

**2****ENVIRONMENT AND HUMAN SOCIETY**

The human beings (*Homo sapiens sapiens*), evolved more than two million years ago. They evolved with a large brain, that enabled them to think, and use their judgment. Humans walked erect on two legs, which made their hands free to negotiate manual functions.

As is with other animals, the survival of humans also entirely depended on their obtaining food from the environment. Being intelligent, human beings exploit environmental resources for many purposes other than just for procuring food. In the last few centuries, the exploitation of environmental resources has dramatically increased, leading to serious damage and degradation of the environment. In this lesson you shall learn about the utilization and exploitation of natural resources and how, they are being overexploited.

**OBJECTIVES**

After studying this lesson, you will be able to:

- *list the natural resources obtained from the environment;*
- *describe the interaction between primitive society and environment in terms of food gathering, food hunting and nomadic life;*
- *describe the tools used by primitive humans and discovery of fire;*
- *explain how settled life began;*
- *discuss the origin and evolution of agriculture including domestication of animals;*
- *state the importance of the invention of wheel;*
- *explain how industrialisation began;*
- *identify factors that led to the growth of industrialisation;*
- *explain how exploitation of natural resources started.*



## 2.1 NATURAL RESOURCES AVAILABLE IN THE ENVIRONMENT

Primitive humans interacted with environment for survival. As humans became more and more cultured, they devised means of using environmental resources for making life comfortable and protecting themselves from various environmental stresses (danger).

### 2.1.1 Abiotic resources

Abiotic resources are the physical resources of nature that are described below.

- a. **Land:** Many organisms including humans live on land. Land forms just approximately 29% of earth's surface includes mountains, rocks, deserts, swamps, forests and grasslands. Humans use land for growing crops that provide them with food. They also need land to build shelters, roads and cattle sheds. The need for land usage is steadily growing. To cater to the needs of the growing population, urbanization and industrialization, land is being used for building dams, flyovers, subways and factories. Land resources are fast diminishing.
- b. **Water:** The natural water bodies include oceans, seas, and surface water bodies such as rivers, lakes, water falls and ponds. Almost 80% of the earth's fresh water remains frozen at higher latitude and on mountains tops. Only 20% is available in liquid form. The primary source of water on land is the rainfall. Water is an essential requirement of all living beings. Water is required for
  - irrigation of agricultural crops.
  - industries
  - building construction
  - culture of fish, prawn, aquatic plants (aquaculture)
  - drinking, bathing, cleaning, washing, gardening, pottery making etc.

Water though a naturally replenishable resource, but overuse and wastage of water is leading to its scarcity.

- c. **Energy:** The prime source of energy is solar radiation. Primitive humans used firewood and cow dung and other animal wastes for heating and cooking. Oil extracted from seeds and fish was used by them to light caves and shelters. Another major source of energy is fossil fuel such as coal. Coal as you know has been formed from vegetation which grew millions of years ago, fell and got trapped in sediments. Under immense pressure and intense heat for years, trees and vegetation burned in sediments transformed into coal. Coal is used as a fuel for cooking, for running locomotives, furnaces industries and generating electricity. Coal is also used for extraction of metals and minerals and in thermal power generation.



- d. Petroleum and natural gas** are also fossil fuels. Petroleum probably originated from marine animals that lived during past geological periods, just as coal was formed from vegetation. Petroleum and natural gas are obtained from deep inside the earth and they are non-renewable energy resources. Petroleum products are used for running automobiles, steamers, aeroplanes and for making plastics and fertilizers. Petrol and diesel are refined petroleum products. You might have heard about CNG (compressed natural gas), which is now being used to run automobiles and considered to be a relatively clean fuel. Natural gas and diesel are used for electricity generation. LPG (Liquid Petroleum Gas) comes in cylinders or through pipes and is used as fuel for cooking.

*Petroleum is also called mineral oil. Like petroleum, natural gas is a mixture of gaseous hydrocarbons.*

Energy is also harnessed from sun (**solar energy**), wind (**wind energy**), animal excreta (**biogas**), sea (**tidal energy**) and radioactive minerals (**nuclear energy**).

- e. Metal ores or minerals:** Metal ores are chemical compounds (salts) of metal such as Aluminium, iron, copper, lead, zinc, manganese etc. These ores are found as deposits in earth. Aluminium is used to make utensils, parts of vehicles, aircraft, and spacecraft. Iron and its alloys are used for making armaments, heavy machinery, railway engines, railway lines and a wide variety of articles. . Copper is used for making industrial containers, electric wire and also used in electronic and telecommunication industries. Alloys such as brass and bronze contain copper. However, the availability of metal ores is limited and their increasing mining depletes them fast. Silver, gold and platinum are among the precious metals used and treasured by humans.

### 2.1.2 Biotic resources (living natural resources)

**Biotic resources-** These include plants, animals and microorganisms.

- a. Plants:** The natural food resources included in human diet are the various cereals, legumes, vegetables and fruits. Humans cultivate plants to obtain good grains, pulses, spices, vegetables, fruits, sugar and oil. Fibre yielding plants are grown to humans obtain cotton, jute and flex etc. Flowers of various kinds are cultivated for ornamental purposes. Some plants having medicinal value have been extensively used from time immemorial. Industrial raw material such as rubber, resins, wood are irreplaceable plant products.
- b. Animals:** Goat, fish, eggs, poultry, prawns and crabs are source of food for human beings. Horses, bullocks, elephant, oxen, camels, donkeys, yaks etc. are used for transportation as draught animals. Yaks and sheep yield wool for woolens. Silk worm are grown for silk.

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- c. **Microorganisms:** provides antibiotics. Their use in fermentation and in breweries is an age old practice. Microbes are responsible for processing waste and dead plants and animals.

*The environmental resources provide humans, substances for survival, entertainment, maintenance, decoration and for several other purposes. But for how long?*

On the one hand natural resources are fast depleting because of overexploitation by humans. On the other hand, earth is becoming a big dumping ground for waste generated by the activities of the fast growing human population. This is fast becoming cause for deterioration of human, animal and plant life.



### INTEXT QUESTIONS 2.1

1. Name two natural resources without which life cannot exist.  
\_\_\_\_\_
2. State two uses each for (i) land and (ii) metals are used by humans.  
\_\_\_\_\_
3. State two uses of animals for humans.  
\_\_\_\_\_

## 2.2 RELATIONSHIP BETWEEN PRIMITIVE HUMAN SOCIETY AND ENVIRONMENT

Human beings have lived on earth for approximately more than 2 million years. Records of primitive humans and their activities are buried in the rocks along with their fossils. The fossil records show not only depicts the various stages of human evolution but also the life style and behaviour of primitive humans.







### 2.2.1 Story of human evolution

When human evolution began, forests had dwindled because of glaciation. Much of the land surface was however, still covered by forest. The common ancestors of apes and humans had to come down from trees where they lived. They walked on all fours on the ground using all four limbs. Recent molecular studies have revealed that from common ancestors, evolution of apes (chimpanzee, gorilla, gibbon and orang-utan) and that of humans diverged about 6 million years ago.



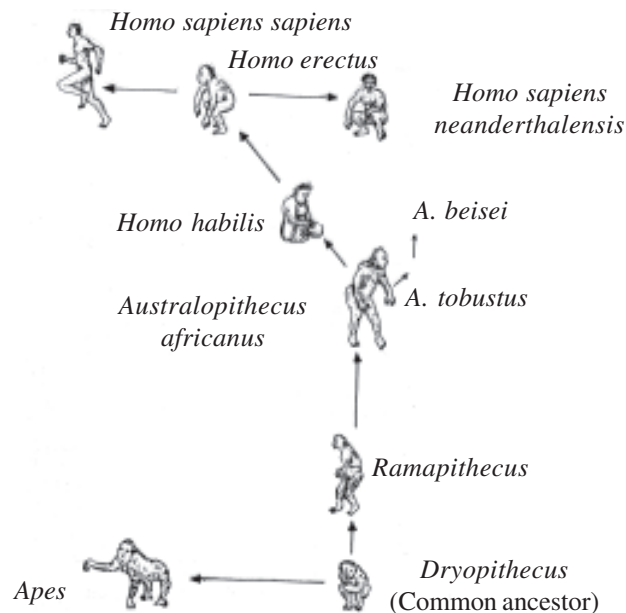
The earliest human ancestors, the *Australopithecines* which walked upright, evolved around 3.5 million years ago in South Africa. They made tools with various materials. (See pictorial table 2.1)

**Table 2.1: Evolutionary stages of humans species**

Name of stages			
Time Period of existence	<i>Australopithecus</i> 5 million years	<i>Homo habilis</i> 2.5 million years	<i>Homo erectus</i> 1.5 million years
Tools	 Crude tools made of bones and pebbles	 Pebble tools with a flake removed for making cutting edge	 Simple hand axes made of stones
Behaviour	Ape-man who walked erect	Hunter-gatherers	Hunted large animals

Australopithecines gave rise to *Homo habilis*, probably around 2 million years ago. These human ancestors had ape like long arms but larger brain than the apes. The next stage, *Homo erectus*, is supposed to have existed between 1.5 million years to 200,000 years ago. Their fossils have been found in China (Peking man), Jawa (Jawa man), Germany (Heidelberg man). This suggests that they evolved in Africa and then spread to Asia and Europe. Their brain size was intermediate between apes and humans. Also they had heavy ridges above eyes like the apes. *Homo erectus* made stone axes.

Next to evolve from *Homo erectus*, were the Neanderthal man (*Homo sapiens neandertalensis*) but they belonged to the same species as do the modern humans *Homo sapiens*. Remains of Neanderthals have been found in Europe, Asia and Africa. They fashioned a large variety of well-made tools and were successful hunters. For almost about 35,000 years, *Homo sapiens sapiens* or modern humans are the only living human species.(Fig. 2.1) (Homo: belonging to family Hominidae, sapiens:wise)



**Fig. 2.1:** Evolution of humans showing ancestor common to apes and humans

**2.2.2 Primitive humans as ‘hunters-gatherers’ and nomads**

Primitive humans lived in forests, near water bodies such as rivers and lakes located on the edges of forests. Their main preoccupation in life was to “procure food”. Their diet consisted of seeds, roots and fruits of plants and small animals which they killed with tools they made from pebbles and stones. They roamed in the forests in search of food during the day and returned to the caves at sunset to save themselves from the attack of wild animals.

Walking on hind limbs, primitive humans were free to use their hands to

- uproot plants for edible roots,
- pluck fruits and vegetables,
- pick up pebbles from banks of rivers and stones from other places and
- make tools from them
- hunt animals, skin them and then eat them.

Thus primitive humans were ‘hunters and gatherers’. They lived in groups of 20 to 30 and apart from collecting plant food, they collected eggs of birds and caught fish. They hunted animals with pebble and stone tools. Women hunted small animals and collected fruits and seeds from trees. Males hunted big animals. Primitive humans also ate turtles, oysters and mussels.

There is evidence to show that primitive humans shared food and also gathered knowledge about edible plants, ripening seasons of fruits, animal dens and methods of capturing wild animals.



Primitive humans, the ‘hunters and gatherers’ moved from place to place as foragers. They led a nomadic life. As nomads, they roamed large and distant areas. They had no permanent abode. They lived near riverbeds where plants and animals were abundant. They also lived in caves. As they moved along, they left behind their stone and bone implements. (see pictorial table 2.1)



## INTEXT QUESTIONS 2.2

1. Name the first stage of human evolution.  
\_\_\_\_\_
2. When did the ‘modern humans’ evolve?  
\_\_\_\_\_
3. What do you mean by “hunters and gatherers”? Answer in one sentence.  
\_\_\_\_\_
4. Where did primitive humans live?  
\_\_\_\_\_
5. State the advantage of their being able to walk on their two feet?  
\_\_\_\_\_

## 2.3 TOOL MAKING BY PRIMITIVE HUMANS AND DISCOVERY OF FIRE

The gathering of food from plants and hunting animals served as stimuli for making a variety of tools. There is evidence that australopithecines made tools probably to (i) drive away wild animals and (ii) hunt animals for food. Pebble tools have been found in fossil sites of australopithecines in Africa.

*Homo erectus* made better tools with stones and the tradition of making tools passed on to *Homo sapiens neandertalensis* or Neandertal man as well as to *Homo sapiens sapiens* or modern man.

Tools of *Homo erectus* were flint tools and the rocks they used for making tools were quartz, quartzite and other volcanic rocks.

The stone hand axes that *Homo erectus* made had sharp edges which were achieved by hammering and chipping away flake after flake with a piece of bone or hard wood. They were far superior to pebble tools (of *Australopithecines* and *Homo habilis*) and could easily uproot edible roots and other plant parts from the ground. The sharp edges could



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cut up animal prey and skin it. The wooden spears and bone daggers that they made helped to hunt animals as large as elephants, horses, rhinoceros and giant baboons.

• **Tools of the Neanderthals**

The techniques of tool making and the tools of the Neanderthals were more advanced. The idea of chipping out flakes from flint stones was already known and they used an antler, bone, wooden hammer and hammer stone to chip off uniform flakes from the rock.

They also made knives, pins, needles and fishhooks and harpoons with bones.

Neanderthals, like their predecessors did cooperative hunting and killed large animals like elephants (mammoths), woolly rhinoceros, bison, wild horses, bear, wild cattle and wild boars. They were called ‘big game hunters’. There is evidence of that they used spear like tools that could be hurled at animals from a distance.

Tools made by primitive humans from stones ushered in the **Neolithic or New Stone Age** (Fig. 2.2). The tools were more grand and polished but their use diminished as humans stepped into the “age of agriculture”.

**STONEAGE TOOLS**

Stone and axe  
(showing different views)



Tools of lower paleolithic made  
by *Homo erectus*



Tools of mid paleolithic

Polished stone axe  
(Showing different views)



Made by *Homo sapiens* of  
neolithic age

Stone blade  
(Showing different views)



Tools of upper paleolithic

**Fig. 2.2:** Tools made by Primitive man

• **Use of Fire**

The primitive human *Homo erectus*, discovered fire more than 200,000 years ago. Discovery of fire had a profound influence on their life style. Primitive humans used fire for various purposes





They realised that use of fire also enabled them to colonise the colder parts of the earth and meat becomes tender when cooked in fire, making it more digestible. Fire was also used to scare away dangerous animals.

Fire brought about “cultural evolution” of humans as well as increasing **exploitation** of natural resources.



### INTEXT QUESTIONS 2.3

1. With what did primitive humans make tools?

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2. State two uses of these tools.

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3. State two uses of fire by primitive humans.

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## 2.4 SETTLED LIFE BEGINS

The “hunters and gatherers” finally began to give up nomadic life. By this time they had moved over and dispersed to many parts of the world probably as “foragers” (searchers of food). Their temporary shelters, as you have learnt, were the caves in mountains.

From an archaeological study, it is clear that foragers lived in temporary oval hut like shelters (Fig. 2.3) which they often covered with plants.



*Fig.2.3: Shelters of primitive humans (wearing clothes made of animal hide)*

Once tools were improved, fire discovered and cultivation of fields begun, humans started settling down. They made shelters and lived in groups.



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**2.5 ORIGIN AND EVOLUTION OF AGRICULTURE AND DOMESTICATION OF ANIMALS**

You have learnt that lives of primitive humans depended largely on the availability of food. They had small families which included children and grand children. They roamed forests for food and lived in caves. Man, the hunter was dependent on his luck in chasing, and hunting, as also on the abundance of animals.

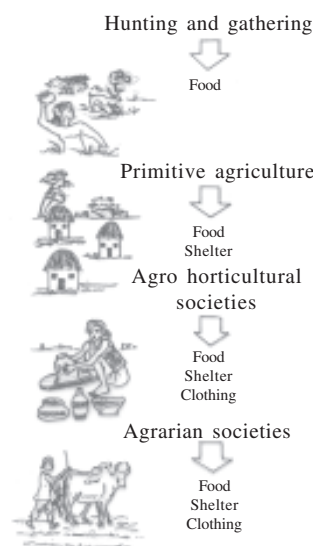
As humans built temporary shelters and began to stay together for three to four months at a place, they discovered that seeds of fruits and grains thrown in front of their huts sprouted into saplings. Intelligent beings as they were, they realized that instead of foraging they can grow food plants for themselves. Around 12,000 years ago human learnt to cultivate crops. Cultivation also attracted animals, which they could trap for eating. This idea of agriculture for getting continuous and relatively stable food supply led to the formation of a “primitive agricultural society” about 10,000 years ago.

As time passed, humans learnt to use metal tools for agriculture and used plant and animal residues as manure. They also began irrigation of their cultivated fields. Thus evolved the so-called “agro-horticultural societies”.

Soon in fertile valleys, food became surplus through continuous cultivation. Humans also began domestication of animals and raising cattle. The first domesticated animal was the dog. They also maintained fisheries. Further improvement in cultivation and domestication of animals encouraged human settlements by the river banks and valleys. Thus primitive “agrarian society” evolved and practised traditional agriculture. (Fig. 2.4a and 2.4b)



*Fig. 2.4a: Beginning of agriculture and domestication of animals*



*Fig. 2.4b: Evolution of induced agroecosystem*



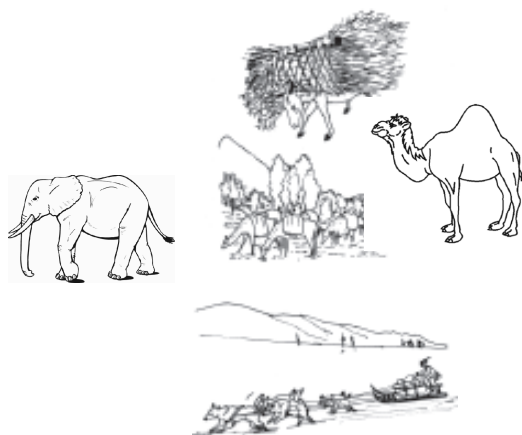
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### Domestication of animals

These primitive humans needed to till the land for farming and to move from place to place so they started using bullocks to till the land and many some other animals such as camels, elephants, bullocks etc. were used (Fig 2.5) to transport humans and their wares from one place to another. The animals used for carrying goods from one place to another are called “draught animals”. (Fig. 2.5)

Early humans also reared animals for food such as the goat, sheep, pig, deer, poultry birds and kept them with them.

Once humans became permanent settlers, their population began to increase. Natural resources got depleted, and then arose the need to get material from outside. Also culturally they moved one step further and their requirement for clothes, ornaments and agricultural implements etc. increased. Those not directly involved in farming became craftsmen. Surplus agricultural produce was bartered for non-essential goods such as pottery, ornaments etc.



**Fig. 2.5:** Animals used for transportation of self and materials



**Fig. 2.6:** Humans use various kinds of substances and metal, clay, wood, leather etc

## 2.6 INVENTION OF THE WHEEL

Earliest humans walked to go from one place to another. But traveling by feet was slow and took very long time. So they used mules and camels to carry them.

No one knows exactly who invented wheel. But people were using it around 5000 years ago in Iraq, Syria, Turkey etc. The first wheels were probably round slices of log. The logs could roll objects on a plank of wood kept on the logs.

The first wheeled vehicle was a chariot which was a two wheeled cart pulled by donkeys and then by horses. Greeks and Romans used them when fighting wars.

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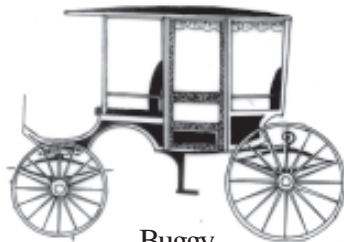
The discovery of the wheel was prior to the making of metal tools. By about 3000 BC wheels made of logs were being used in primitive carts. The solid wooden wheels were used for other purposes too, such as by the potters to mould earthen and terracotta pots around 1000 BC. (The potter's wheel) (Fig. 2.7).



Rickshaw



Tractor



Buggy



Car



Buggy



Truck



Buggy



Aeroplane

*Fig. 2.7: Innovation of wheels*

Wooden wheels were heavy and once metals were discovered, metal wheels with spokes replaced wooden wheels as they were much lighter and stronger.



### INTEXT QUESTIONS 2.4

1. According to an archaeological study, how did foragers live?

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2. When was primitive agricultural society formed?

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3. Which was the first domesticated animals?

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4. Name three draught animals.

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5. When and where was wheel invented?

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## 2.7 BEGINNING OF INDUSTRIALIZATION

A more secure food supply and improved diet made agricultural communities move to new lands for farming. It also led to a substantial increase in population. Some people became miners. They mined flint to make flint axes. Thus growth of agriculture was accompanied by growth of tool making that provided crude agricultural implements.

The earliest indications of industrialization were the engineering in wood and stone that primitive men undertook. It was unspecialized and required hard labour. To mine flint from rocks, miners used deer antlers and shovels made from shoulder blades of cattle. They worked by the light using small lamps made from hollowed pieces of chalk containing animal fat and wicks made of moss. (Fig. 2.8)



*Fig. 2.8: Beginning of industrialization*

Flint (a type of rock) axes were important for farmers for clearing dense forest land to raise their crops. Stone axes were used to fell trees.

Thus making wheels, constructing buildings, mining ores to make tools and ornaments were a step towards industrialization.



**Notes**

**2.7.1 Discovery of Metal**

Humans discovered that copper, iron, bronze made stronger tools. This discovery brought humans out of the Stone Age and marked the beginnings of industrial revolution.

The potters were using high temperature kilns or ovens to fire their wares. Accidentally they discovered that lumps of gold and copper also melted at high temperature and could be moulded into shape. So the metal smiths discovered that intense heat could extract copper from metal bearing ore buried in rocks. this process is now called ‘smelting’.

The use of metal was first discovered in Iran and Turkey approximately 8000 years ago. The early use of copper and gold was for making ornaments. Two thousand years later, human began to make copper axes and weapons with sharp cutting edges. Soon smiths mixed metals and produced bronze from copper and tin. This alloy was harder and easier to cast into knives and axes. By 2500 BC, bronze became the dominant metal.

From 1000 BC, farmers had better axes, sickles and knives. Carpenters also had better tools.

**From Bronze age to Iron Age**

From 7<sup>th</sup> and 6<sup>th</sup> century BC, humans began to use iron to make weapons and found it to be much superior to bronze. By 1200 BC, western Asia (Iran, Turkey etc.) had come out of the Bronze Age and entered into the Iron Age. Iron tools and weapons replaced those made from bronze.

**2.8 FACTORS THAT LED TO GROWTH OF INDUSTRIALIZATION**

Several factors were responsible for the growth of industrialization.

**Technical development:** The discovery of metals for making better tools and weapons initiated technology.

**Economic development:** (i) The establishment of agrarian societies engaged people in selling surplus produce or bartering it. This made them economically sound.

(ii) In the agrarian society, people got busy with occupations other than agriculture.

**Invention of wheel:** This led to faster transportation and marked the beginning of the **transportation industry**. Not so long ago man traveled by bullock carts. Today the car, the bus, the train and above all the aeroplane are a common sight.



- Beginning of mining:** It was related to unearthing flint. Later ores containing copper, iron, and aluminum are mined. This led to the formation of mining industry. Mining of mineral and metalous fossil fuels like coal and natural gas are common even today.
- Agriculture:** Agriculture began with primitive humans. But today agriculture furnishes means of livelihood for millions of people. They produce food, fibers and raw materials for industry. Modern farming methods have produced food for teeming millions. Agriculture itself has become an industry. It has also led to the formation of **food industry** so much so that even readymade breakfasts are now available.
- Bronze age and Iron age:** Bronze age and Iron age and the discovery of fire much earlier led to the making of **machine tool industry**. Machines for making synthetic cloth, for printing cloth ushered in textile industry.
- Language:** Human are the only animals endowed with a well developed capacity for speech. Spoken communication led to development of language. Language helped in working in groups which enhanced the pace of economic development

Thus not one but several factors led to industrialization.

## 2.9 BEGINNING OF EXPLOITATION OF NATURAL RESOURCES

Since human beings first evolved they have been completely dependent on forests and their produce. Seeds, fruits and wild animals living in the forest constituted the diet of primitive humans. Leaves, branches and bark were used as clothes and pebbles, stones and bones of dead animals were used as weapons.

Forests were cut down to make agricultural fields. They produced enough food and developed shelters and this lead to a sizeable increase in the population. More mouths to feed and to be provided with facilities. With advancement of civilization and growth of urban culture forests were wiped out from large areas of forest. Trees were felled for wood, for making shelters, carts for transportation, etc and also as a source of fuel.

With the discovery of fire, more wood was needed for cooking. Humans began to mine not only coal for fuel but also ores of metals to make wheels and ornaments etc. Initially the damage was not so great. After the industrial revolution, in the last 400 years, forests, the original habitat of humans, have dwindled at an alarming rate; wild life has been threatened

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to extinction. Some wild animals have vanished. Pollution from industries has made the air impure and water bodies full of filth.

The association between primitive humans and the environment in which they lived was one of fear and respect. As humans became more and more 'civilized' and created innovative newer technology, the treasured natural resources such as the soil, the forest, the minerals, metals, the air, the water, plants and animals were increasingly overexploited. Coupled with the exploitation was the enormous increase in human population. In the last decade, environmentalists have made alarming discoveries.

- Environmental resources are limited and fast getting depleted due to over exploitation.
- Pollution of air, water and land caused by human activities is posing serious threat to human survival and well being.

The relationship between human and their environment has changed specially since the beginning of industrial revolution. It has become confrontational and the consequences have already started surfacing. You will learn more about environment degradation in the next lesson.



### INTEXT QUESTIONS 2.5

1. List some steps towards industrialization.

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2. Which metals were discovered by the primitive humans.

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3. List four factors those led to growth of industrialization.

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4. What is the impact of industrialization upon nature.

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### WHAT YOU HAVE LEARNT

- The earth bears several natural resources of which the non-living or abiotic resources are land, water, air, fossil fuels and minerals, and the living or biotic resources are plants, animals and microorganisms.
- Humans a part from food require, two major types of resources namely (1) materials and (2) energy for comfort and economic development.
- Ever since humans appeared on earth they have been drawing their food, clothing and other substances from nature.





- Humans were evolved more than 2 million years ago when they diverged from apes with whom they shared a common ancestor.
- The earliest bipedal humans were the **australopithecus** who evolved in Africa. They were ape like but had larger brains.
- The next stage in human evolution was **Homo erectus** with larger brain and erect posture. Their fossils have been found in Jawa and China.
- **Homo sapiens neanderthalensis** or neanderthal man arose from **Homo erectus**. Soon they became extinct but another line of humans the **Homo sapiens sapiens** evolved and they are considered to be the direct ancestors of the modern humans.
- Primitive humans lived in forests and used their hands to uproot edible plants roots, and pluck fruits and collect seeds. Since hands were not used for walking, they were used to make tools also.
- Primitive humans were hunters and gatherers and moved from place to place in search of food. (nomadic life)
- Along with human evolution, skills also improved progressively in tool making. Humans made simple tools with stones. The time period of their existence on earth is called “old stone age” or paleolithic age. Starting from crude pebble tools, as time passed, they made better and sharper tools. In the Neolithic or new stone age, the tools were polished and ground.
- Later human discovered fire and used it for cooking, driving away predators and capturing large animals.
- From a nomadic life, humans began to settle and make shelters.
- Around 12,000 years ago humans learnt to cultivate crops. Agricultural practices improved and humans grew enough food and their population increased.
- Surplus cultivated crops was transported to other places were bartered.
- Wheel was discovered and transportation became easier. They moved to newer places to raise new crops and also began to domesticate animals.
- While primitive humans were mining flint to make tools, they come across metal ores and mining and refining metals by heating began.
- They made lots of things with bronze, an alloy of copper and tin and later with iron.
- Soon they started manufacturing activity and thus began industrialization.
- Rapid expansion of industrialization has resulted in (i) depletion of natural resources and (ii) pollution of the environment
- The vary survival of humans is now threatened because of environmental degradation.

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### TERMINAL EXERCISE

1. Name the abiotic and biotic natural resources.
2. Of what use are plants and animals to humans?
3. List 10 uses of water for human beings.
4. List the various sources of energy.
5. Trace the evolution of humans up to modern man.
6. What do you mean by the statement “early men were hunters and gatherers.”
7. State the purposes for which primitive man made tools.
8. Primitive humans were thrilled to discover fire and why?
9. How did humans think of cultivating crops?
10. What changes took place in the behaviour and life style of primitive humans after they became agriculturists?
11. What do you mean by “bronze age” and “Iron age”?
12. State the factors which led to industrialization.
13. What impact did years of use by growing population of humans have on environmental resources?



### ANSWER TO INTEXT QUESTIONS

#### 2.1

1. Air, water, substratum (any two)
2. (i) Land- to make shelter, for agriculture, pottery etc.  
(ii) Metals – to make tools, ornaments and other things
3. As food, transport

#### 2.2

1. Australopithecus
2. 2 million years ago
3. Forage, plucks fruits and uproots plants and hunt animals



4. Caves
5. Hands became free to make tools and carry out many other activities.

**2.3**

1. Stone and metals
2. Uproot plants, kill animals
3. Cook food, heat up rooms, and scare away animals (any two)

**2.4**

1. In temporary oval hut shelter which often covered with plants.
2. About 10,000 years ago.
3. Dog
4. Bullock, camel, elephant.
5. Around 5000 years ago in Iraq and Syria.

**2.5**

1. Making wheels, constructing building, mining ore to make tools and ornaments.
2. Copper, iron and bronze
3. Technical development, economic development, invention of wheel, beginning of mining, agriculture etc. (any four)
4. Forest cut down, wild life has been threatened to extinction, and pollution from industries has made air impure and water bodies full of filth.