

**Unit 1 Geography Resources**

Good Morning students, Today Let us know about Non-Renewable Resources

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.

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.

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-greyed, 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 limestones. 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.

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.

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.



Neyveli coal field



Bombay High oil field