Development of Resources and Resource Planning

Resources are materials available in our environment that can be used to satisfy human needs, provided they are technologically accessible, economically feasible, and culturally acceptable. Natural resources include land, water, vegetation, and minerals.

Resources are classified based on origin, exhaustibility, ownership, and development status:

- **Origin:** Biotic (from living things) and Abiotic (from non-living things)
- **Exhaustibility:** Renewable (can be replenished) and Non-renewable (cannot be easily replaced)
- **Ownership:** Individual, Community, National, and International
- **Status of Development:** Potential (not yet used), Developed stock (already used), and Reserves (stored for future use)

Sustainable Economic Development means development that meets present needs without compromising the ability of future generations to meet their own needs, ensuring environmental protection.

International Earth Summit, Rio de Janeiro, 1992: Over 100 heads of states gathered to focus on sustainable development and environmental protection. The summit resulted in the Declaration on Global Climate Change and Biological Diversity and Agenda 21, aimed at combating environmental degradation, poverty, and diseases through global cooperation.

Resource Planning is the technique of proper utilization of resources to satisfy present needs while conserving them for the future. It involves:

- Identification and inventory of resources through surveying and mapping
- Implementation of resource development plans with appropriate technology and institutional support
- Alignment of resource plans with national development goals

Resource planning reduces wastage, prevents pollution, and ensures sustainable use of resources.

Exam Questions

Q1: What is resource planning and why is it important?
Answer: Resource planning is the process of managing resources efficiently to meet current needs and conserve them for future generations. It is important to reduce wastage, prevent environmental pollution, and ensure sustainable development.

Q2: What were the main outcomes of the 1992 Earth Summit?
Answer: The Earth Summit led to the Declaration on Global Climate Change and Biological Diversity and Agenda 21, focusing on sustainable development and global cooperation to combat environmental issues.

Land and Soil as Resources

India's land resources include mountains, plateaus, and plains. Plains cover 43% of the country and provide cultivable land. Mountains (30%) offer forests and wildlife, while plateaus (27%) contain minerals, forests, and some arable land.

Land is used for forests, cultivation, pastures, and non-agricultural purposes like buildings and roads. Land not available for cultivation includes barren land and wasteland. Fallow land is temporarily uncultivated land.

Land degradation in India is caused by deforestation, overgrazing, mining, over-irrigation, industrial pollution, and dust from industries. Conservation measures include afforestation, controlled grazing, planting shelter belts, stabilizing sand dunes, proper mining control, and treating industrial waste.

Soil is a vital renewable natural resource formed by relief, parent rock, climate, vegetation, and biological factors. It contains organic (humus) and inorganic materials.

Types of soils in India include:

- **Alluvial Soil:** Found in northern plains, fertile, supports crops like sugarcane, paddy, and wheat. Divided into Khadar (new) and Bangar (old) soils.
- **Black Soil:** Also called regur soil, found in Maharashtra, Madhya Pradesh, and other regions. Ideal for cotton, retains moisture well.
- **Red and Yellow Soil:** Found in Odisha, Chhattisgarh, and Western Ghats, formed due to iron diffusion.
- **Laterite Soil:** Found in high temperature and rainfall areas like Karnataka and Kerala, suitable for tea and coffee.
- **Arid Soil:** Sandy and saline, found in Rajasthan, Punjab, and Haryana.
- **Forest Soil:** Found in hilly regions, varies from loamy to coarse-grained.

Soil Erosion is the removal of topsoil by natural agents like wind, water, glaciers, and human activities such as deforestation and mining.

Types of soil erosion include:

- **Gully Erosion:** Deep channels formed by running water, making land unfit for cultivation.
- **Sheet Erosion:** Topsoil washed away by water flowing as a sheet.
- **Wind Erosion:** Soil blown away by strong winds.
- **Defective Farming Methods:** Wrong ploughing techniques causing erosion.

Soil conservation methods include contour ploughing, terrace farming, strip cropping, shelter belts, plugging gullies, afforestation, and controlling mining activities.

Exam Questions

Q1: What are the main causes of land degradation in India?
Answer: Land degradation is caused by deforestation, overgrazing, mining, over-irrigation, industrial pollution, and dust from industries.

Q2: Describe two methods of soil conservation.
Answer: Contour ploughing involves ploughing along the contour lines to slow water flow and prevent soil erosion. Terrace farming creates steps on slopes to reduce water runoff and soil loss.

Solved Examples

Example 1: Explain the difference between renewable and non-renewable resources.
Solution: Renewable resources can be replenished naturally over time, such as solar energy and forests. Non-renewable resources cannot be easily replaced once used, such as coal and minerals.

Example 2: What is the significance of the Rio Earth Summit?
Solution: The Rio Earth Summit was significant because it brought global leaders together to address environmental protection and sustainable development, leading to important agreements like Agenda 21.

Practice Set

Easy

- Define natural resources.
- What is soil erosion?

Moderate

- List the types of soil found in India and their characteristics.
- Explain the steps involved in resource planning.

Challenging

- Discuss the causes and effects of land degradation in India.
- Describe the measures taken to conserve soil and land resources.

Answer Key

Easy:

- Natural resources are materials found in nature that can be used to satisfy human needs.
- Soil erosion is the removal of the topsoil by natural agents like wind and water.

Moderate:

- Types of soil in India include alluvial, black, red and yellow, laterite, arid, and forest soil, each with distinct characteristics and regional distribution.

- Resource planning involves identification, inventory, development, and implementation of resource use plans aligned with national goals.

Challenging:

- Land degradation is caused by deforestation, overgrazing, mining, over-irrigation, and pollution, leading to loss of soil fertility and productivity.
- Soil conservation measures include contour ploughing, terrace farming, strip cropping, afforestation, and controlling mining activities.

Quick Reference

- **Resource Planning:** Efficient use and conservation of resources for present and future needs.
- **Soil Types:** Alluvial, Black, Red and Yellow, Laterite, Arid, Forest.
- **Soil Erosion Types:** Gully, Sheet, Wind, and caused by defective farming.
- **Conservation Methods:** Contour ploughing, terrace farming, strip cropping, shelter belts, afforestation.
- **Rio Earth Summit:** 1992 global conference on sustainable development.

Glossary

- **Resource:** Anything from the environment used to satisfy human needs.
- **Sustainable Development:** Development that meets present needs without harming future generations.
- **Alluvial Soil:** Fertile soil deposited by rivers, found in plains.
- **Denudation:** Wearing away of the Earth's surface by natural processes.
- **Afforestation:** Planting trees in areas previously without vegetation.
- **Fallow Land:** Land left uncultivated for a period to restore fertility.
- **Contour Ploughing:** Ploughing along the contours of a slope to prevent soil erosion.

Time Period / Year	Event / Change	Importance

1992	Earth Summit, Rio de Janeiro	Global agreement on sustainable development and environmental protection
Post-1992	Implementation of Agenda 21	Global cooperation to combat environmental degradation and poverty