



Resources are the foundation of economic growth and development of human society. Our needs can be satisfied through resources. Many elements in nature can be seen while observing the surroundings but they cannot be called resources. When these elements are used by human skills to satisfy their needs, they are called resources. Resources satisfy human need or desire. Utility is a characteristic of a resource.

Iron and other metals or crude oil were not a resource when man did not have the ability to dig or refine minerals in earlier times but they have become a resource since man has been digging these minerals to satisfy his needs. Wind is an important resource in the present time due to the development of power generation technology with the help of windmills. With the development of science and technology, many elements in nature will become a resource in future.

Activity

- Think and say, which resources do you use in your daily routine.
- Think and say, which resources are used in your classroom.

Types of Resources

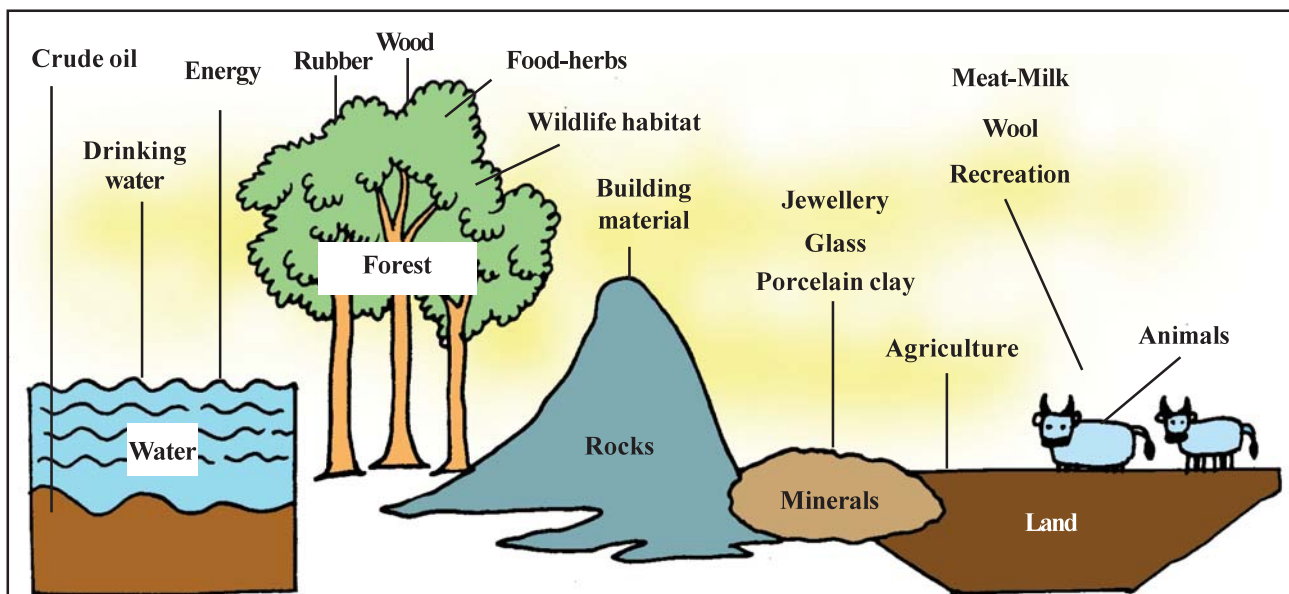
Resources are classified into two types on the basis of their formation :

- (1) Natural Resources
- (2) Human-made Resources

Natural Resources

A resource that is obtained directly from nature, which can be used without much processing, is a natural resource. Air, water, land, minerals and energy resources are natural resources. All these resources are a gift to us by nature. All the elements in the environment that are suitable for human use are natural resources.

Natural resources are classified on the basis of their renewability and distribution.



Sources of Natural Resources

Know This

- Crude oil is not inexhaustible in the earth's crust, it is going to exhaust one day.
- Crude oil prices continue to rise. As a result of it, prices of all commodities increase.
- Earth's temperature is constantly rising due to extensive consumption of coal and petroleum products.
- More than 85 per cent of the vehicles that use petrol as fuel emit carbon monoxide gas and more than 90 per cent of the vehicles that run on diesel produce nitrous oxide.
- Compressed Natural Gas (C.N.G.) consumption reduces pollution.
- Use of battery powered vehicles will increase in the future.
- Manufacturing of vehicles running with solar energy has started.

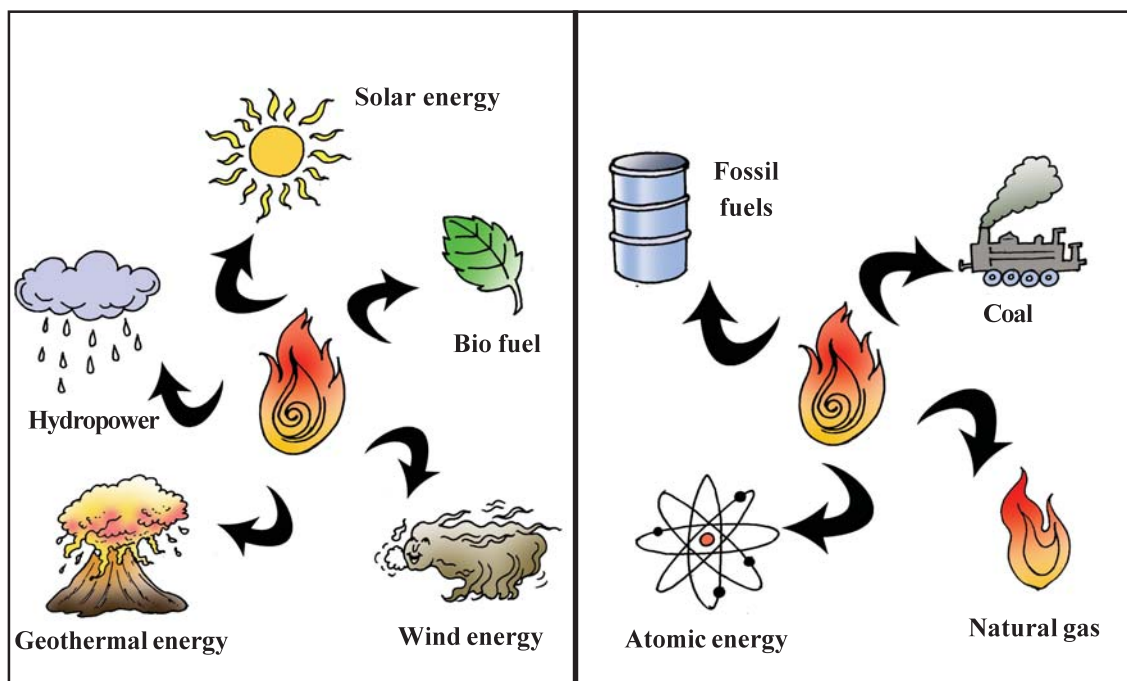
Availability and diversity of resources is uneven on the earth. Thus, depending on the distribution or source of resources, scholars classify the types of resources as follows :

- (1) **Ubiquitous Resources** : This type of resources are available everywhere. Example : Gases which are useful for the living beings, are present in the atmosphere like Oxygen and Nitrogen
- (2) **Common Resources** : Generally such resources are readily available to us. Example : water, pasture land.
- (3) **Rare Resources** : These resources are available to us from limited places. Example: coal, various metals, mineral oil, natural gas, uranium.
- (4) **Uniquities Resources** : Minerals rarely found in one or two places all over the world are known as Solitary resources. Example: Cryolite from Greenland, Europe.

Moreover, there are two types of resources, renewable and non-renewable.

Renewable Resource	Non-renewable resource
Meaning - Automatically replenish the quantity used in a specific time period or is inexhaustible.	Meaning - Once used, it is impossible to get it renewed in the near future.
E.g. Forests, animals and birds, sunlight, wind	E.g. Coal, Crude oil, natural gas, nuclear minerals





Inexhaustible Resources

Exhaustible Resources

Human made Resources

Any natural element that is processed by human efforts and modified to make it usable is called a Human made resource.

When cement is made by properly processing the naturally obtained elements like lime, gypsum etc., it is called a human-made resource. Other examples of Human made resources are electricity, buildings, roads, bridges, tunnels, technology etc.

Humans also change the surface of the earth to suit their own needs. They use terrace farming in the mountainous regions for agricultural development and make multi-purpose projects in river valley. Thus, the list of human made resources is long.

Human Resources

Man himself is a powerful resource. He uses various elements of nature as a resource through his own knowledge and skills. He is both the creator and the user of the resources. Using his intellect, he selects the best element available in the nature. We can make maximum use of natural resources only when we have the skills, abilities, knowledge or technology. Education and health services make man a special resource. This process of making human a resource is called human resource development.

Natural Resources

Land

Land is at the forefront of all resources in terms of utility. About 29 per cent of the total area of the earth's surface is occupied by land. This proportion seems small compared to the area of the whole earth, but some of these parts are not suitable for human habitation. Population density is affected by the varied characteristics of land and climate in the world. Areas that are suitable for human habitation are densely populated. Conversely, desert areas, dense forests and mountainous areas are sparsely populated or uninhabited.

Think and Say

- The Gangetic plains are densely populated, whereas population density is low in Sahara desert. Why ?

Along with agriculture, minerals and forests, land is also useful to us in many ways for the development of roads and industries. With the growing population, our needs are also constantly increasing, against which the land is extremely limited.

Land scarcity has become a major problem today. As a result, the activity of building houses in cities and increasing arable land in villages have created many environmental threats. Man has deforested land to meet his needs.

Think and Say

- Discuss the effects of deforestation in classroom.
- Why is the number of high-rise buildings increasing in the metrocities of the world.

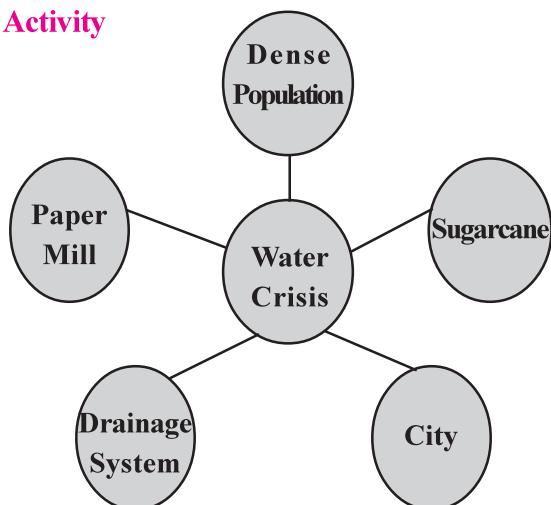
Water

‘Water is life’, the saying itself implies that water is the base of all living things. It means water is vital renewable natural resource. Earth’s surface show that there is water on almost three fourths part and land on only one fourths part. In a way, the total amount of water is very high. But the water in the seas and oceans is saline. While the amount of fresh water that is useful is negligible i.e. only 2.7 per cent. A large part of this water is in the form of ice sheets and glaciers in mountain peaks, Antarctica and Arctic regions. Out of total water, only 1 per cent of fresh water is available as groundwater, rivers, lakes or springs. This amount is used for our needs such as irrigation for agriculture, drinking, household and industries. Hydroelectricity can be generated by constructing dams on rivers.

Today there is scarcity of drinking water in many regions of the world, including South America, Most of Africa, the Middle East Asia, Australia, etc. In India, Saurashtra in Gujarat, Kutch, North Gujarat, Jaisalmer and Barmer districts of Rajasthan, the central highlands of the Southern Peninsula etc., experience

scarcity of drinking water in summer. Periodic shortage or droughts occur in these areas. Factors like population explosion, increase in cultivation of cash crops, modern lifestyle, urbanisation, industries, deforestation are mainly responsible for water crisis.

Activity



Keeping in mind the above points, make a note of 'Water Crisis'.

Activity

Make a list of the effects of drought.

Natural Vegetation and Wildlife

Self-growing vegetation, include creepers, shrubs and trees, are called a natural vegetation. They are found in different shapes, forms and altitude and in various geographical conditions. A large area covered with trees



and shrubs is commonly called a forest. The proportion of natural vegetation is a distinguished feature. Diversity in the structure and form of natural vegetation is observed due to variation in the altitude from the sea level and climate. Experts have classified vegetation accordingly.

In an ecosystem, any organism on this basis survives by interacting with another organism. Vegetation fulfills many of our needs. It also provides habitat and food to the fauna. Forests satisfy many of our diverse needs such as the balance of oxygen and carbon dioxide in the atmosphere, timber and fuel wood, prevention of soil erosion, groundwater conservation, various fruits, herbs, edible gum, raw materials for industries etc.

Various animals, birds, insects are part of the wildlife. We get meat, leather, fur, wool etc. Insects like bees give us honey and play an important role in the pollination of flowers. Birds control a number of insects by eating them. Every organism, large and small, has a unique role to play in the ecosystem.

Think and Say

- If there are no pests, agricultural production will decrease.
- Have you seen a field being ploughed? Why do the birds gather behind the plough or tractor?
- If the number of birds decrease, what will be the effects on cultivation?

In the last two hundred years, human beings have been cutting forests to fulfill their greed for land. As a result, forest cover is declining constantly. This poses a serious threat to valuable forest resources in the near future. Because of deforestation, along with threat to existence of wildlife, climate change is also experienced.

Activity

- With the help of elders or teachers, make a list of recent climate changes.

Many species of trees and wildlife are extinct or on the verge of extinction. This serious condition is the result of human intervention in nature. Human lust for horns, teeth, skin, fur, bones etc., and reckless hunting have drastically reduced the number of wildlife in the forests.

Know This

- The number of vultures has dropped drastically.
- The 'Ghorad', Bustard which was once seen in Kutch district, is presently left in very less number.

Conservation of Resources

Resources are important for human life. Our life is unimaginable without them. With the growing population and the extraordinary development of technology, the use of resources is increasing day by day. In this situation some resources are on the verge of getting over. Human progress and modern lifestyle will be unable to survive in the absence of resources. One should think about the future situation. Resources should be used in a planned and judicious manner.



Activity

- With the help of the elders, make a list of the animals, birds and trees that were seen in your area in the past, but are rare or are not seen in the present.

Measures of Resource Conservation

- Prevent soil erosion as it reduces fertility.
- The use of chemical fertilizers lowers soil quality in the long run. So use it wisely and use natural manure instead.
- Excessive irrigation reduces the productivity of the soil. So increase drip irrigation.
- Pesticides pollute soil and water resources. Encourage the use of bio-pesticides as an alternative.
- Wildlife is important for ecological balance, so stringent laws should be enacted to prevent hunting.
- Take special measures to prevent pastures and deforestation in forest areas.
- Water scarcity can be prevented by rain water harvesting.
- By removing silt deposited in ponds or lakes and deepening them will increase water storage.
- The problem of water for agriculture can be solved by constructing check dams to stop rain water.
- Use recycled water.
- Household expenses can be saved by using used water from the house for kitchen garden and growing fresh vegetables.
- The energy resources will be scarce in the future, so alternatives such as solar energy, wind energy, tidal energy etc. will have to be considered from now onwards.
- The resources that can be used again, must be reused. Resources that are non-renewable should be replaced with other alternatives.

It is the duty of all of us to conserve resources for the needs of future generations.

Think and Say

- What will happen if resources become scarce ?
- A pond near a village or town used to get filled with rainwater. After a few years, it was completely filled with dumping of village waste. So, now what must be the situation there every monsoon ?

Exercise

1. Write the answers of the following questions in one sentence :

- (1) What is a natural vegetation ?
- (2) Which animals are included in wildlife ?
- (3) On what basis are natural vegetation classified ?
- (4) What should be done to increase the water storage capacity of lakes and ponds ?



2. Answer the following questions :

- (1) Describe the types of resources based on their distribution.
- (2) Distinguish : Renewable Resources and Non-renewable Resources.
- (3) Write a short note about human-resource.
- (4) What are the main factors responsible for water crisis ?
- (5) What is an ecosystem ? Explain in detail.
- (6) 'Forests are very useful to us.' - Explain the statement.
- (7) State the measures for conservation of resources.
- (8) 'It is the duty of all of us to conserve resources.' - Explain the statement.

3. Find and write the correct option from the following options :

- (1) Long term use of chemical fertilizers
 - (A) Reduces soil quality
 - (B) Increases soil moisture storage capacity
 - (C) Improves soil quality
 - (D) Makes the soil soft
- (2) Which of the following resources is non-renewable ?
 - (A) Forest
 - (B) Coal
 - (C) Wind
 - (D) Sunlight
- (3) Which of the following is a rare resource ?
 - (A) Water
 - (B) Crude oil
 - (C) Oxygen
 - (D) Cryolite

Think and Write

- (1) Complaints are heard that the temperature is increasing every summer. What are the causes of this problem in your view.
- (2) Explain what you can do by using solar energy.

Get more information about this lesson from the following websites with the help and guidance of your teacher or elder:

www.nationalgeographic.org

www.ongcindia.com

www.gmdcltd.com

