

Natural Resources–Land, Water, Soil, Vegetation and Wildlife

Any living or non-living object or substance that has utility is known as a 'resource'. Resources can be classified into three categories as:

(i) Natural, (ii) Man-made and (iii) Human Resources.

Natural Resources

- These resources are drawn from nature and are used without much modification, such as air, water, types of soil, minerals, etc. They are classified into different groups depending upon their level of development and use, origin, renewability and distribution.
- On the basis of level of their development and use, natural resources can be classified into actual and potential resources.
 - (i) **Actual resources** are those resources whose quantity is known and are being used at present.
 - (ii) **Potential resources** are those resources whose entire quantity may not be known. These are not being used at present, but can be used in the future with advancement of knowledge and technology.
- On the basis of origin, natural resources can be classified into biotic and abiotic.
 - (i) **Biotic resources** includes all the living things like plants and animals.

(ii) **Abiotic resources** include non-living things like soil, rock and minerals.

- On the basis of renewability, natural resources can be classified into renewable and non-renewable.
 - (i) **Renewable resources** are those which can be renewed or replenished quickly, such as solar and wind energy.
 - (ii) **Non-renewable resources** are limited in quantity and, when exhausted, they may take thousands of years to be replenished, such as coal, petroleum and natural gas
- On the basis of distribution, natural resources can be classified into universal and localised.
 - (i) **Universal resources** are found everywhere on the Earth, like land, water and air.
 - (ii) **Localised resources** are found only at certain places, like iron ore or copper ore.

Major Natural Resources

1. Land

- Land covers about 30% of the total area of the Earth's surface. Ninety per cent of the world's population occupies only 30% of the land area. The densely populated areas of the world have plain topography and fertile river valleys suitable for agriculture.

- The remaining land is either sparsely populated or uninhabited due to various factors like climate, availability of water, fertility of soil, topography, etc.
- **Land use** refers to the use of land for different purpose such as agriculture, forestry, mining, building houses, roads and setting up of industries.
- Factors which affect land use are either physical factors or human factors. Physical factors include topography, soil, climate and availability of water. Human factors include population and technology.
- On the basis of ownership, land can be classified as private and community land. Private land is owned by an individual or members of a family and is used for personal purposes. Community land is owned by the community for common uses. Community lands are also called 'common property resources'.
- The demand for land by the people is growing but the availability of land is limited. Thus, vast changes in the land use pattern occur due to cultural changes in society.
- Land degradation, landslides, soil erosion and desertification are major threats to the environment because of the expansion of agriculture and construction activities.

2. Water

- Water is a vital renewable natural resource. Almost three-fourths of the Earth's surface is covered with water. That is why Earth is called the 'Blue planet'.
- Ocean water is saline and not fit for human consumption. However, fresh water is only 2.7% of the total water available. Further, only 30% of fresh water, found as ground water and in rivers, lakes, etc and water vapour in the air, is available and fit for use by humans. It is used for agriculture, industries, generation of electricity through reservoirs of dams, etc.
- The major causes of water shortage are increasing population rising demands for food and cash crops, increasing urbanisation and rising standards of living.

3. Soil

- Soil is the thin layer of grainy substance covering the surface of the Earth. It is made up of organic matter, minerals and weathered rocks found on Earth.
- Soil profile consists of the layered structures which spread down from the top soil surface to the parent rocks. Its layers are
 Top soil having humus and vegetation :
 Sub-soil with sand, silt and clay :
 Weathered rock material :
 Parent rock :
- The factors affecting soil formation are the nature of the parent rock , conditions of climate, topography, role of organic material and time taken for composition of soil formation.

4. Vegetation and Wildlife

- Natural vegetation and wildlife exist only in the biosphere, which is the narrow zone of contact between the lithosphere, hydrosphere and atmosphere.
- Natural vegetation refers to plant community which has grown naturally without human aid and has been left undisturbed by humans for a long time.
- India is a land of great variety of natural vegetation. It is one of the seventeen mega bio-diversity countries of the world. With about 47000 plant species, India occupies 10th place in world and 4th in Asia in plant diversity. Types of vegetation in India are

1. **Tropical evergreen and Semi Evergreen Forests** Western-slope of Western Ghats, hills of the North-Eastern region, Andaman and Nicobar Islands.
 - Height of trees is 40 to 60 m and leaves are dark green and broad.
2. **Tropical Deciduous Forests** Divided into (a) Moist deciduous forest and (b) Dry deciduous forest.
 - Most widespread forests in India and also called 'monsoon forests'.
 - Found in North-East states along the foothills of Himalayas, Eastern slopes of Western Ghats, Odisha, rainier areas of the Peninsula and plains of U.P and Bihar.

3. **Tropical Thorn Forests** Occur in areas which receive rainfall less than 50 cm and consists of variety of grasses and shrubs.
 - Found in semiarid areas of South-West, Punjab, Haryana, Rajasthan, Gujarat, M.P. and U.P.
4. **Mountain Forests** Mountain forests are classified into : (a) Northern mountain forest and (b) Southern mountain forests.
 - Found in Himalayas, hilly areas of Uttarakhand, West Bengal, Western Ghats, Vindhyas and Nilgiris.
5. **Littoral and Swamp Forests** (Mangrove forests) Found in wetlands of country. Mangrove Forest in India comprises 7% of the world's Mangrove forests.

Wildlife

- It includes animals, birds, insects as well as the aquatic life forms. They provide us a number of products, such as milk, meat, hides and wool. Insects like bees provide us honey, help in pollination of flowers and have an important role to play as decomposers in the ecosystem.
- Due to the changes in climate and human interference, many species have become vulnerable or endangered and some are on the verge of extinction. National parks, wildlife sanctuaries biosphere reserves are made to protect our natural vegetation and wildlife.
- **National Park** A National park is a reserved area of land, owned by the government. This area is protected from human exploitation, industrialisation and pollution.

- **Wildlife Sanctuaries** A natural area, which is reserved by a governmental or private agency for the protection of particular species of animals during part of all of the year. This area is designated for the protection of wild animals, within which hunting and fishing is either prohibited or strictly controlled.
- **Biosphere Reserves** It is an area which is set aside for the conservation of the resources of the biosphere and to serve as sites for long-term scientific research as well as education all over the world.

Birds	Great Indian Bustard, Forest Owlet, Vulture, Bengal Florican, Himalayan Quaii, Siberian Crane
Mammals	Flying Squirrel, Red Panda, Pygmy Hog, Kondana Rat, Snow Leopard, Asiatic Lion
Reptiles	Gharial, Hawksbill Turtle, River Terrapin, Sispara Day Gecko
Amphibians	Flying Frog, Tiger, Toad

Project	Year
Project Hangul	1970
Project Gir	1972
Project Tiger	1973
Project Olive Riddey Turtles	1975
Crocodile Breeding Scheme	1975
Project Manipur Thamin	1977
Project Rhino	1987
Project Elephant	1992
Project Red Panda	1996
Project Vulture	2006
Project Snow Leopard	2009



Practice Exercise

1. Which one of the following is the example of the natural resource?
(a) Water (b) Road
(c) Bus (d) School
2. Which one of the following is the renewable resource?
(a) Coal (b) Petroleum
(c) Natural gas (d) Solar energy
3. Which one of the following is the example of universal resources (which is available universally)?
(a) Iron (b) Copper
(c) Cement (d) Air
4. How many parts of the Earth's surface is covered by the land?
(a) 30% (b) 50% (c) 60% (d) 70%
5. On the basis of level of their development and use, resources can be classified into actual and resources.
(a) potential (b) biotic
(c) abiotic (d) localised
6. The resources which are found only at certain places are known as
(a) Universal (b) Localised
(c) Actual (d) Potential
7. Which amongst the following is not a physical factor that affects land use?
(a) Topography (b) Climate
(c) Availability of water (d) Literacy
8. What per cent of Earth's total water is fresh water?
(a) 2% (b) 2.7% (c) 3% (d) 10%
9. Which of the following is not the major cause of water shortage?
(a) Increasing population
(b) Increasing urbanisation
(c) Acid rain
(d) Rising standard of living
10. Soil is made up of organic matter, minerals and found on Earth.
(a) weathered rock (b) humus
(c) biodegradable matter (d) heat
11. The rock which determines the colour, texture, chemical properties, minerals and permeability of the soil is known as
(a) Chemical Rock (b) Parent Rock
(c) Weathered Rock (d) Igneous Rock
12. What determines the thickness of the soil profile?
(a) Time (b) Day
(c) Heat (d) Humus
13. The plant community which has grown naturally without human aid is called
(a) Forest (b) Crops
(c) Natural vegetation (d) Plants
14. Which type of forest in India are also called 'monsoon forests'?
(a) Tropical Deciduous Forests
(b) Mountain Forests
(c) Tropical Evergreen Forests
(d) Swamp Forests
15. According to the India State of Forest Report (ISFR) 2015, the total forest and tree cover in India is
(a) 24% (b) 24.16% (c) 23% (d) 21.3%

Answers

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