# **Resources and Development**

## Geography - Class 10

## 1. Resource

- Everything available in our environment which can be used to satisfy our needs
   provided it is Physical Environment
   (Nature)
  - Technologically accessible
  - Economically feasible
  - Culturally acceptable
- Resources are the functions of human activities.

# 2. Classification of resources

## Classification on the basis of Origin

**Biotic Resources:** Such resources are received from the living world (biosphere) Examples- human beings, flora, fauna, fishes etc.

Abiotic Resources: All those things which are composed of non-living things are called abiotic resources. Examples: rocks, metals, minerals etc.

## **Classification on the basis of Exhaustibility**

- Renewable Resources: The resources which can be renewed or reproduced by physical, chemical or mechanical processes are called renewable resources. E.g. solar and wind energy, forests, wildlife etc.
- Non-Renewable Resources: The resources which cannot be renewed or reproduced are called non-renewable resources. E.g. minerals, fossil fuels.

## On the basis of Ownership

- Individual Resources: These resources are owned by individuals. E.g. houses, land, wells, shops etc.
- **Community Resources:** These are resources which are accessible to all the members of a community. E.g. grazing grounds, playground, public parks etc.
- National Resources: These resources which belong to a nation. Technically all the resources belong to a nation. The country can even acquire private property for public good. E.g. all the minerals, water resources, forests, wildlife etc.
- International Resources: These resources which are regulated by international institutions. No
  individual country can utilise these resources without the concurrence of international institutions.
  E.g. resources beyond 200 nautical miles of exclusive economic zone belong to open ocean.



nterdependent relationship between nature, technology and institutions

#### **Board Questions:**

**Board Questions:** 

origin. (2018)

Classify resources on the basis of

 Give one difference between renewable and non-renewable resource. (2017)
 Distinguish between the renewable and non-renewable resources. (2011, 12)

**Board Questions:** 

1. What is meant by the term 'resource'? List the types of resources classified on the basis of its ownership. (2012, 14)

## On the basis of Status of Development

Potential resources: Such resources are found in a region but have not been utilised.
 Examples: Such resources include solar, wind and geothermal energy.
 Board Questions:

 Distinguish between stock and

The western part of India (Gujrat and Rajasthan) have enormous potential for development of wind and solar energy but so far these resources have not been developed properly.

- Developed Resources: These are the actual resources which are surveyed and their quality and quantity have been determined for utilisation. The development of resources depends on technology and feasibility.
- **Stock:** Material in the environment which have the potential to satisfy human needs but human beings do not have appropriate technology to access these are included among stocks.

Example: Water is a compound of two inflammable gases oxygen and hydrogen. But we do not have the technology to separate these to use as rich sources of energy.

• Reserve: Such resources can be used for meeting future requirements with the available technology but their use has not been started. They can be used in future to meet the needs and requirements.

Examples: water in dams, forests etc.

# 3. Resource Development

Indiscriminate use of resources has caused the following problems:

- i. Depletion of resources due to human greed.
- ii. The accumulation of resources in a few hands has divided the society into 'haves' and 'have not' or the rich and the poor.
- iii. Environmental pollution
- iv. Ecological crises
- v. Ozone layer depletion & global warming
- vi. Land degradation

## **Sustainable Development**

It refers to the development that takes place in such a manner that does not damage the environment and does not compromise with the needs of the future generations.

## Rio De Janeiro summit 1992

United Nations conference on Environment and Development (UNCED) summit was held to address the issue of environmental damage and other socioeconomic issues as apart of clean and green environment. This summit was attended by more than 100 heads of states. It's one of the highlights was the adoption of Agenda 21.

#### **Board Questions:**

1. What is sustainable economic development? Suggest any two ways in which resources can be used judiciously. (2015)

potential resources. Give one example

**2.** Differentiate between stock and reserve stating two points of

of each. (2012)

differences. (2011)

 "Sustainability of development is a new area of knowledge". Do you agree? Justify your answer. (2016)
 How is the issue of sustainability important for development? Explain with examples. (2018)

#### Agenda 21

It called upon the nations to work on the issues like

- **Environmental damage**
- Poverty and diseases
- Work collectively with mutual interests and shared responsibilities •
- Local governments to draw their own Local Agenda 21

#### **Resource Planning**

India needs resource because there is uneven distribution of resources of resources across different regions in India.

- The states of Jharkhand, Chhattisgarh, Madhya Pradesh i. are rich in mineral and coal deposits.
- ii. Arunachal Pradesh has abundance of water but lacks infrastructural development.
- iii. The state of Rajasthan lacks in water resources but has great potential for solar and wind energy.
- iv. Ladakh, a cold desert, has rich cultural heritage but it is deficient in water and some vital minerals.

#### **Process of Resource Planning**

- i. Inventory and identification of resources through surveying, mapping, measuring and estimation of quality and quantity of resources.
- Examining the availability of resources from the view of ii. technology, economy, needs, skill, and institutional setup.
- Matching and comparison of resource development at regional, state national levels iii.

#### **Conservation of Resources**

#### **Need to Conserve Resources**

- They are limited
- They are main source of our daily needs
- The future generations have the right to use the resources
- Non-renewable resources are depleting very fast

#### **Methods to Conserve Resources**

- 1. Afforestation
- 2. Stop over utilisation of resources
- 3. Sustainable development
- 4. Govt. laws, policies to conserve resources
- 5. General awareness among masses
- 6. Using non-renewable resources as alternatives

#### **Board Questions:**

1. Why is it essential to have resource planning? Explain any three reasons. (2017) 2. "In India, some regions are rich in certain types of resources but deficient in some other resources." Do you agree with the statement? Support your answer with any three examples. (2017)

resource planning? (2011, 12, 14, 15)

**Board Questions:** 

1. What are the three stages of

**Board Questions:** What is Agenda 21? List its two principals. (2017)

# 4. Land Resources

*Solid part of earth* is called land. It is a very important natural resource. We live on it. use *it for different* purposes and

**Board Questions:** 1. 'Land is a natural resource of utmost importance.' Justify the statements with appropriate arguments. (2014) 2. What area the main advantages of India's land under a variety of relief features. (2011)

perform different economic activities on it.

#### Land utilisation

#### Factors determining the use of land

Physical factors: topography, climate, soil types Human factors: population density, technological capability, culture and traditions

#### 1. Forests

#### 2. Land not available for cultivation

- (a) Barren and waste land (rocky, arid, desert, marshy)
- (b) Land put to non-agricultural uses, e.g. buildings, roads, factories, etc.

#### 3. Other uncultivated land (excluding fallow land)

- (a) Permanent pastures and grazing land,
- (b) Land under miscellaneous tree crops
- groves (not included in net sown area)
- (c) Culturable waste land (left uncultivated for more than 5 agricultural years).

#### 4. Fallow lands

(a) Current fallow- (left without cultivation for one or less than one agricultural year),

(b) Other than current fallow-(left uncultivated for the past 1 to 5 agricultural years).

#### 5. Net sown area

It is the total cropped area sown once in an agricultural year.

Area sown more than once in an agricultural year plus net sown area is known as gross cropped area.

#### Land use Pattern in India

#### net sown area varies from state to state -

It is over 80% in Punjab & Haryana but less than 10% in Arunachal Pradesh, Mizoram, Manipur and Andaman Nicobar

#### Islands.

Forest area- It has increased but still below than the desired 33% as per the Forest Policy 1952. forests help maintain ecological balance and support livelihood of millions of people.





Source : Directorate of Economics and Statistics, Ministry of Agriculture, 2017

#### **IMPORTAND RELIEF FEATURES OF LAND**



Plains- agriculture and industry

Mountains- Some perennial rivers, tourism, ecological balance

Plateaus- mineral reserves, fossil fuels and forests

### Land use data of India

<u>Total geographical</u>

area 3287263 sq. km.

Data available 93% of the total geographical area. Rest 7% area includes N. E. states (rough topography) excluding Assam and J&K occupied by Pakistan (POK) and

### Land Degradation

*Land degradation is the result of continuous use of land over a long period of time without taking appropriate measures* to conserve and maintain it. 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

- Mining and Quarrying: Mines are abandoned after the • excavation work is over or
- mine gets exhausted, leaving deep scars and traces of over-• burdening. Jharkhand, Chhattisgarh, Madhya Pradesh and Odisha suffer from sever land degradation due to mining.
- Overgrazing: It is the main reason of land degradation in states like Gujrat, Rajasthan, Madhya Pradesh and Maharashtra.
- Over irrigation: It causes water logging that leads to salinity and alkalinity in soil.
- Mineral processing: grinding of stones for cement and ceramic industry generates huge quantity of dust in the atmosphere. These dust particles settle down on the soil affecting the pace of infiltration of water into the soil.
- Industrial effluents: It is a major problem of the industrializing world. Industrial wastes cause water pollution and degrade the nearby land.

## **Conservation methods**

- Afforestation: planting trees on culturable waste land can minimize land degradation.
- **Control on overgrazing:** It will help in maintaining vegetation cover on land, check soil erosion and desertification.
- Planting of shelter belts: Such belts help check wind erosion of soil.
- Stabilisation of sand dunes: Growing thorny bushes can check movement of sand dunes. •
- Proper management of wasteland: Land reclamation process can help in making wasteland useful and productive.
- Proper agricultural practices: Crop rotation, strip farming etc.
- Proper disposal of industrial wastes: Treatment of effluents before discharging in water checks water degradation.
- Control of mining activities: It is a major problem of many countries. Use of advanced technologies, proper regulations and control is necessary.

# 3. Soil as a Resource

Soil is loose material formed on the surface of the earth's crust. Soil is formed due to denudation and weathering of rocks. It consists of organic and inorganic materials, air, water and many organisms. Temperature, running water, wind and glaciers, activities of decomposers etc. contribute to the formation of soil. It takes millions of years to form a few cm deep soil layer. Soil

is a living system as it is a medium of plant growth and supports life of different organisms.

**Board Questions:** 

1. What is the main cause of land degradation in Gujrat, Rajasthan and Madhya Pradesh? How can it be checked? (2012, 15) 2. Explain any three human activities responsible for the degradation of land. (2012)

**Board Questions:** Describe any six measures of controlling land degradation. (2011, 12, 15)

**Board Questions:** 

**1.** Explain any three factors responsible for soil formation. (2012) 2. Why is soil considered as a resource? Explain with five arguments. (2015)

## **Classification of Soils**

Soil is classified on the basis of its colour, thickness, texture, age, chemical and physical properties.

## **Alluvial Soils**

These soils are the depositional work of three main Himalayan river systems- the Indus, the Ganga and the Brahmaputra. This is the mostly found soil in India.

Types on the basis of age: Khadar (new alluvium) and Bangar (old alluvium)

Characteristics of alluvial soil: Most fertile, finely grained and have proportions of sand, silt and clay. It is rich in potash, phosphoric acid and lime. It is deficient in nitrogen and humus. It is suitable for cultivation of cereals, pulses, oil seeds, sugarcane etc.

Areas occupied: The entire northern plain, deltas of Mahanadi, Godavari, and Kaveri, along the coast of Kerala, Assam and some parts of Rajasthan and Gujrat.

## Black Soil / Regur Soil

These soils were formed due to weathering of Lava rocks in the Deccan Trap (basalt) region.

**Characteristics:** Black in colour. Extremely fine with clayey material. Rich in nutrients like potash, magnesium, lime and calcium.

Deficient in nitrogen and phosphoric acid. Black soil has large

capacity to hold water. These soils develop large and deep cracks which help in aeration. Black soils are suitable for cotton.

Areas occupied: North West Deccan plateau covering Maharashtra, Saurashtra, Malwa, Madhya Pradesh and Chhattisgarh and parts of Rajasthan, Andhra Pradesh and Karnataka.

## **Red and Yellow soil**

Such soils are formed by the weathering of igneous and metamorphic rocks. These soils surround the black soils mostly on their east and south.

Characteristics: The presence of iron renders the red colour to the soil.

It is deficient in nitrogen, humus and phosphoric acid and lime. These are suitable for cultivation of cotton, rice, pulses, tobacco, jowar etc.

Areas Occupied: In the low rainfall Eastern and southern Parts of Deccan plateau. Parts of Orrisa, Chhattisgarh, Andhra Pradesh and Piedmont zone of Western Ghats.

## Laterite Soil

It the Latin word 'later' which means brick. It develops in areas with high temperature and heavy rainfall which results in intense leaching. These are made up of clay and gravel of red sand stone.

Characteristics: Red in colour. Poor in nitrogen, potash, organic matter (poor humus content). Lateritic soils are mostly deep to very deep, acidic (pH < 6.0).

But such soils can be made suitable for cultivation by adding manures and fertilizers. After adopting appropriate soil conservation techniques particularly in the hilly areas of Karnataka, Kerala and Tamil Nadu, this soil is very useful for growing tea and coffee.

Areas Occupied: Western Ghats region of Maharashtra, Odisha, some parts of West Bengal and North-east regions.

#### **Board Questions:**

1. Distinguish between Khadar soil and Bangar soils. (2011) 2. Trace the features of alluvial soil with reference to its formation, area, classification and containing minerals. (2015)

**3.** Describe any three main features of 'Alluvial soil' found in India. (2019)

## **Board Questions:**

1. Mention any three main features of 'Black soil. (2012, 15, 19) 2. Which geographical factors are responsible for evolution of black soil? Why is it considered the most suitable for growing cotton? (2012)

#### **Board Questions:**

1. Distinguish between red soil and laterite soil stating any three points of distinction. (2015)

### **Arid Soil**

Such sols are formed under the arid and semi-arid conditions. **Characteristics:** Red in brown in colour. Very low nitrogen and humous content. Sandy and saline in nature. Low moisture content. Due to high temperature evaporation rate is higher. In the lower horizons *Kankars* 

are found that restrict infiltration of water. Such soils are cultivatable under proper irrigation system. Indira Gandhi Canal has increased the cultivation area in the arid reasons of Western Rajasthan. **Areas Occupied:** Western Rajasthan.

### **Forest Soil**

These soils are formed due to the deposition of organic matter derived from the forest growth. **Characteristics:** Abundance of humus but acidic and low humus in snow covered areas. Soil textures varies from mountain to mountain. They are loamy and silty in valley sides and coarse grained in the upper slopes. **Areas Occupied:** hilly and mountainous areas where sufficient rain forests are available- Jammu & Kashmir, Uttarakhand, Himachal Pradesh and eastern hilly areas.

## **Soil Erosion:**

Wearing away, washing, washing down or removal of the top soil cover by natural agencies like water, wind, glacier is termed as soil erosion.

Soil formation and soil erosion go simultaneously in an almost balanced manner but this balance is disturbed because of human

activities like- deforestation, over-grazing, construction work and mining, defective methods of farming etc.

## **Types of Soil Erosion**

**Gully Erosion:** In areas of clayey soil, running water cuts through making deep channels called gullies. These are termed as 'bad lands' and are unfit for cultivation. Such bad lands are called 'ravines' in the Chambal Basin.

**Sheet Erosion:** When water flows down the slope as a sheet, the top soil is washed away. This is termed as sheet erosion.

**Wind erosion:** wind erosion is generally confined to arid and semi-arid areas with high temperature. Due to the removal of vegetation the top soil becomes extremely loose to be easily carried away by wind in large quantities.

## **Methods to Control Soil Erosion**

**Contour Ploughing:** This type of farming is practiced in the hilly areas. Ploughing is done along the contours to prevent water from running down the slopes.

**Strip Farming:** In strip cropping, large fields are divided into strips in between, grasses are left to grow which help in restricting the force of wind.

Terrace Cultivation: To restrict soil erosion, steps are cut on the slopes making terraces.

Board Questions:
1. Mention any three features of arid soil. (2014)
2. describe nay five different characteristics of 'Arid Soils'. (2015)

Board Questions:

1. Mention any two activities which are responsible for the process of soil erosion. Explain the two types of soil erosion mostly observed in India. (2012) **Shelter Belts:** To reduce the force of wind, lines of tress are planted to create shelter belts. It helps in checking wind erosion of soil.

Afforestation: It helps in checking soil erosions as well as improving environment and maintaining ecosystem.

Schemes of Government: Land reclamation schemes to convert ravines and bad lands into cultivable lands. Plugging gullies and leveling surface, control and afforestation are also included in govt. programs. Indira Gandhi Canal in Rajasthan has brought a lot of area under cultivation.

