

7th Social Science Lesson 12 Notes in English

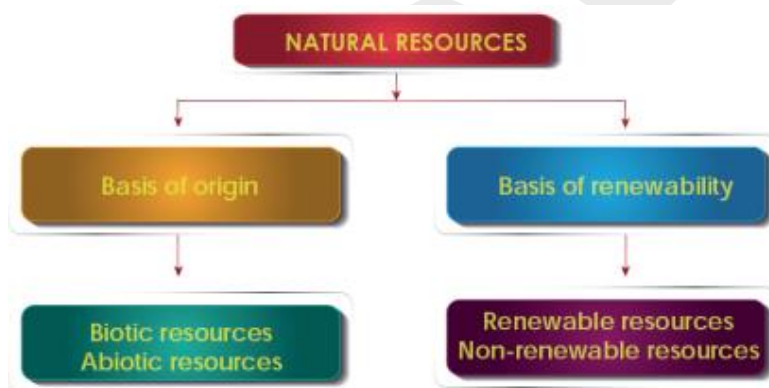
12] Resources

Introduction:

A country's social, economic and political strength lies in the distribution, utilization and conservation of its resources. Anything which can be used for satisfying the human needs is called resource. Natural resources are resources that exist without action of humankind. Natural resources are obtained from environment. Many natural resources are essential for human survival. Resources always cannot be consumed in their original form, but they must be processed into usable commodities and usable things.

Importance of resource:

- ❖ Natural resources satisfy daily needs of man such as food, clothing and shelter.
- ❖ Natural resources also contribute immensely to boost up a nation's economy.



On the basis of origin, resources may be divided into two types. They are:

1. Biotic resources.
2. Abiotic resources.
1. **Biotic resources:**

Biotic resources are found in the biosphere which are obtained from living and organic materials. It includes forests, crops, birds, animals, fishes, man and materials that can be obtained from them. Fossil fuels such as coal and petroleum are also included in this category because they are formed from decayed organic matter.

2. **Abiotic resources:**

Abiotic resources are the non-living parts of an environment. Examples of abiotic resources include land, water, air, sunlight and heavy metals including ores such as gold, iron, copper, silver etc.

On the basis of renewability, resources can be divided into two types. They are:

1. Renewable resources.
2. Non - renewable resources.

1. **Renewable resources:**

A renewable resource is a resource which can be used repeatedly and replaced naturally. Renewable resources harvested and used rationally will not produce pollution. The use of renewable resources and energy sources is increasing worldwide.

Example: solar energy, wind energy, and hydropower.

Solar energy:

The sun produces energy in the form of heat and light. Solar energy is not harmful to the environment. Photovoltaic devices or solar cells, directly convert solar energy into electricity. Individual solar cell in group panel can perform small applications from charging calculator, watch batteries, to large such as to power residential dwellings. Photovoltaic power plants and concentrating solar power plants are the largest solar applications covering acres. India, China, Japan, Italy and States of America are major utilizers of solar energy in the world.



Kamuthi solar power plant

Wind energy:

Wind power is clean energy since wind turbines does not produce any emissions. In recent years, wind energy has become one of the most economical and renewable energy technologies. The Classic Dutch windmill harnessed the wind's energy hundreds of years ago. Modern wind turbines with three blades dot the landscape today, turning wind into electricity. Major wind energy producing countries are United States, China, Germany, Spain, India, United Kingdom, Canada and Brazil.



Wind mill

Major wind farms in India:

S. No.	Wind Forms	District	State	Installed Capacity (MW)
1.	Muppandal	Kanyakumari	Tamil Nadu	1,500
2.	Jaisalmer	Jaisalmer	Rajasthan	1,064
3.	Brahmanvel	Dhule	Maharashtra	528
4.	Dhalgaon	Sangli	Maharashtra	278
5.	Damanjodi	Damanjodi	Odisha	99

Hydropower:

Water is considered as a great source of energy. At present, water is used for producing hydroelectric power. Hydroelectricity is generated from moving water with high velocity and great falls with the help of turbines and dynamos. Hydroelectricity power is the cheapest and most versatile source of energy out of all the known energy. Hydroelectric power is a renewable resource. China, Canada, Brazil, United States of America, Russia, India, Norway and Japan are some countries producing hydroelectricity. China is the largest producer of hydro-electricity.



Itaipu Dam, Brazil and Paraguay

S. No.	Hydro - electricity project	Installed Capacity (MW)	State
1.	Tehri Dam	2,400	Uttarakhand
2.	Srisaillam Dam	1,670	Andhra Pradesh
3.	Nagarjuna Sagar Dam	960	Andhra Pradesh
4.	Sardar Sarovar Dam	1,450	Gujarat
5.	Bhakra Nangal Dam	1,325	Punjab

6.	Koyna Dam	1,960	Maharashtra
7.	Mettur dam	120	Tamil Nadu
8.	Idukki dam	780	Kerala

S.No.	Name of the Project	Country	River	Installed Capacity in MW
1.	Three gorges Dam	China	Yangtze	22,500
2.	Itaipu Dam	Brazil and Paraguay	Parana	14,000
3.	Xiluodu Dam	China	Jinsha	13,860
4.	Guri Dam	Venezuela	Caroni	10,235
5.	Tucurui Dam	Brazil	Tocantins	8,370

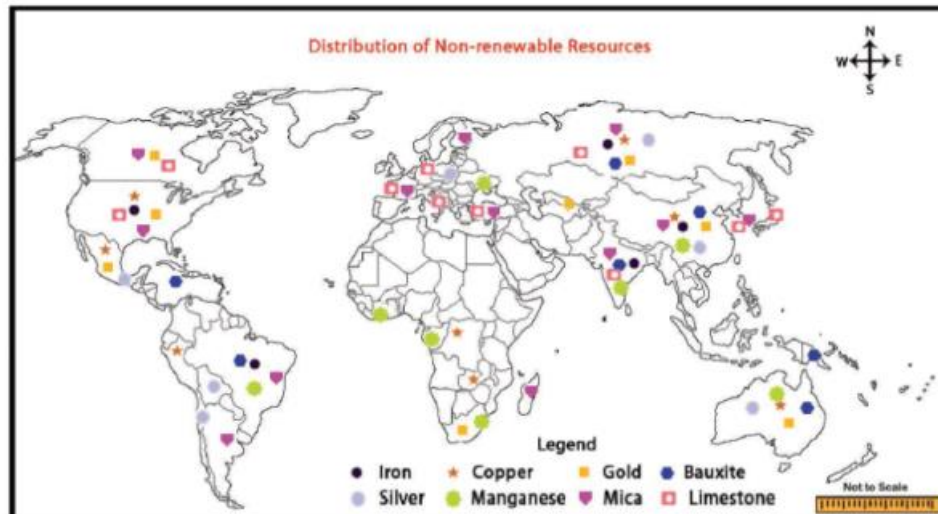


Three Gorges Dam, China

Non-renewable resources:

Natural resources that once consumed and cannot be replaced is called non-renewable resources. Continuous consumption of non-renewable resources ultimately leads to exhaustion. Examples of non-renewable resources include fossil fuels such as coal, petroleum, natural gas and mineral resources such as iron, copper, bauxite, gold, silver and others. Non-renewable resources can be divided into three types. They are:

- ❖ Metallic resources.
- ❖ Non - Metallic resources.
- ❖ Fossil fuel resources



Metallic resources:

Metallic resources are the type of resources that are composed of metals. These are hard substances, which are the good conductors of heat and electricity. Example for metallic resources are iron, copper, gold, bauxite, silver, manganese, etc.

Iron:

Iron is the fourth most common element in the Earth's crust and the most widely available metal. Magnetite and hematite are the common ore for iron, which occurs normally in the rocks of the crust. Iron ore is the key raw material in making steel and 98% of the iron ore extracted is used to make Steel. Pure iron ore is very soft, but its strength is increased many folds by adding small amount of carbon and manganese. It's low cost and high earth strength makes it usable in engineering applications, such as the construction of machinery and machine tools, automobiles, construction of large ships, structural components of building, bridges etc.

Iron ore is mined in about 50 countries. Among the iron ore producing countries China, Australia, Brazil, India and Russia are the principal producers accounting for 85% of the world's total output of iron ore. These countries have 70% of the total reserves of the world. Jharkhand, Odisha, Madhya Pradesh, Chhattisgarh, Karnataka and Goa account for over 95 per cent of the total reserves of India. Iron ores found at Kanjamalai in Tamil Nadu.

Copper:

Copper is one of the first metals known and used by man. Copper ranks as the third most consumed industrial metal in the world after Iron and Aluminium. Copper is good conductor of heat and electricity. About three quarters of copper is used to make electrical wires, telecommunication cables and electronics.

Chile is the world's number one country in the production of copper. Other copper producing countries are Peru, China, United States, Congo and Australia.

Gold:

It is a rare and precious metal. Hence, it has high demand in world markets. Formerly, it was used for minting coins, but now it is used for making ornaments and in dentistry. It is regarded as a symbol of prosperity and a form of wealth.

China is the world's largest producer of gold. Also, Australia, Russia, United States, South Africa and Canada are the major producers of gold. Among these countries, Australia has 9500 tons reserves of gold ore and it is world's leading country in gold ore reserves. Karnataka is the largest producer of gold in India. Kolar Gold Field is one of the deepest mines of the world.



Kolar Gold Field

Bauxite:

Aluminium is produced from bauxite ore. There are several ores that contain aluminium but bauxite contains more aluminium. Aluminium has wide range of uses compared to other metals. Aluminium is light in weight, tough and cheaper, which makes it popular metal for constructional purpose. It is mainly used in the construction of aircrafts, ship, automobiles, railway coaches and etc. Aluminium is a good conductor of electricity and heat, hence, it is used for making electrical cables. It is highly resistant to corrosion. By the addition of small quantities of other metals to aluminium, it creates superior alloy than pure aluminium. E.g: Duralumin.

Australia is the world's leading bauxite producer. Apart from that, China, Brazil, India, Guinea, Jamaica and Russia also play an important role in bauxite production. One fourth of the bauxite mineral deposits found in Guinea alone. Odisha, Gujarat, Jharkhand, Maharashtra, Chhattisgarh, Tamil Nadu and Madhya Pradesh are the main bauxite producing states in India. The bauxite deposits are mainly found in the Shervaroy hills of Salem district, Tamil Nadu.

Silver:

Silver is also a precious metal like gold. It has a wider variety of uses than gold. It is used in making jewellery, dentistry, photographic goods, electroplating industry and in the manufacture of luxury goods. About two-third of silver is used for monetary purposes. Like gold, silver also resists corrosion. Mexico is the world's leading silver producer. Following Mexico, Peru, China, Russia,

Australia and Chile produce more silver. More than 50% of silver is found only in South American countries.

Manganese:

Manganese is a steel-grey, hard, shiny and brittle metal. The common ores of manganese are Pyrolusite Manganese, Psilomelane and Rhodochrosite. Manganese is essential for the production of good quality Steel. Manganese is used in making electrical batteries. It is also used as colouring material in bricks, pottery, floor tiles. Manganese compounds are used in making disinfecting liquids, bleaching powder, fertilizers etc.

South Africa is the world's leading producer of manganese. The significant producers of manganese in the world are China, Australia, Gabon, Brazil and India. All these producers have large reserves of manganese and are significant exporters in the world.

Non-metallic resources:

Non-metallic resources can be described as the resources that do not comprise of metals. These are not hard substances, and are not good conductors of heat and electricity. Example for non-metallic resources are mica, limestone, gypsum, dolomite, phosphate, etc.

Mica:

Muscovite and Biotite are the common ores of Mica. It is one of the indispensable minerals used in electrical and electronics industry. It is used as an insulating material in electrical industry. In powder form, it is used for making lubricating oils and decorative wallpapers.

China is the world's top producer of mica. Russia, Finland, United States, Turkey and Republic of Korea also play a major role in the production of mica. About 95 per cent of India's mica is found in just three states of Andhra Pradesh, Rajasthan and Jharkhand.

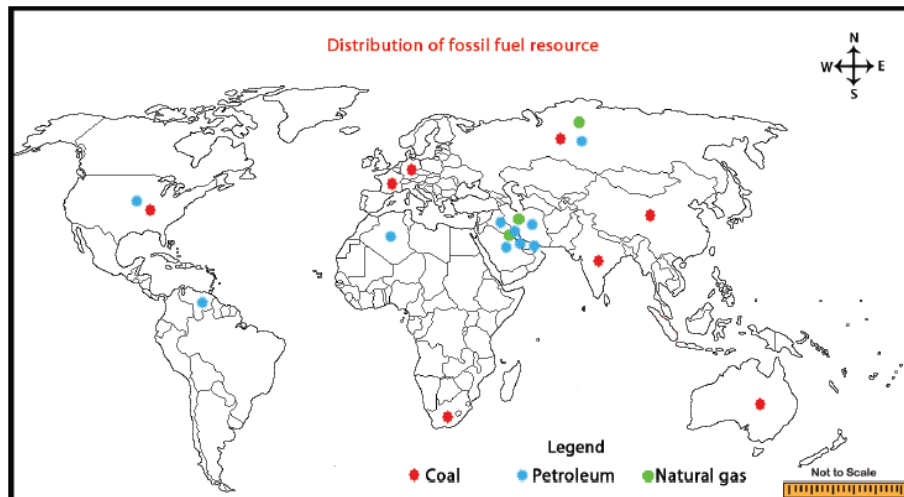
Limestone:

Limestone is a sedimentary rock, composed mainly by skeletal fragments of marine organisms such as coral, foraminifera and molluscs. About 10% of sedimentary rocks are limestone. Mostly limestone is made into crushed stone and used as a construction material. It is used for facing stone, floor tiles, stair treads, windows sills and many other purposes. Crushed limestone is used in smelting and other metal refining process. Portland cement is made from limestone.

China produces more than half of limestone production in the world. Beside this, United States, India, Russia, Brazil and Japan also produce more Limestone. Madhya Pradesh, Rajasthan, Andhra Pradesh, Gujarat, Chhattisgarh and Tamil Nadu Produce over three-fourths of the total limestone of India. In Tamil Nadu, Large scale limestone reserve found in Ramanathapuram, Tirunelveli, Ariyalur, Salem, Coimbatore and Madurai districts.

Fossil fuel resources:

Fossil fuel resources are normally formed from the remains of dead plants and animals. They are often referred to as fossil fuels and are formed from hydrocarbon. When fossil fuels are burned, they become a great source of heat energy. Example for fossil fuel resources are coal, petroleum and natural gas.

**Coal:**

This is the most abundantly found fossil fuel that forms when dead plant matter is converted into peat. It is used as a domestic fuel, in industries such as iron and steel, steam engines to generate electricity. Electricity produced from coal is called Thermal Power. Coal is classified into four types based on carbon content. They are:

1. Anthracite.
2. Bituminous.
3. Lignite.
4. Peat.

The leading coal producers of the world is China. Beside this, India, USA, Australia, Indonesia and Russia also produce more coal. The coal producing areas of India are Raniganj in West Bengal, Neyveli in Tamil Nadu, Jharia, Dhanbad, and Bokaro in Jharkhand.



Neyveli coal field

Petroleum:

Petroleum is found between the layers of rocks and is drilled from oil fields located in Offshore and coastal areas. This is sent to refineries which process crude oil and produce variety of products like diesel, petrol, kerosene, wax, plastics and lubricants. Petroleum and its derivatives are called Black Gold as they are very valuable.

The chief petroleum producing countries are Saudi Arabia, Iran, Iraq and Qatar. The other major producers are USA, Russia, Venezuela, Kuwait, UAE and Algeria. The leading producers in India are Digboi in Assam, Bombay High in Mumbai and the deltas of Krishna and Godavari rivers.



Bombay High oil field

Natural gas:

Natural gas is found with petroleum deposits and is released when crude oil is brought to the surface. It can be used as a domestic and industrial fuel.

More than 50% of the global natural gas reserves are found in United States of America, Russia, Iran and Qatar.

In India, Krishna and Godavari Delta, Assam, Gujarat and some areas of offshore in Mumbai have natural gas resources.

Wrap up:

- ❖ Natural resources are obtained from environment.
- ❖ Renewable resources can be used repeatedly and replaced naturally.
- ❖ Non-renewable resources once consumed, cannot be replaced.
- ❖ Solar energy is not harmful to the environment.
- ❖ Hydroelectricity is generated from moving water with high velocity and great falls with the help of a turbines and dynamos.
- ❖ Metallic resources are iron, copper, gold, bauxite, silver, manganese etc.
- ❖ Non-metallic resources are mica, limestone, gypsum, dolomite, phosphate, etc.
- ❖ Fossil fuels resources are normally formed from the remains of dead plants and animals.

Glossary:

1.	Biotic Resources	Obtained from Living and Organic materials	உயிரியல் வளங்கள்
2.	Abiotic Resources	Obtained from non-living, non-organic materials	உயிரற்ற வளங்கள்
3.	Hydroelectricity	Generated from moving water with high velocity and great falls with the help of turbines and dynamos	நீர் மின் சக்தி
4.	Metallic resources	Resources that are composed of metals	உலோக வளங்கள்
5.	Non-Metallic resources	Resources that do not comprise of metals	உலோக அல்லாத வளங்கள்
6.	Duralumin	A hard, light alloy of aluminium with copper and other elements	துராலுமின்
7.	Fossil fuel	Formed from the remains of dead plants and animals	படிம எரிபொருள்
8.	Thermal power	Electricity produced from coal	அனல் மின் சக்தி
9.	Black gold	Petroleum and its derivatives	கருப்புத் தங்கம்
10.	Precious metal	A metal that is valuable and usually rare	விலை மதிப்பற்ற உலோகம்

Do You Know?

Kamuthi solar power project is one of the largest solar power projects in the world. It is situated in Ramanathapuram District in Tamilnadu. The Kamuthi solar power project was completed on 21st September 2016. Investment of this project is around 4,550 Crores. The installed capacity of this project is 648 MW.

Three Gorges Dam in China is the largest hydroelectricity project in the world. It's construction started in 1994 and ended in 2012. The installed capacity of the dam is 22,000MW.

Most of the coal deposit that we use now, were formed about 300 million years ago. Much of the earth was covered with steamy swamps. As the plants and trees are dead, their remains were buried underneath the swamps. Eventually, they were transformed into coal beneath the ground due to excessive heat and pressure.