




Anything that can be used to satisfy a need is a resource. For example, we have air to breathe from the atmosphere, water to drink from the hydrosphere, food to eat from the biosphere and stones for making houses and minerals for various needs from the lithosphere.

When we prepare a tasty snack from fresh vegetables, they are a resource. When you use electricity to light a bulb or operate a fan, it is a resource. Thus, usability or utility of a thing for us makes it a resource. Its use or utility gives it a value. Value may be economic, social, political or just aesthetic (related to beauty of a thing or scene). Our utensils and parts of furniture, vehicles, etc. are made of metals. Therefore, metal has an economic **value**, i.e., it is obtained for money. We can see a beautiful landscape and enjoy the scene without paying any money. The scene does not have an economic value but it satisfies human need. If you purchase a ticket to visit a zoo, it has an economic value too.

**Time and technology** are two of the factors that can change a substance into resources. A home remedy might have no economic value years before. But sold as a medicine in tablet or capsule form today it has an economic value. Cinchona obtained from the forest was almost free. But quinine tablet made from cinchona has an economic value. Pre-historic man did not know the use of coal. But to modern man it is a resource. It is used directly as a fuel and after being processed many kinds of chemicals, synthetic fibres, medicines etc. Thus, time and application of the knowledge gave it an economic value. Application of knowledge and skill in doing or making things is called **technology**.

People themselves are the most important resources because by developing human skills, other humans can be benefitted and new resources can be developed. It is their ideas, knowledge, discoveries and inventions that lead to the creation of more resources. For example, the energy in fast flowing water is changed into hydroelectricity. Thus, the energy of the fast flowing water has become a resource for mankind.



A single thing can be put to various uses. For example, a piece of stone picked up from the garden can be used as a tool to crush spices, as a toy to play, as a weapon in a catapult, etc.

## Types of Resources

Resources are broadly classified as natural resources, human made resources and human resources.

### Natural Resources



Natural Resources

Air, sunshine, water, rocks, minerals, soils, vegetation and animals are provided by nature and are useful to humans. Resources that are drawn from nature and used without much modification are known as natural resources. Many of these are obtained free and can be used directly like air, sunshine and water. In some cases tools and technology are required to use a natural resource in a better way.

Natural resources can be further classified on the basis of their (i) level or stage of development and use, (ii) origin, (iii) stock (iv) distribution.

#### I. Based on Stage of Development and Use

On the basis of their stage of development, resources can be classified into actual and potential resources which are being used at present and whose quantity is determined are called **actual resources**. For example, black soil of Deccan plateau in Maharashtra is being used for the cultivation of cotton, petroleum in the West Asia and coal in Bihar and West Bengal are being extracted. These are all actual resources.

Resources which are not being used at present and whose entire quantity may not be known are called **potential resources**. They need a detailed survey for estimating them. These resources could be used in the future. The present level of technology may not be advanced enough to easily utilise these resources. For example, Uranium found in Ladakh.



Windmills

Development of an actual resource depends upon requirement of the people, availability of technology and the economic viability. Two hundred years ago high speed winds were a potential resource. Today, they are an actual resource as wind farms generate electric energy using windmills, many in Netherlands, some in Nagercoil in Tamil Nadu and on the Gujarat coast.

#### II. Based on Origin

On the basis of their origin resources may be classified as biotic and abiotic. Plants and animals are biotic resources. Non-living rocks, minerals, soils, water, air are abiotic resources.

#### III. Based on Stock or Renewability

On the basis of their renewability, resources are of two types : renewable and non-renewable.

Resources which get renewed or replenished quickly are called renewable resources, some of them like solar energy and wind energy

are unlimited and are not affected by human activities. But careless overuse of other renewable resources like water, soil and forests will affect their stock. Amount of a certain resource available for use is called its stock. Water seems to be as unlimited renewable resource but only a little amount of the total water on Earth is available for human use. Many parts of the world face the scarcity of water.

Resources which have a limited stock on Earth are called non-renewable resources. For example, minerals, coal, petroleum and natural gas. Once the stocks are exhausted, it cannot be replenished within a time-frame suitable to people. It may take thousands of years to be renewed or replenished which is much more than human life spans.

#### IV. Based on Distribution

On the basis of distribution, resources can be localised or ubiquitous. Resources that are found only in certain places are called localised, like copper and iron ore. Resources which are found everywhere like the air we breathe are called ubiquitous. Natural resources are not evenly distributed on the Earth.

#### Human Made Resources

In many cases a gift of nature can become a resource only if the people have sufficient knowledge, technology and skill to process it (to change its original form) and use it for satisfying their needs. For example, copper ore was not a resource until people learnt to extract copper from it. People use natural resources to make human made resources like buildings, roads, canals, bridges, machinery, factories and vehicles. Technology is also a human made resource. A flawless national character, culture, social institutions, good government all function for satisfying individual and social needs. These all are human made resources.



Windmills

#### Human Resources

When people have abilities of knowledge, technology and skills they can turn the physical material of the nature into valuable resource. Therefore, people are called human resources. Education and health help in making people valuable resources. Educating people to improve the quality of their skills so that they are able to create more resources is known as human resource development.

Humans are interdependent on each other. For example, farmers grow food grains for the society. The learned scientists find out various



Police



Soldier




Pilot



Miner



Doctor



means to increase crop production, improve seed quality and suggest proper/suitable fertiliser for a given soil.

### **Conservation of Resources**

All resources should be used judiciously or wisely. If people are not careful then even renewable resources can become very scarce and the non-renewable resources can get exhausted. **Judicious use** means to reduce our needs, use, reuse and to recycle the resources as far as possible. Using resources carefully/wisely and giving them time to get renewed is called **conservation of resources**.

Careless use produces a lot of waste. **Waste** is a product with no further use. Do not waste paper. Many trees are cut down to make paper. Do not waste water. Every drop of water is precious. Do not waste electricity. Put off the lights, fans and other gadgets when they are not in use. A lot of coal is burnt and water is used to produce electricity at thermal power stations.

### **Sustainable Development**

If people enjoy a higher standard of living, it is called **economic development**. People are **developed** if they use more consumer goods, i.e. they consume more resources and they exploit their resources fully with the latest technology.



*Wastage of Water*

Use of resources on a large scale and swiftly without thought of the results has created their depletion. And the human wants will need two planets worth of natural resources every year by 2050. The use of resources at high rate has crisis on the planet Earth such as global warming, ozone layer depletion, environmental pollution and land degradation. People are turning resources into waste much more faster than nature can turn waste back into resources.

Sustainable development is the development that balances the need to use resources and also conserve them for the future generations. Development is important but it should be such that it meets our present needs without compromising the scope of future generations to meet their own needs. Thus **sustainable development** is carefully utilising resources so that besides meeting the requirements of the present, also taking care of future generations. Judicious use of resources will help make them last longer. Thus, sustainable economic development means development in which the rate of exploitation of resources does not exceed that of the renewal of those resources or degrade the stock.

**Principles of Sustainable Development :** First of all, there is the need for a change in our personal attitude and practices toward the environment. It shall be obtained by spreading awareness in the society that their survival depends upon the judicious use of the resources. Minimise the depletion of natural resources. Conserve the Earth's vitality and diversity. Respect and care for all forms of life. Enable the communities to care for their own environment.

 **Key Words**

- » Resource : anything that can be used to satisfy a need.
- » Value of a thing : its use or utility.
- » Technology : application of knowledge and skill in doing or making things.
- » Natural Resources : resources drawn from nature and used without much modification.
- » Actual Resources : resources which are being used at present and whose quantity is determined.
- » Potential Resources : resources which are not being used at present and whose entire quantity may not be known.
- » Renewable Resources : resources which get renewed or replenished quickly.
- » Non-renewable Resources : resources which have a limited stock on Earth.
- » Human resources : people who are able to work.
- » Conservation of Resources : using resources carefully/wisely and giving them time to get Renewed
- » Sustainable Development : development in which the rate of exploitation of resources does not exceed that of the renewal of those resources or degrade the stock

## SUMMARY

- ▶ Usability or utility of a thing for us makes it a resource. Its use or utility gives it a value.
- ▶ People themselves are the most important resources because by developing human skills, other humans can be benefitted and new resources can be developed.
- ▶ Air, sunshine, water, rocks, minerals, soils, vegetation and animals are provided by nature and are useful to humans.
- ▶ Natural resources can be further classified on the basis of their level of development and use; origin, stock and distribution.
- ▶ Using resources carefully and giving them time to get renewed is called conservation of resources.
- ▶ Wastage of resources should be avoided.
- ▶ Development is important but it should be such that it meets our present needs without compromising the scope of future generations to meet their own needs.

## Exercise Time

### A. Tick (✓) the only correct choice amongst the following :

1. Which one of the following is a human made resource ?  
a. River water      b. Soils      c. Quinine      d. Cinchona
2. Which one of the following does not make substance a resource ?  
a. Use      b. Utility      c. Value      d. Quantity
3. It is a renewable resource  
a. Coal      b. Wheat  
c. Thermal electricity      d. Petrol
4. This resource is not affected by human activities  
a. Sunshine      b. Water      c. Minerals      d. Forests



**B. Fill in the blanks :**

1. Time and technology can change a substance into a \_\_\_\_\_.
2. Resources are classified as biotic and abiotic on the basis of their \_\_\_\_\_.
3. Resources which get renewed or replenished quickly are \_\_\_\_\_ resources.
4. Windfarms generate \_\_\_\_\_ using windmills.
5. \_\_\_\_\_ resources are exhaustible.

**C. Write true (T) or False (F) against the following statements in given brackets :**

1. Coal is a renewable resource.
2. Animals are destroying resources to meet their needs.
3. Non-renewable resources have a limited stock on Earth.
4. Bridge is a resource.
5. Solar energy and wind energy are unlimited and not affected by human activities.

**D. Define the following terms :**

1. Potential Resource
2. Renewable Resource
3. Sustainable Development

**E. Identify the following :**

1. Resources that exist but have not been put to proper use.
2. Resources derived from the living world
3. Judicious /wise use of resources
4. Resources whose stock is limited on Earth
5. Use of resources taking care of future generations

**F. Answer these question briefly :**

1. What is a resource ? What makes a thing a resource ?
2. Explain the term 'natural resources'.
3. Why are human beings themselves important resources ?
4. What is human resource development ?
5. How can a potential resource become an actual resource ?

**G. Answer these questions in detail :**

1. Give a broad classification of resources.

## PROJECT WORK

1. Make packets and shopping bags out of old newspapers and discarded clothes.
2. Make posters to show 'every drop of water is precious', 'How to conserve various resources used in your school', etc.
3. Look around in your surroundings, list the resources and write their uses.