# LAND, SOIL, WATER, NATURAL VEGETATION & WILD LIFE

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# LAND RESOURCES

Land is an important component of natural resources. It is not evenly distributed all around the world. Differences are fuuudiu in its use and levels of development, all around the world, depending upon the factors like-relief, climate'and population distribution, etc. Their misuse can endanger survival of humanity.

# FACTORS AFFECTING LAND USE

1. Physical Features : Relief features like mountains, plateaus, river, slope of the land etc., influence forest cover, human habitation and hence put a limit on land use.

2. Types of Rocks : Types of rocks like sedimentary, igneous and metamorphic rocks, affect availability of minerals and soils, etc., in an area. Soils are also made from weathering or breakdown of rocks. Therefore, rocks influence the type and degree of land use.

3. Slope : Humans have, generally preferred gentle slopes for habitation as well as agriculture. Steep slopes are not favourable for agriculture or construction of houses as such. Further, on steep slopes soil erosion occurs rapidly.

4. Ciamate : Climate is an important factor determining land use. It affects crop growth, habitation by animals and humans. Cold areas of Tundra region, or extremely hot and and climates of deserts are unsuitable for human habitation.

5. Human Needs : Human needs like construction of roads, railways, ,communication lines, land cultivation, overcoming climate barriers, economic well-being and technology also determine land use. People inhabit in less numbers in the snow bourrcvarea! of Siberia,'or deep inside the deserts, like Sahara.

6. Private vs. Community : Land can also be divided on the basis of Private land an ommunity land. Private land is owned by individuals whereas, community land is owned by the community. Tor common uses like collection of fodder, fruits, nuts, etc. It is also called common group resource.

Table : Land Use Pattern in Selected Countries					
Countries	Percentage of area in				
	Crop land	Pasture land	Forest land	Other uses	
Australia	6	56	14	24	
Brazil	9	20	66	5	
Canada	5	4	39	52	
China	10	-34	14	. 42	
France	35	21	27	17	
India	57	4	22	17	
Japan	12	2	67	19	
Russia	8	5	44	44	
UK	29	46	10	16	
USA	21	26	32	21	
World	11	26	31	32	

# LAND DEGRADATION

Land degradation takes place due to the following reasons:

1. Change in Landforms: Man has the ability to ground high hills or fill up deep depressions. Dams across rivers, mining and construction of houses, bridges and roads affect landforms directly.



#### HOW CAN WE CONSERVE SOIL?

Chief types of soil conservation methods are as follows :

- 1. Afforestation : The humus in soil is a substance obtained from plant and animal remains. Therefore, planting of trees, shrubs and grasses provides base for forming humus.
- 2. Farming Techniques : Soil conservation friendly farming techniques include contour ploughing, strip cropping, terracing and other techniques. Strip cropping means, planting of alternate rows of different kinds of crops instead of leaving the land fallow. In Contour ploughing farmers plough across a slope along the line of the field in circular manner. In terracing, wide flat rows are made in step-like manner. The terraces hold rain water and prevent soil from getting washed down the slope. The other techniques include mulching, contour barriers, rock dam, intercropping and shelter belts.
- Mulching : It is the covering of bare ground between plants, with a layer of organic matter like straw, to retain soil moisture.
- ▲ Contour Barriers: It is the using of stone, grass, soil to build barriers along contours.
- In Rock Dam : Rocks are piled up to slow down flow of water. It prevents gullies and further soil erosion.
- ▲ In Intercropping : Different crops are grown in alternate rows and are sown at different times to protect the soil from rain wash.
- In Shelter Belts : Rows of trees are planted in coastal and dry regions, to check the wind movement and to protect soil cover.

# HYDROLOGI CAL CYCLE

The three atmospheric processes evaporation, condensation and precipitation, involved in the hydrological cycle cause water to be made available globally. For this reason, water is even called a renewable resource,

The distribution of water on Earth is as follows :

- Freshwater : The water made available on Earth by the operation of hydrological cycle is termed as fresh water. It accounts for just 1 percent of the total water available on Earth.
- ▲ Ice Caps : Total water made available on Earth, in the process of hydrological cycle is 2% of this.
- Water in Atmosphere : Only tiny fraction (0.001 per cent) of water is found in gaseous form (vapour) in atmosphere.
- Water in Oceans : 97 per cent of water is found in oceans, seas and salt water lakes. It covers about 71 per cent of Earth's surface.

On planet Earth, water is found in all three gaseous, liquid and solid forms.

# Do You Know?

97 Percent of all water is found in oceans, 2 percent is in the form of ice caps, glaciers and 1 percent (fresh water) in lakes, river, etc.

# FRESH WATER

Since water came to be found on Earth, its total volume has remained the same. The quantity of water on1y change in its three states. For example, during the Ice Ages more water was found in solid state in the form of glaciers and ice caps. Fresh water, as we have seen above.

# DI STRI BUTI ON OF FRESH WATER

Like all other natural resources, water is also unevenly distributed over Earth. This distribution is generally governed by climate. Hence, the areas of more precipitation have surplus water, whereas the areas of deficit rainfall have water shortages.

As a result, world's hottest deserts exist in this region. These hot deserts include Sahara and Arabian desert along with Sind, of which Thar in India is its eastern extension.

#### **RECYCLING**

Water is a renewable resource. Recycling of water, if done at the source of contamination, is the best way of removing impurities, according to needs

# (B) DECI DUOUS FORESTS

The deciduous trees shed their leaves in a particular season. There is also a great variety of animals in. these forests. These forests provide habitat to a variety of plant and animals species. Human settlements are also found more around deciduous forests than the evergreen forests.

#### 2. GRASSLANDS

Grasslands are significant habitats of a great variety and a grate diversity of animal life. The grassland are located in main latitudinal zones-tropical and temperate.

# 3. SEMI - DESERTS AND DESERTS

There are two types of deserts : Semi-deserts and deserts. Both categories include hot and cold deserts. (a) Semi-Deserts : These have thorny bushes and shrubs and are found in hot semi-deserts or semi-arid areas.

(b) Deserts : As mentioned earlier there are no absolute deserts.. Hot deserts like that of Sahara and Arabia and cold deserts like that of Gobi and Ladakh are characterised by plants of low growth and organisms living below the ground.

#### HOW CAN WE CONSERVE THE ECOSYSTM?

#### CONSERVATION

The government and the United Nations have passed laws against deforestation and killing of animals. Laws have also been passed to control pollution. Biosphere reserves, national parks and wildlife sanctuaries have also been set up. All these efforts are still very inadequate. Human impact on natural environment is felt through a number of ways.

To prevent alternations and modifications of ecosystem, many-more, measures are needed. Otherwise, disturbances in balances would have serious consequences.

#### Do You Know?

Forests account for only 22% land, while the required land is 33% for survival of flora and founa and mankind.

# FORESTS AND WILDLIFE RESOURCES

Earth's natural environment is different from the natural environment of other planets due to the presence, of forests and wildlife on it. One unique feature of the Earth is the structure and functioning of forest ecosystems, which is broadly uniform throughout the world.

#### Do You Know?

Biodiversity is the variety of flora and fanna found in an area. India has nearly 8 per cent of the total number of species, in the world. India is one of the 17 mega diverse countries which possess about 70 percent of the world's diversity.

#### DECLINING WILDLIFE

There was an abundance of wildlife in India before British established their rule here. With coming of the British rule and increase in the number of firearms, indiscriminate hunting. Due to the rise of population, there has been a demand for land, leading to a clash between wildlife and humans. The wildlife was the obvious loser and some wild animals even became extinct. Today 77 mammals, 21 reptiles, 40 species of birds and 3 amphibians are threatened with extinction. Tiger, Iion, thamin of Manipur and hangul of Jammu and Kashmir, wildass of Kachchh, snow leopard, etc., are in the endangered list of wild animals.

Not only wild animals, but wildplants are also facing the threat of extinction. About 450 plant species are known to be endangered, threatened or rate.

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	Exercise - I UN	SOLVED PROBLEMS		
1.	Mention any two factors which influence land use.	26. What do you understand by Biodiversity?		
2.	What is land degradation?	27. Define food chain.		
3.	What is deforestation?	28. Describe the distribution of water resources.		
4.	Mention any two causes of land degradation.	29. How can we conserve forests?		
5.	How is soil formed?	30. What is Project Tiger?		
6.	How is soil erosion caused?	31. Describe the causes of land degradation. How can		
7.	What is soil?	we prevent it?		
8.	What is hydrological cycle?	32. What are the various methods of conservation		
9.	How can we conserve water resources?	of soils.,		
10	. What is natural vegetation?	ecosystem.		
11	. What was Rio de Janeiro Summit?	34. Describe the process of water conservation.		
12	. What are evergreen forests?	35. Write an essay on conservation of forest.		
13	. What are deciduous forests?	24 Describe the store token for preservation of wild		
14	. What are the three types of forest resources?	in India.		
15	. What are the endangered species of animals?	37. Afforestation and Deforestation.		
16	. Wyatt is extinct species of animals?	38. Land Degradation and Land Conservation.		
17	. What is land resource?	39. Tropical Evergreen forests and Deciduous forests		
18	. Name the factors that affect soil formation.	40 Flora Forest and Vegetation		
19	. What is conservation? Describe its various	41 Endangered and Extinct Species		
	degradation in India.			
20	. Name the two major ecosystems of the Earth.	1 Which one the two main climatic factors		
21	. Into which two kingdoms are all organisms divided?	responsible for soil formation?		
22	. Why are tall trees in forests regarded as representative of form of vegetation of a region?	2. Write any two reasons for land degradation today.		
23	. How do humans affect other lifeforms?	3. Why is land considered an important resource?		
24	. Which are the two types of evergreen forests?	4. Name any two steps that government has taken		
25	. Name the different grassland ecosystems of the world.	5. Suggest three ways to conserve water		