

Lesson at a Glance

- The quality of land, soil, water, natural vegetation, animals, and the usage of technology are important factors in controlling the standard and way of life people lead at a particular place.
- **Land** covers just about 30% of the surface of the earth. It is not suitable for living everywhere, because of a lot of additional conditions that affect life. Parts of land not suitable for living are said to be **inhabitable** while the ones where people live are said to be **habitable**.
- Some factors affecting the **habitability** of a place are topography, height from sea level, climate, fertility of soil, vegetation, etc. People cannot live in dense forests or in deserts. They cannot live on high slopes in mountainous areas, or in low-lying areas where there is possibility of floods and waterlogging. **Plains and river valleys** are the places where agriculture is suited, so most of the world population lives in such areas, and these areas are heavily populated.
- The purpose and way in which land is used is called **land use**. Land use may be for agriculture, forestry, mining, building houses, roads, setting up of industries, or various other purposes.
- Factors determining the land use include **physical factors** like topography, availability of water, climate, minerals, soil, etc, or **human factors** like demography (population pattern), technology and education.
- Land usually has ownership. It may be **private land** or **community land**. Private land is owned by an individual or group of individuals, like a house is private land. Community land is meant for use by anyone in the society, like land for collection of fodder, fruits, etc. Community lands are also called **common property resources**.
- Since population is always growing at a fast pace, the demand for land is increasing, whereas the availability of land is limited.
- Land degradation, landslides, soil erosion, desertification are major threats to the environment.

- Due to the huge demand for land, people have also started reducing forest cover in order to make them habitable. This has resulted into **deforestation**. **Afforestation** (growing trees), regulated use of chemical pesticide and checking overgrazing by animals are some general methods to conserve these valuable natural resources.
- The word **soil** refers to the thin layer of grainy substance covering the surface of the earth. This layer is made of organic matter, minerals and weathered rocks. The long process of **weathering** is responsible for the formation of soil.
- **Weathering** refers to the breaking up and decay of exposed rocks. This breaking up and decay is caused by temperature fluctuations, frost action, plants, animals and even human activity. Due to weathering, in thousands of years, soil is formed.
- The nature of the **parent rock** and **climatic factors** are major factors of soil formation. Other factors include topography, role of organic material and time taken for the composition of soil formation.
- **Soil erosion** and **depletion** pose major threats to the quality and resourcefulness of soil. Degradation takes place by both human and natural factors. Deforestation, overgrazing, overuse of chemical fertilisers or pesticides, rain wash, landslides and floods lead to degradation of soil.
- **Mulching** is the process of covering the bare ground between plants with a layer of organic matter like straw. This helps in retaining soil moisture.
- Farmers use stones, grass and soil to build barriers along contours. Trenches are made in front of them to collect water.
- **Terrace farming** is the method of farming in which broad flat steps or terraces are made on the steep slopes so that flat surfaces are available to grow crops. This helps in controlling soil erosion.
- In **intercropping**, different crops are grown in alternate rows and are sown at different times to protect the soil from being washed away by rain.
- Ploughing parallel to the contours of a hill slope to form a natural barrier for water to flow down a slope is called **contour ploughing**.
- Rows of trees are planted in certain areas to check wind movement. Such rows are called **shelter belts**. These trees are supposed to bind the soil, thus preventing them from being eroded away easily.

- **Water** covers about 75% of the surface of the earth. Therefore the earth is called the water planet. Ocean water is saline and not fit for human consumption. Fresh water is just about 2.7% of the total water. So fresh water is very scarce.
- We use water for a lot of purposes. Life is impossible without water.
- Water shortage is a common problem in many parts of the world. It may be a consequence of variation in rain patterns or contamination of water sources.
- Steps need to be taken to conserve water. Water is renewable, but its overuse and pollution make it unfit for use. Sewage, industrial waste, chemicals, etc pollute water with nitrates, metals and pesticides.
- **Natural vegetation** and **wildlife** exist in the biosphere. The supporting and interdependent life-system that exists in the biosphere is called **ecosystem**.
- Plants provide us with a number of important products, shelter to animals, liberate oxygen which supports life, protects soil and give us much of our food.
- Animals, birds and insects (wildlife) are also helpful in a lot of ways. Insects like bees provide us honey and a bird like the vulture cleanses the environment by feeding on dead livestock.
- Vegetation depends on temperature and moisture of a region. Forests, grasslands, scrubs and tundra are major vegetation types across the world.
- Heavy rainfall supports huge trees. Low moisture means less dense forests and smaller trees. In deserts, we have thorny shrubs and scrubs.
- Forests are classified as **evergreen** and **deciduous**. The first type never shed their leaves, but the second type shed their leaves at a particular time of the year. Both these types are further classified into **temperate** and **tropical** based on their location.
- There are huge concerns about conservation of these important resources. We must contribute to this. **Natural parks, wildlife sanctuaries** and **biosphere reserves** are ways to protect vegetation and wildlife.
- **Conservation** of plants and animals is a moral duty of every human being.

■ TEXTBOOK QUESTIONS SOLVED ■

In-text Questions

Table 2.1. Land use in selected countries

Countries	Percentage of area in			
	Cropland	Pasture	Forest	Other Use
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

Study the table given on page 10 of the Textbook and answer the following:

- Name the countries having the highest percentage of land under cropland, forest, pasture and other uses.
- How would you relate the land use patterns of these countries with the probable economic activities?

Ans. (i) The countries with the highest use of land under cropland, forest, pasture and other uses are as under:

Cropland: India (57%)

Forest: Japan (67%)

Pasture: Australia (56%)

Other Uses: Canada (52%)

- The land use pattern of these areas affects the economic activities of these countries in the sense that people and their demands are ever growing but availability of land is limited. Similarly the quality of land is also different from one place to the other. Consequently the common lands are

being encroached by people for the purpose of building up commercial areas, and housing complexes in the urban areas. It is also done in the rural areas in order to expand the agricultural land. It also affects the social culture.

9. 1. Answer the following questions.

- Which are the two main climatic factors responsible for soil formation?
- Write any two reasons for land degradation today.
- Why is land considered an important resource?
- Name any two steps that government has taken to conserve plants and animals.
- Suggest three ways to conserve water.

Ans. (i) Temperature and rainfall are two main climatic factors responsible for soil formation. Rainfall contributes in breaking the rocks by applying pressure. Temperature fluctuations between hot and cold also form cracks in the rocks.

(ii) Reasons for land degradation are:

- Ever growing demand of the growing population
- Destruction of forest cover

(iii) Land is an important resource because it provides surface for agriculture, living, forestry, industries, construction, etc. Most activities take place on land.

(iv) Steps taken by the government include establishment of natural parks and wildlife sanctuaries in different parts of India. Their purpose is conservation of vegetation and wildlife, respectively.

(v) Three ways to conserve water are as under:

- Rainwater harvesting: It is a method of collecting water while it rains so that it may come of use in the future.
- The canals used for irrigation should be properly built so that loss of water does not take place while the water is transported to the field.
- In dry regions, drip or trickle irrigation is suggested.

9. 2. Tick the correct answer.

(i) Which one of the following is NOT a factor of soil formation?

- (a) time (b) soil texture
(c) organic matter

(ii) Which one of the following methods is most appropriate to check soil erosion on steep slopes?

- (a) shelter belts (b) mulching
(c) terrace cultivation

(iii) Which one of the following is NOT in favour of the conservation of nature?

- (a) switch off the bulb when not in use
(b) close the tap immediately after using
(c) dispose polypacks after shopping

Ans. (i) (b), (ii) (c), (iii) (c).

9. 3. Match the followings:

- (i) Land use (a) prevent soil erosion
(ii) Humus (b) land suitable for agriculture
(iii) Rock dams (c) productive use of land
(iv) Arable land (d) organic matter deposited on top soil
(e) contour ploughing

Ans. (i) (c), (ii) (d), (iii) (a), (iv) (b).

9. 4. State whether the given statement is true or false. If true, write the reasons.

- (i) Ganga-Brahmaputra plain of India is an overpopulated region.
(ii) Water availability per person in India is declining.
(iii) Rows of trees planted in the coastal areas to check the wind movement is called intercropping.
(iv) Human interference and changes of climate can maintain the ecosystem.

Ans. (i) True, (ii) True, (iii) False, (iv) True.

9. 5. Activity

Discuss some more reasons which are responsible for changes of land use pattern. Has your place undergone any change in the land use pattern in recent years?

Find out from your parents and elderly people. You can conduct an interview by making the following questions.

Place	When your grandparents' were in their 30's	When your parents were in their 30's	Why do you think this is happening?	Are common areas and open spaces disappearing?
Rural				
Number of cattle and poultry owned				
Number of trees and ponds in the village				
Main occupation of the head of the family				
Urban				
Number of cars owned				
Number of rooms in the house				
Number of metalled roads				
Number of flyovers in the city				
Number of parks and playgrounds				

Based on the table you have just completed, draw a picture of land use patterns that you foresee in your neighbourhood after 20 years. Why do you think that land use patterns change over the years?

Ans. Attempt yourself.