Class 10 Geography Chapter 1 Notes

Resources and Development

Comprehensive Study Notes Based on the Latest Exam Pattern

1. Introduction: What is a Resource?

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 a 'Resource'.

- Human beings interact with nature through technology and create institutions to accelerate their economic development.
- Human beings themselves are essential components of resources. They transform material available in our environment into resources and use them.

2. Classification of Resources

Resources can be classified in the following ways:

A. On the Basis of Origin

- **Biotic Resources:** These are obtained from the biosphere and have life. *Examples:* Human beings, flora and fauna, fisheries, livestock.
- **Abiotic Resources:** All those things which are composed of non-living things. *Examples:* Rocks, metals.

B. On the Basis of Exhaustibility

- **Renewable Resources:** Resources that can be renewed or reproduced by physical, chemical, or mechanical processes. *Examples:* Solar and wind energy, water, forests, wildlife.
- **Non-Renewable Resources:** These occur over a very long geological time. They take millions of years in their formation and cannot be renewed easily. *Examples:* Minerals and fossil fuels.

C. On the Basis of Ownership

- **Individual Resources:** Owned privately by individuals. *Examples:* Plots, houses, pasture lands, ponds.
- **Community Owned Resources:** Accessible to all the members of the community. *Examples:* Public parks, picnic spots, village ponds.

- **National Resources:** Technically, all resources belonging to the nation. The country has legal powers to acquire even private property for public good. *Examples:* Minerals, water resources, forests, wildlife, land within political boundaries, and oceanic area up to 12 nautical miles from the coast.
- **International Resources:** Regulated by international institutions. *Examples:* The oceanic resources beyond 200 nautical miles of the Exclusive Economic Zone (EEZ) belong to open ocean, and no individual country can utilize these without the concurrence of international institutions.

D. On the Basis of the Status of Development

- **Potential Resources:** Found in a region but have not been utilized. *Examples:* Solar and wind energy potential in Rajasthan and Gujarat.
- **Developed Resources:** Surveyed and their quality and quantity have been determined for utilization.
- **Stock:** Materials in the environment which have the potential to satisfy human needs but human beings do not have the appropriate technology to access them. *Examples:* Extracting hydrogen and oxygen from water to use as a rich source of energy.
- **Reserves:** Subset of the stock, which can be put into use with the help of existing technical 'know-how' but their use has not been started. *Examples:* Water in dams, forests.

3. Development of Resources

Resources are vital for human survival and maintaining the quality of life. Indiscriminate use of resources has led to major problems:

1. Depletion of resources for satisfying the greed of a few individuals.
2. Accumulation of resources in few hands, dividing the society into 'haves' and 'have-nots' (rich and poor).
3. Global ecological crises such as global warming, ozone layer depletion, environmental pollution, and land degradation.

Sustainable 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."

Rio de Janeiro Earth Summit, 1992 & Agenda 21

- In June 1992, more than 100 heads of states met in Rio de Janeiro in Brazil, for the first International Earth Summit.
- The summit addressed urgent problems of environmental protection and socio-economic development at the global level.

- **Agenda 21:** It is the declaration signed by world leaders in 1992 at the United Nations Conference on Environment and Development (UNCED). Its aim is achieving global sustainable development and combating environmental damage, poverty, and disease through global cooperation.

4. Resource Planning

Resource planning is a complex process which involves:

1. **Identification and inventory** of resources across the regions of the country (surveying, mapping, qualitative and quantitative estimation).
2. **Evolving a planning structure** endowed with appropriate technology, skill, and institutional set up for implementing resource development plans.
3. **Matching the resource development plans** with overall national development plans.

Note: India has made concerted efforts for achieving the goals of resource planning right from the First Five Year Plan launched after Independence.

Conservation of Resources Irrational consumption and over-utilization of resources may lead to socio-economic and environmental problems. To overcome these, resource conservation at various levels is important. Gandhiji said, *"There is enough for everybody's need and not for any body's greed."*

5. Land Resources

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

- **Plains (43%):** Provide facilities for agriculture and industry.
- **Mountains (30%):** Ensure perennial flow of some rivers, provide facilities for tourism and ecological aspects.
- **Plateaus (27%):** Possess rich reserves of minerals, fossil fuels, and forests.

Land Utilization Categories in India

1. **Forests**
2. **Land not available for cultivation:** Barren and wasteland; land put to non-agricultural uses (buildings, roads, factories).
3. **Other uncultivated land:** Permanent pastures and grazing land; land under miscellaneous tree crops; cultruable wasteland (left uncultivated for more than 5 agricultural years).
4. **Fallow lands:** Current fallow (left without cultivation for one or less than one agricultural year); other than current fallow (1 to 5 agricultural years).

5. **Net Sown Area:** Area sown more than once in an agricultural year plus net sown area is known as **Gross Cropped Area**.

6. Land Degradation and Conservation Measures

Human activities have not only brought about degradation of land but have also aggravated the pace of natural forces to cause damage to land.

Causes of Land Degradation

- **Mining:** Mining sites are abandoned after excavation work is complete leaving deep scars and traces of over-burdening (Jharkhand, Chhattisgarh, Madhya Pradesh, Odisha).
- **Overgrazing:** A severe problem in states like Gujarat, Rajasthan, Madhya Pradesh, and Maharashtra.
- **Over-irrigation:** Leads to waterlogging, increasing salinity and alkalinity in the soil (Punjab, Haryana, Western Uttar Pradesh).
- **Industrial Effluents:** Mineral processing like grinding of limestone for cement industry generates huge quantities of dust, retarding the process of water infiltration into the soil.

Conservation Measures

- Afforestation and proper management of grazing.
- Planting of shelterbelts of plants.
- Control on overgrazing and stabilization of sand dunes by growing thorny bushes.
- Proper management of wastelands and control of mining activities.
- Proper discharge and disposal of industrial effluents and wastes after treatment.

7. 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. It takes millions of years to form soil up to a few centimeters in depth.

Classification of Soils in India

1. **Alluvial Soil:**
    - Most widely spread and important soil. Forms the entire northern plains.
    - Deposited by three important Himalayan river systems: the Indus, the Ganga, and the Brahmaputra.
    - Consists of various proportions of sand, silt, and clay.
    - Classified as **Bangar** (old alluvial, less fertile, contains kankar nodules) and **Khadar** (new alluvial, highly fertile, fine particles).
    - Ideal for the growth of sugarcane, paddy, wheat, and other cereal and pulse crops.
2. **Black Soil (Regur Soil):**
    - Black in color and ideal for growing cotton (also known as black cotton soil).
    - Typical of the Deccan trap (Basalt) region spread over northwest Deccan plateau.
    - Made up of extremely fine, clayey material. Well-known for their capacity to hold moisture.
    - Rich in calcium carbonate, magnesium, potash, and lime, but poor in phosphoric contents.
    - Develops deep cracks during hot weather, which helps in proper aeration.
3. **Red and Yellow Soils:**
    - Develops on crystalline igneous rocks in areas of low rainfall in the eastern and southern parts of the Deccan plateau.
    - Develops a reddish color due to diffusion of iron in crystalline and metamorphic rocks. It looks yellow when it occurs in a hydrated form.
4. **Laterite Soil:**
    - Develops in areas with high temperature and heavy rainfall.
    - Result of intense leaching due to heavy rain.
    - Humus content is low because micro-organisms get destroyed due to high temperature.
    - Suitable for cultivation with adequate doses of manures and fertilizers.
    - Highly useful for growing tea and coffee (Karnataka, Kerala, Tamil Nadu) and cashew nuts (Red laterite in Tamil Nadu, Andhra Pradesh, Kerala).
5. **Arid Soils:**
    - Range from red to brown in color. Generally sandy in texture and saline in nature.
    - Lacks humus and moisture due to dry climate and high temperature.
    - The lower horizons are occupied by Kankar because of increasing calcium content downwards, which restricts water infiltration.

6. **Forest Soils:**

- Found in hilly and mountainous areas where sufficient rain forests are available.
- Loamy and silty in valley sides and coarse grained in the upper slopes.
- In the snow-covered areas of Himalayas, they experience denudation and are acidic with low humus content.

8. Soil Erosion and Soil Conservation

The denudation of the soil cover and subsequent washing down is described as **soil erosion**. The processes of soil formation and erosion go on simultaneously, generally maintaining a balance. However, this balance is disturbed by human activities like deforestation, over-grazing, construction, and mining, as well as natural forces like wind, glacier, and water.

Types of Soil Erosion

- **Gully Erosion:** The running water cuts through the clayey soils and makes deep channels known as gullies. The land becomes unfit for cultivation and is known as **bad land** (e.g., ravines in the Chambal basin).
- **Sheet Erosion:** When water flows as a sheet over large areas down a slope, washing away the topsoil.
- **Wind Erosion:** Wind blows loose soil off flat or sloping land.

Measures for Soil Conservation

- **Contour Ploughing:** Ploughing along the contour lines decelerates the flow of water down the slopes.
- **Terrace Farming:** Cutting out steps on the slopes to create terraces restricts erosion. Western and central Himalayas have well-developed terrace farming.
- **Strip Cropping:** Large fields are divided into strips. Strips of grass are left to grow between the crops, breaking the force of the wind.
- **Shelter Belts:** Planting lines of trees to create shelter. These belts have contributed significantly to the stabilization of sand dunes in western India.

End of Chapter 1 Notes