Chapter 1 Resources and Development

Resources

• Everything available in our environment which can be used to satisfy our needs, provided, it is technologically accessible, economically feasible and culturally acceptable can be termed as 'Resource'.

Classification of Resources

• The resources can be classified as:
→ On the basis of origin – biotic and abiotic
→ On the basis of exhaustibility – renewable and non-renewable
→ On the basis of ownership – individual, community, national and international
→ On the basis of status of development – potential, developed stock and reserves.

On the Basis of Origin

• Biotic Resources: These are obtained from biosphere and have life such as human beings, flora and fauna, fisheries, livestock etc.
• Abiotic Resources: All those things which are composed of non-living things are called abiotic resources. For example, rocks and metals.

On the Basis of Exhaustibility

• Renewable Resources: The resources which can be renewed or reproduced by physical, chemical or mechanical processes are known as renewable resources. For example, solar and wind energy, water, forests and wildlife, etc.
• Non-Renewable Resources: The resources once consumed cannot be replaced are known as non-renewable resources. These resources take millions of years in their formation.For example: Oil, Coal etc.

On the Basis of Ownership

• Individual Resources: The resources owned privately by individuals are called Individual resources. For example: Plot, houses etc. owned by a person.

• Community Owned Resources: The resources which are accessible to all the members of the community. For example: Public parks, picnic spots owned by a community.
• National Resources: The resources which come under nation are known as National Resources. Technically, all the resources belong to the nation.
• International Resources: The resources lying beyond 200 kms of Exclusive Economic Zone in the oceans are called International Resources. No one can use these resources without the permission of international institutions.

On the Basis of the Status of Development

• Potential Resources: Resources which are found in a region, but have not been utilised. For example: the regions Rajasthan and Gujarat have enormous potential for the development of wind and solar energy.
• Developed Resources: Resources which are surveyed and their quality and quantity have been determined for utilisation.
• Stock: The resources that have been surveyed, but cannot be used due a lack of technology. For example: water is a compound of two inflammable gases; hydrogen and oxygen, which can be used as a rich source of energy but we don't have technical know-how to use them.
• Reserves: The resources that have been surveyed and we can use them with present technology but their use has not been started are known as Reserves. For example: the water in the dams, forests etc.

Development of Resources

• Resources are vital for human survival.
• It was believed that resources are free gifts of nature so, human beings used them indiscriminately and this has led to the following major problems:
→ Depletion of resources for satisfying the greed of few individuals.
→ Accumulation of resources in few hands which divides the society into rich and poor.
→ Indiscriminate exploitation of resources has led to global ecological crises such as, global warming, ozone layer depletion, environmental pollution and land degradation.

• For a sustained quality of life and global peace, an equitable distribution of resources has
become essential.
• For using resources judiciously, we need to adopt sustainable economic development.
• Sustainable economic development means development should take place without damaging the environment, and development in the present should not compromise with the needs of the future generations.

Resource Planning

• Resource planning is a complex process which involves :
(i) Identification and inventory of resources across the regions of the country. This involves surveying, mapping and qualitative and quantitative estimation and measurement of the resources.
(ii) Evolving a planning structure endowed with appropriate technology, skill and institutional set up for implementing resource development plans.
(iii) Matching the resource development plans with overall national development plans.

Land Resources

• Land is a natural resource of utmost importance.
→ It supports natural vegetation, wild life, human life, economic activities, transport and communication systems.

• Land is present in limited size so we must use them effectively.

Land Resources in India

• About 43 percent of the land area is plain, which provides facilities for agriculture and industry.

• About 30 percent of the total surface area of the country are mountains which ensure perennial flow of some rivers and provide facilities for tourism and ecological aspects.
• About 27 per cent of the area of the country is the plateau region that possesses rich reserves
of minerals, fossil fuels and forests.

Land Use Pattern in India

• The use of land is determined by:
→ Physical factors such as topography, climate, soil types
→ Human factors such as population density, technological capability and culture and traditions etc.

• Land use data, however, is available only for 93 per cent of the total geographical area because the land use reporting for most of the north-east states except Assam has not been done fully.
→ Also, some areas of Jammu and Kashmir occupied by Pakistan and China have also not been surveyed.

Land Degradation and Conservation measures

• Human activities such as deforestation, over grazing, mining and quarrying contributed in land degradation.
• Measures to control land degradation:
→ Afforestation
→ Planting of shelter belts of plants
→ control on over grazing
→ stabilisation of sand dunes by growing thorny bushes
→ Proper management of waste lands
→ control of mining activities

Soil as a Resource

• Soil is the most important renewable natural resource.
• It is the medium of plant growth and supports different types of living organisms on the earth.

Classification of Soils

On the basis of the factors responsible for soil formation, colour, thickness, texture, age, chemical and physical properties, the soils of India can be classified in different types:

• Alluvial Soils:

→ Entire northern plains are made of alluvial soil.
→ Also found in the eastern coastal plains particularly in the deltas of the Mahanadi, the Godavari, the Krishna and the Kaveri rivers.
→ Fertile soil therefore, fit for agriculture purpose.
→ Regions of alluvial soils are intensively cultivated and densely populated.
→ Rich in potash, phosphoric acid and lime which are ideal for the growth of sugarcane, paddy, wheat and other cereal and pulse crops.

• Black Soil:
→ Black in colour and are also known as regur soils.
→ Ideal for growing cotton and is also known as black cotton soil.
→ Found in the plateaus of Maharashtra, Saurashtra, Malwa, Madhya Pradesh and Chhattisgarh also along the Godavari and the Krishna valleys.
→ Made up of extremely fine i.e. clayey material.
→ Well-known for their capacity to hold moisture.
→ Rich in calcium carbonate, magnesium, potash and lime.

• Red and Yellow Soils:
→ Found in the areas of low rainfall in the eastern and southern parts of the Deccan plateau.
→ Also found in parts of Odisha, Chhattisgarh, southern parts of the middle Ganga plain and along the piedmont zone of the Western Ghats.
→ Develop a reddish colour due to diffusion of iron in crystalline and metamorphic rocks.

• Laterite Soils:
→ Develops in areas with high temperature and heavy rainfall.
→ Found in Karnataka, Kerala, Tamil Nadu, Madhya Pradesh, and the hilly areas of Odisha and Assam.
→ Suitable for cultivation with adequate doses of manures and fertilizers.
→ Low Humus content because decomposers, like bacteria, get destroyed due to high temperature.

• Arid Soils:
→ Found in the western parts of Rajasthan.
→ After proper irrigation these soils become cultivable.

→ Lacks humus and moisture because dry climate, high temperature make evaporation faster.
→ Salt content is very high and common salt is obtained by evaporating the water.

• Forest Soils:
→ Found in the hilly and mountainous areas where sufficient rain forests are available.
→ Feature differs based on location.
→ Loamy and silty in valley sides and coarse grained in the upper slopes.
→ Silt in the lower parts of the valleys particularly on the river terraces and alluvial fans are fertile.

Soil Erosion and Soil Conservation

• Natural ways of Soil erosion: Wind, glacier and water lead to soil erosion.
• Human activities: Deforestation, over-grazing, construction and mining etc., contributes in soil erosion.
• Measures to control Soil erosion:
→ Strip cropping
→ Planting shelter belts
→ In the hilly areas, using contour ploughing and terrace farming.