply or water irrigation. Out of which 97% of water is salt water on Earth, only 3% of water is fresh water. Two third of fresh water is frozen in glacier and polar ice caps and the left over unfrozen fresh water is mainly found in ground waters and with little fragments of fresh water is also found in air and above ground.

Mineral Resources:

- We know all the material present on Earth is used by individual for something. So mineral is a naturally occurring substance, which is represented by a chemical formula and it may be solid or inorganic which have crystal structure. The key material basis for Socioeconomic development are the Mineral resources.

Food Resources:

- One of the basic requirement of Human being is food. It is one of the most important aspect of our body for proper functioning as it provides energy to human body and food is also required for the well being of Human body at all stages of life.

Six Basic Nutrient of Food

- Fats
- Proteins
- Carbohydrates
- Vitamins
- Minerals
- Water

World Food Problems

- **Malnourishment**
- Marasmus
- Kwashiorkor
- **Undernourishment**
- **Over Nourishment**

Energy Resources

- **Energy**
- Energy can be defined as capacity to do work. Currently development is not possible without energy. Energy can be changed from one form to another but it is neither created nor destroyed. Energy usually exists in various forms, e.g., heat, mechanical energy, potential energy, kinetic energy, light energy, electrical energy, etc. So, energy is the ability to do work.
- **Renewable Energy Resources**
- These resources are the resources which are constantly replaced and are usually less polluting. The Resources which can be renew or replenish through rapid Natural Cycles again and again at a faster rate and are also known as Non-conventional energy sources. Some of the examples of renewable energy resources are Solar energy, wind energy, Hydro energy, Biomass energy, etc

Land Resources

- Land resources are one of the most important natural resources. These are our basic resources. Most of our substances were obtained from land resources such as clothing, shelter, fuel, etc. Land cover almost 20% of earth surface.
- Distribution of Land resources are wet land covers in river, (lakes) - 3%
- Urban areas cover -3% (building, industry)
- Cropland cover (agriculture Crops)-12%
- Permanent grassland Cover -26%
- Forests Cover-20%

Role of individuals in conservation of natural resources, and equitable use of resources for sustainable lifestyle

- Conserve water
- Protect soil
- Promote sustainable Agriculture
- Equitable use of resources for sustainable lifestyles