

Geography Notes Part 10

Primary Activity – I

Types of Primary activity

In the history of human civilization, agriculture was a major landmark in the life of humans because it allowed them to have a settled life. Man was dependent on hunting, gathering, herding, lumbering, mining, fishing and agriculture for his livelihood. All these activities for which man had to depend on collecting things directly from nature are known as primary activities.

In its most primitive form, primary activity includes food gathering and hunting.

1. Gathering

Food gathering is a primary activity in which people gather their requirements from nature. This includes the collection of fruits and roots from forests and sometimes includes hunting. This kind of activity is prevalent among remote, isolated tribal groups of people.

Example : Bushman of Africa, aborigines (Jaravas, Onges) of Andaman and Nicobar.

2. Hunting

Hunting is a primary activity in which people hunt animals for their meat and skin. This kind of activity is still prevalent among remote isolated groups of people. Example: Pygmies of Africa, the Amerindians of the Amazon basin, Eskimos of Canada.

Other primary activities like herding and fishing require greater organization.

3. Herding

Herding is a primary activity in which people graze a large number of animals on natural pastures. This involves seasonal migration of the nomads and their flock from one area to another in search of fresh pastures.

Today the nature of herding is different in different regions. The herders of Africa and central Asia still move in relation to the climatic season and the availability of natural pastures. The herders of North America, South America and

Nomade	Place	Animals
Masal	Africa-Kenya, Tanzania	Cattle
Bedouin	Arabia	Camels
Lapps	Scandinavia	Reindeer
Tauregs	Africa, S.W. Asia	Camel
Kurds	West Asia	Sheep and Goats
Rabari	India- Rajasthan	Camels

Australia have large ranches where fodder is cultivated and the animals here are not dependent on natural vegetation. These ranches are able to support very large herds of animals.

4. Fishing

Fishing is a primary activity along rivers and lakes and in coastal areas. Inland fishing is usually simple and on a small scale. Simple fish nets are used to catch fish. Tonle Sap which is in Cambodia is the world's largest inland fishing lake.



Tonle Sap- worlds Largest inland fishing lake

Fishing in the oceans is a more complex activity. Abundant food for the fish in the form of plankton is available in the continental shelves and shallow seas. Large ships called factory ships travel in the oceans for months together. They catch, process and tin the fish on the ship itself. They use modern technology to track the fish and this has often resulted in overfishing in some parts of the world. Countries like Japan, Peru and Canada and areas like the North Sea and North West Atlantic Ocean are important fishing grounds. Besides fishing, whale and seal hunting and pearl fishing are also carried out in the oceans.

5. Lumbering

Lumbering is a primary activity that extracts wood from the forests for varied uses. Timber is used for fuel, furniture making, paper and pulp industry.

Temperate forests are more extensively used for two reasons-firstly the trees have softwood and secondly large number of trees of the same type are found together.

Countries like Russia, Canada and USA have large timber resources. Two-thirds of the world's industries use in wood from the temperate forests.

Tropical forests have valuable hardwood trees like teak and rosewood. But lumbering is not a major occupation here because the valuable timber trees are scattered in these forests.

Mining and agriculture are also primary activities but they involve more human interaction and are practised on a large scale. Therefore, we shall study these two primary activities in the following lessons.

Mining

Mining is an important primary activity. It supports the industrial growth of a country.

Mining is the extraction of valuable minerals or other geological materials from the Earth. Mining of stone and metal has been an important activity from pre-historic times. Early humans used minerals to make crude implements and weapons. Today, mining is carried on a very large scale since industries use minerals extensively.

Minerals are non-renewable resources. Mining therefore is known as a **Robber industry** because the extracted materials cannot be replaced.

Classification of Minerals

Minerals are classified based on their mineral content and uses such as

a) metallic minerals b) non-metallic minerals and c) power minerals. Metallic minerals like iron ore contain metals while non metallic minerals like limestone do not contain metals. Power minerals are non-metallic minerals which are very important fuel resources.

Metallic	Non- metallic	Power Mineral
Iron	Sulphur	Coal
Copper	Mica	Petroleum
Gold	Nitrate	Natural gas
Tin	Limestone	Uranium
Aluminum	Asbestos	Thorium

Minerals may occur in pure form or maybe mixed with other materials of the rocks as ores. The ores are mined and then refined to extract valuable elements.

Minerals ores may occur in cracks, faults or joints of rocks or as sediments. Mineral ore deposits are thus classified as occurring in veins, lodes, beds and alluvial deposits.

Types of Mining

There are different methods of mining to extract minerals. Mining may be on the surface or subsurface (underground) depending on the occurrence of mineral.

Surface mining methods include a) open cast mining b) strip mining and c) alluvial mining. It is used to mine the minerals that are found closer to the earth's surface.

Open cast mining involves the digging out of minerals that occur on the surface of the Earth.

Strip mining remove long strips of overlying soil and rock.

Alluvial mining is used to extract minerals by panning or dredging minerals like tin and gold which are sometimes mixed with alluvium in the river bed.

Quarrying is the mining of construction materials like limestone from the Earth's surface.

In **underground mining**, ores are extracted from greater depths beneath the surface. Underground mining is usually more expensive than the surface mining. Safety precautions are very important in underground mining. For example, coal mines are often prone to catch fire because of the gases trapped underground.

Drilling is a mining method used to extract minerals like Oil and natural gas. Oil rigs are used for drilling oil wells. The most familiar sights in the oil fields are the tower like features or derricks which mark the places where the oil is being drilled.

Distribution of Minerals

Metallic Minerals

Iron Ore

Magnetite, haematite limonite and siderite are different types of iron ore, based on to the iron content of the ore. Iron ore mines are found **extensively** in U.S.A, Canada, Australia, China, Brazil, India and Kazakhstan.

Copper

It is mined from open pits. Large copper mines are found in Utah in USA, Mexico, Zambia, Chile and Indonesia.

Geography Notes Part 11

Primary Activity – II

Agriculture

The earliest human civilizations developed and thrived around river valleys. This was because man began to cultivate crops and it was possible around river valleys where there was abundant water and fertile soil.

Agriculture refers to the process of preparing the land for the cultivation of crops and to the rearing of cattle. It is also referred to as farming. Agriculture is a primary activity.

Ancient River Valley Civilizations

River Valley	Civilization	Continent
Indus	Harappa and Mohenjo-Daro	Asia
Nile	Egypt	Africa
Euphrates	Mesopotamia	Asia
Yellow	Chinese	Asia

Agricultural crops can be broadly grouped into food and cash crops. Food crops may be grown as subsistence crops or commercial crops. (For example- Rice, Wheat, Ragi, Maize etc). cash crops are not consumed as food but are used as raw materials for many industries(For example- Rubber, Cinchona and Cotton)

Geographical factors that determine Agriculture

Major factors that affect agricultural diversity and distribution are climate, landforms, soils, availability of water and labour.

1. Climate

Climatic factors like temperature and rainfall affect agriculture.

a. Temperature

Most plants cannot grow if the temperature falls below 6°C.

Different crops are grown in different climatic regions. For example, rice is the principal crop of the tropical region as it requires high temperature and plenty of water. Wheat is a temperate crop which grows in cool climate.

Altitude affects the temperature and so it also affects agriculture. In the high altitude areas of tropical regions, temperate crops like carrots can be grown.

Growing seasons vary from crop to crop. Some crops like cotton require 200 frost free days for their optimum growth and so are grown in the warmer seasons.

b. Rainfall

Moisture availability determines the type of crop and the growing season. The seasonality of rainfall is important. Crops require adequate rain for their growth but the timing of the rain affects crops differently. Seasonal variation of rainfall is important as different crops require water at different times. For example, coffee must have dry conditions before and during harvest while maize needs water during the same season.

The amount of rainfall determines the types of crops grown in an area. Rice is grown wherever the rainfall is abundant, while millet is grown in the drier regions.

Cropping Patterns

Uni or mono cropping-only one crop is raised in the field at one time.

Multiple cropping is the practice of growing two or more crops in the same field during a single growing season. For example, in the Garghwal Himalayas, 12 or more crops are grown on the same plot, including various types of **beans, grams** and **millets** and harvested at different times.

2. Irrigation

Where rainfall is inadequate or unreliable, irrigation is necessary for agriculture.

Types of Irrigation

Canal irrigation is one in which water is distributed to the fields through canals.



Canal Irrigation

Sprinkler irrigation sprays water through sprinkles located in the fields.



Sprinkler irrigation

In **Central pivot irrigation** the circular area around a pivot is irrigated, often creating a circular pattern in crops when viewed from above.



Central pivot irrigation

In **Drip irrigation** water is delivered at or near the root zone of plants drop by drop.



Drip irrigation

3. Relief

Flat land like plains, valleys, the flat top of plateaus and deltas are better suited for agriculture. For example the plains of North India are best suited for agriculture.

4. Soil

The type of soil found in a region affects the kind of crops grown there. Alluvial soil is the most fertile soil and hence ideal for agriculture. Clayey soils retain water and so it is suitable for growing crops like cotton and rice. Sandy soil which allow water to seep through rapidly are more suited to grow crops like groundnuts and millets.

5. Other factors

The other factors that influence the nature of agriculture practiced in an area are: size of land holdings, transport facilities, nearness to markets, availability of bank loans etc.

Types of Agriculture

The type of agriculture refers to the nature of agricultural operations and the types of crop.

Agricultural types include shifting agriculture, subsistence farming, intensive subsistence farming, commercial agriculture, extensive mechanized farming and mixed farming.

a. Subsistence Agriculture

In this type of farming, the farmers grow just enough food for themselves and their families. Subsistence agriculture may be of two types-simple subsistence agriculture and intensive subsistence agriculture.

Simple subsistence agriculture is practised by small tribal groups and is also called shifting agriculture. The farmers clear small parts of the forest by cutting and burning the trees and grow simple crops like millets and yam. After a few years, when the land becomes infertile they abandon the farms and move to another part of the forest and repeat the same process.

Shifting Agriculture

Shifting agriculture is called by different names in different parts of the world-Roco in Brazil, Jhumming, Bewar and Poda in India, Milpa in Central America and so on.

Intensive subsistence Agriculture is found in the densely populated monsoon lands of Asia. Rice is the dominant crop. Farms are very small and the farmers cultivate it intensively using manure, high yielding varieties of seeds and family labour. The land is never left fallow. Crop yield is very high. Rice and wheat are the chief crops grown.

b. Commercial Farming

This type of farming is also called extensive farming. In this type of farming, crops are raised on a very large scale and farming is mechanized. Wheat is the dominant crop and the yield per acre is low. Commercial farming is common in North America and Argentina in South America.

c. Plantation agriculture

Plantations are very large farms in tropical areas which involve heavy capital and the focus on crops like tea, coffee and rubber. These are usually perennial crops where the crops yield for many years. Plantations are found in Sri Lanka, Malaysia, India, Indonesia etc.,

d. Mixed Farming

This is a special type of farming found in the well developed parts of the world in which crops as well as livestock are raised. Such farms are common in Western Europe.

Primary Activity – II

Crops

A range of crops is grown by humans-some for food and others for fibre. Cereals form the basic diet of mankind. Cereals are grass like plants which have starchy edible seeds. The most common cereals are rice, wheat, maize and millets.

Foods crops

a. Rice

Rice is the most important staple food for a large majority of the human population especially in Asia and Latin America. Rice is a tropical crop which grows well in alluvial plains and river deltas. The parents species of rice is native to South Asia. Rice was first domesticated in the Yangtze River valley of China.

Conditions for the growth of rice

Rice requires an average temperature of 24°C and an average rainfall of 150 cm. where rainfall is inadequate the crop has to be irrigated. Rice requires a level surface because it is grown in stagnant water. Upland areas are terraced and levelled to create conditions for flooding. Rice can be cultivated thrice in a year in the river deltas. Alluvial soils are best suited for rice cultivation because of their high fertility. Rice is a labour intensive crop since the preparation of the field, sowing, transplanting, weeding and harvesting are done by hand.

Asia is the largest producer of rice. Asia accounts for 98% of the world's rice production. China, India, Indonesia and Bangladesh are the top 4 producers of rice. In India, rice is grown extensively in all the major river valleys.

b. Wheat

Wheat is a temperate crop and it is an essential part of the diet of the temperate regions. About 25% of the world's farmland is devoted to wheat cultivation.

Conditions for the growth of wheat

Wheat requires warm and moist condition in the early stages of growth and dry sunny conditions in the later stages. Temperature of 15°C - 20°C is ideal for wheat growth. It requires an average rainfall of 50 – 60 cm. it grows best in drained loamy soils. The world's best wheat comes from the soils of the temperate grasslands due to large amount of organic matter in the soil. Wheat cultivation is highly mechanized and requires open undulating topography. The world's greatest wheat producing areas are USA, China, Ukraine, Canada, Argentina, Australia, India and Pakistan. In India, U.P. Punjab and Haryana are the major wheat producing states.

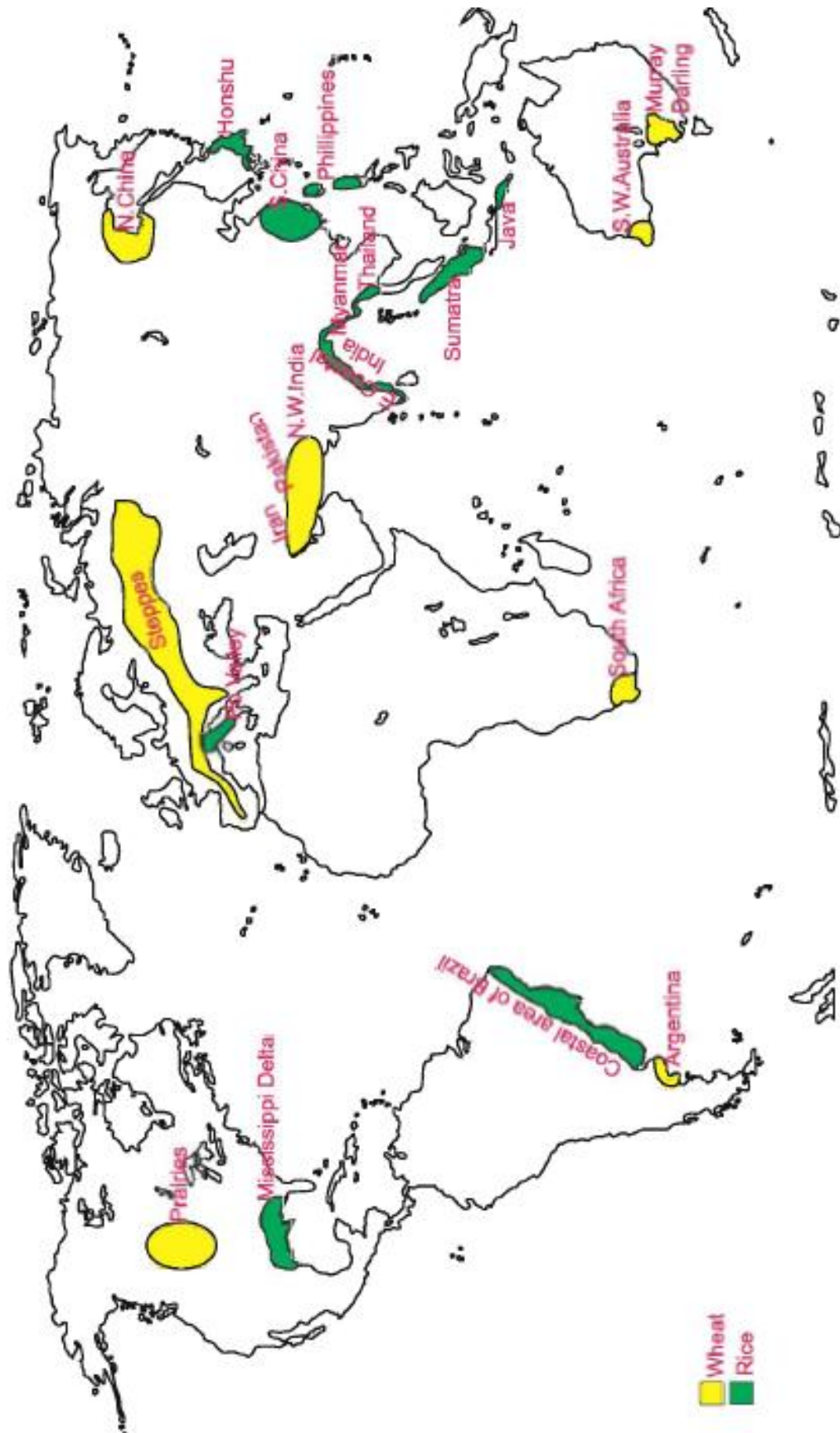
Fibre crops

Fibre crops include cotton, jute and flax.

a. Cotton

cotton is a shrub, native to tropical and sub-tropical regions. The soft fluffy fibre grows in a ball around the seeds of the cotton plant. The seeds are removed from the fibre by a process called ginning.

Major Wheat and Rice Producing Regions of the World



Conditions for the growth of Cotton

Cotton grows well in areas having temperature between 20 – 30°C and rainfall of 50-100 cm. Black soil and alluvial soils are best suited for cotton cultivation. It requires cheap and skilled labour, especially for handpicking cotton bolls. Cotton is harvested mechanically in some parts of the world. The leading producers of cotton are USA, Uzbekistan, Brazil and Pakistan.

In India, cotton producing states include Maharashtra, Gujarat, Tamil Nadu, Karnataka, Madhya Pradesh, Andhra Pradesh, Punjab and Haryana and parts of Rajasthan.

b. Jute

Jute is a long soft shiny vegetable fibre. Which can be spun into coarse strong threads. Jute is used for making jute bags, carpets and yarns. It is also known as the golden fibre.

Conditions for growth of Jute

Jute requires a high temperature of 30°C and rainfall of more than 150 cm. Well-drained fertile alluvial soil is ideal for the cultivation of jute. Cheap labour is required to obtain the fibre by retting the plant.

Retting is a microbiological process in which the plant is soaked in water for 2-3 weeks to soften the outer bark after which the fibre is removed.

India and Bangladesh are the major producers of jute.

Cash Crops**a. Sugarcane**

Sugarcane is a tall tropical grass which grows to a height of 3.5 m. It is cultivated almost everywhere in the tropics and the subtropics.

Conditions for the growth of sugar cane

Sugarcane requires a hot climate with an average temperature of 24°C throughout the year. It requires about 130 cm of rainfall and deep, well-drained fertile soils. It requires a large supply of cheap labour, especially during harvest.

Latin America, Southern and Eastern Asia are the main sugarcane producing regions. India, Pakistan, Indonesia and Brazil are important producers.

b. Tea

Tea is a beverage made from the leaves of a tropical shrub. Tea is a hardy perennial shrub. The plant is constantly trimmed to a height of 1.5m. to stimulate the growth of new leaves and to facilitate the picking of the leaves.

Conditions for the growth of Tea

Tea is cultivated on the hill slopes of the tropics and the subtropics. It requires an average temperature of 21°C and rainfall of 150 cm for its growth. Severe frosts damage the crop. Tea requires well-drained soils. Tea can withstand heavy winds and sunshine and hence it is grown on the windward slopes of the hills. It is a labour intensive crop.

China, India and Sri Lanka are the major producers of tea. In India tea is grown in Assam, West Bengal, Kerala and Tamil Nadu.

With advancement in science and technology man started to process natural resources of the Earth, including agricultural crops to make new products for his use. These activities of man are called as secondary activities. This will be dealt with, in the following chapters.

Secondary Activity – I**Industries**

The planet earth is rich in natural resources both mineral and agricultural. These resources are not useful to man in their original form. They must be processed and made into useful products.

Industry refers to any economic activity concerned with the processing of raw materials into finished products with the help of machines in a factory. This process of converting a raw material into a finished product is known as manufacturing. During the process of manufacturing value is added to the goods and it becomes useful to man.

Let us take the example of cotton. The cotton is spun into yarn, woven, dyed and printed before it becomes a product that is useful to man. Wood is converted to furniture or paper, silica to glass, gold and silver into jewellery etc.

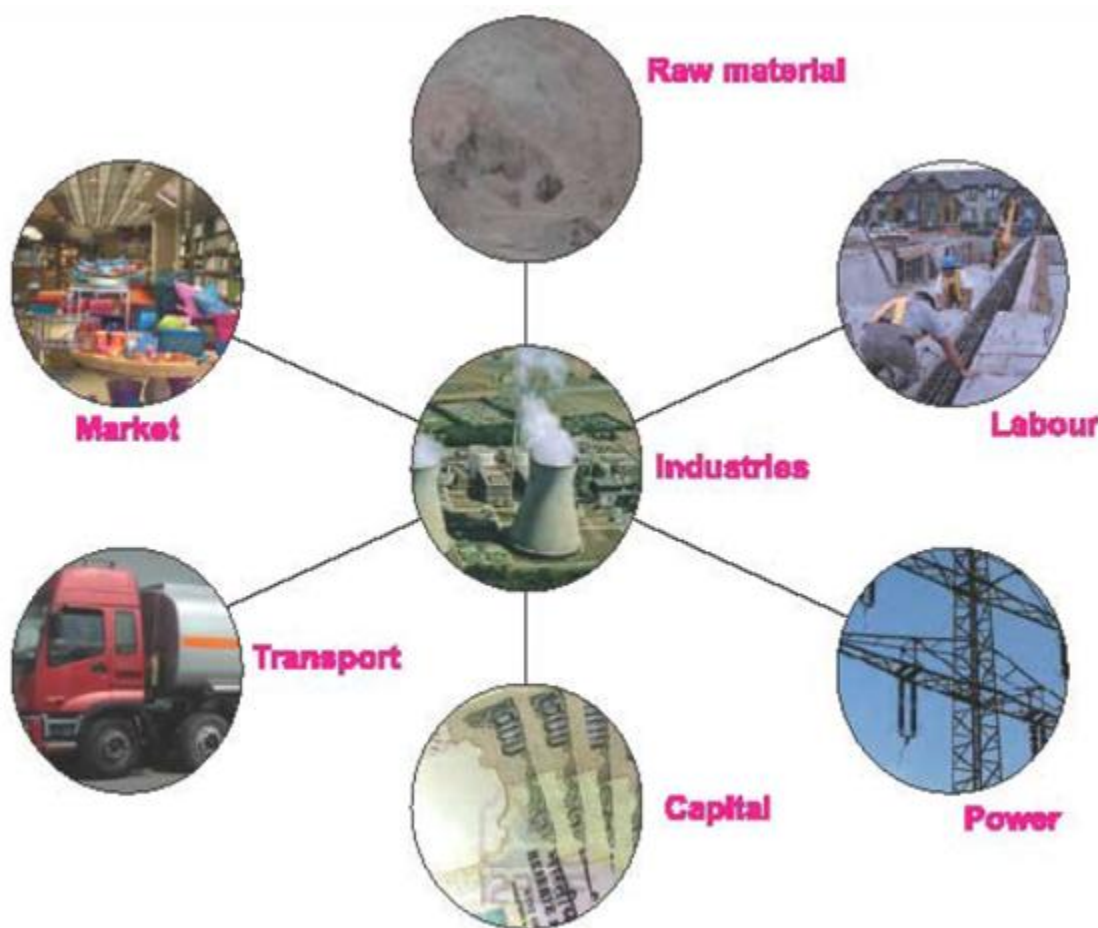
The Industrial revolution in the 18th and 19th centuries resulted in goods and services being produced in factories on a large scale. Coal was the first fuel to be used in industries. Today the economic strength of a country is measured in terms of its industries.

In India, industrialization developed after the Independence. The Five year plans played a major role in the development of the industries in the country.

Industries require large investments and so it is very important to take many factors into consideration before setting up an industry.

Factors affecting the location of industries

Industries cannot be developed everywhere. There are certain factors that influence the location of industries. These factors can be both geographical and human factors.



Factors that Influence the location of Industry

1. Raw material

Some industries require large quantities of heavy raw materials. Such industries are located near the raw materials to reduce the time and cost involved in transporting them. Iron and steel industries are always located near the coal mines or iron mines. For example, Tata Iron and Steel Industries are located near the Raniganj, Jharia and Bokaro coal fields.

2. Labour

Industries require a lot of cheap labour or manpower. Industries tend to locate in areas that have high populations. Countries like India and China have a large and cheap labour force.

Labour can be divided into skilled labour which has specific skills and semi-skilled labour which does not require specific skill. Diamond cutting industry is located at Surat because skilled workers are available there while the packing industry can be located anywhere as it does not require specific skills.

3. Power

Power is the basic requirement to operate machinery. The industrial sector uses about 70% of the total commercial energy available all over the world. Major sources of power for industries are thermal(coal) and hydroelectric (water). Industries are located in area where power is easily available.

4. Capital

Capital or money is essential to set up any industry. This is required for getting all the necessary inputs for the industry. Some industries require large investments of money while others are not capital intensive. Larger the industry, greater is the capital requirement. Industries develop in areas where capital is available for investment.

5. Transport

Transport is essential to procure raw materials from the sources to the industry and transfer the finished products to the market. Industries require fast and cost-effective modes of transport. Hence, industries are located in areas where transportation is well developed.

6. Proximity to Market

Certain industries are located near the market when they involve the assembling of numerous components for example, automobile industry. Industries producing perishable commodities like dairy products and fragile goods like glass are also located near markets.

One or more of the above geographical and human factors determine the location of industries worldwide. Other factors like climatic conditions and availability of water also influence the location of industries.

Secondary Activity II

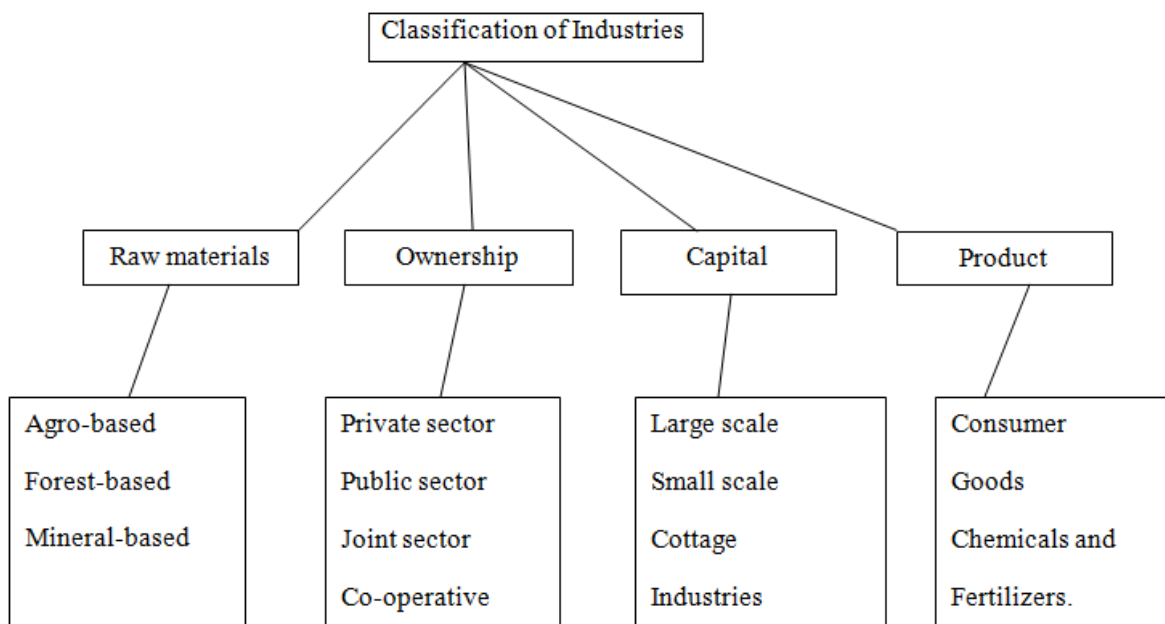
Types of Industries

Industries are very important for the rapid development of the economy of a country. They add significantly to the national income of a country and generate employment for its population. Industries can be classified as follows

Classification of Industries

Industries can be classified on the basis of :

- a) Raw materials
- b) Ownership.
- c) Capital involved and
- d) Product.



1) Based on raw materials

Based on the type of raw materials used, industries can be classified into the following types:

a) Forest based Industry

In this industry, the raw materials are obtained from the forests. Examples of such industries include paper industry and furniture making.

b) Agro-based industry

These industries use raw materials obtained from agriculture to produce new products like cotton textiles, jute products and sugar.

c) Mineral based industry

The raw materials for these industries are mineral ores. Examples of such industries are Iron and Steel, Cement, Aluminium and Chemicals.

II) Location

Based on the location of the industry, industries may be classified into:

a) Raw Material Oriented

These industries are located near the raw materials because of the bulky or peculiar nature of the raw materials. For example, iron and steel industries use large quantities of iron ore and coal and so they are located near the raw material sources. Sugar industry is located near the sugarcane fields because the sugar content decreases within 24 hours of harvesting the cane and so the cane has to be processed immediately.

b) Market oriented

These industries are located near the markets because of the perishable nature of the products. Example:

Milk and Milk products of Dairy industry.

c) Footloose industry

These industries can be located anywhere because the raw materials are small in size and light in weight. Example: Watch industry.

III) Size of Industry

Based on the scale of operations industries are divided into:

a) Large scale industry

These industries are large establishments which involve huge investment, the use of heavy machinery and the employment of a large number of workers. Example: Integral Coach Factory – Chennai, Tata Iron and Steel – Jamshedpur, BHEL – Trichy and SAIL – Salem.

b) Medium scale industry

These industries are medium in size and investment and are technology oriented. Example : Computer industry and electronic industry.

c) Small scale industry

These industries are small establishments with small investments and small labour force. It may involve domestic production. For example, hosiery, hand tools and stationery items.

d) Cottage industry

This type of industry is generally a household unit run by a family. Such industries produce all kinds of handicrafts handloom products, jewellery, pottery etc. the craftsmen carry on the traditional work started by their forefathers generations ago.

IV) Production Process

Based on the process involved in production, industries are categorized into:

a) Heavy industry

These industries use bulky raw materials and produce large and heavy products. They are capital and resource intensive industries and involve large scale manufacturing. Example: Iron

and Steel industry (TISCO), Heavy Electricals (BHEL) and Automobile industry (Ashok Leyland).

b) Light Industry

In these industries, both raw materials and finished products are light in weight. They are less capital intensive and consumer oriented. Example: hosiery, watch industry and household goods.

V) Nature of work

Under this criterion, different industries can be distinguished based on the nature of work.

They are:

a) Processing Industries

These industries process raw materials into semi-finished products. Examples of such industries are the tanning industry. Which converts skin and hide into leather in the tanneries, ginning industry which removes cotton seeds from cotton, and smelting of metallic ores.

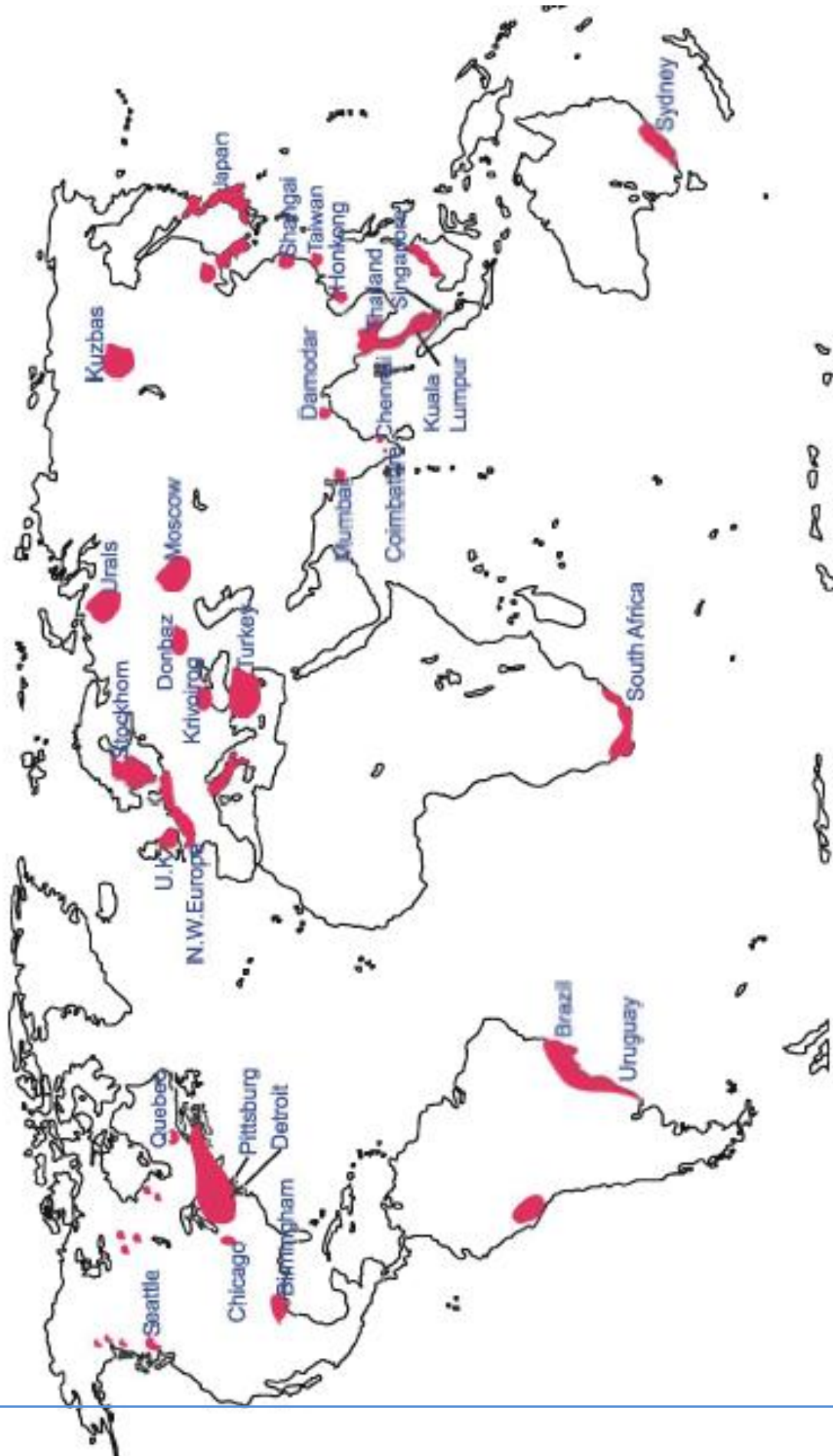
b) Manufacturing industries

These industries convert raw materials or semi-finished products into finished products. Examples of such industries are the textile industry which converts yarn into fabrics, the Iron and Steel industry which converts iron and steel into machinery and furniture industry in which timber is converted into furniture.

c) Assembling industry

These industries assemble or fit together various finished products to form new products. Examples of such industries include automobile industry and computer assembling.

Industrial Centers of the World



VI) Nature of Ownership

Based on the ownership of the industry, industries are classified into:

a) Public Sector

These industries are industries which are owned by the government. Example: the Steel Authority of India (SAIL) and Bharath Heavy Electricals Limited (BHEL).

b) Private Sector

These industries are owned by individuals or small groups. Example: Reliance.

Manufacturing industries are the chief wealth producing sectors of an economy.

The different types of industries contribute to the economic development of countries. Economically advanced countries are those that have a well developed industrial sector.

Geography Notes Part 12**Tertiary Activity I****Trade**

Trade is the exchange of commodities within or between countries. Trade occurs because of **surplus** of goods in one place and the **demand** for the same in another place. The difference in the natural resources of countries forms the basis of trade between countries.

The commodities entering into the world trade may fall into two main categories:

1. Primary products which includes cereals, fruits and other items grown as food and industrial raw materials such as mineral ores, fiber crops like cotton, jute etc and
2. Secondary products are manufactured goods.

Trade may take place within a country (Internal Trade) and between countries (International Trade). International trade may be bilateral or multilateral. Bilateral trade is the

exchange of commodities between two countries. Multilateral trade is between a number of countries.

Factors Affecting Trade

1. Uneven distribution of natural resources

Differences in climate, geology, soil, vegetation and mineral resources result in the exchange of goods.

2. Stage of industrial / economic development

Industrial countries export finished products to other less industrialized countries. The less developed countries export industrial raw materials and food products.

3. Differences in climate

Differences in climatic conditions result in different types of agricultural, animal and forest products. These are exchanged locally and internationally. Exchange of these goods takes place between different climatic regions. For example, temperate regions supply soft wood and dairy products. Tropical regions supply hardwood and tropical crops.

4. Differences in tradition of population

People in different regions, produce distinctive types of goods because of their long tradition of producing certain goods like silk fabrics in China and watches in Switzerland. Densely populated countries have less international trade, since domestic consumption of products is high and there is **little** surplus. However, they may export goods that are labour intensive. For example, Tea.

5. Transportation

Transportation has played an important role in the development of trade. The development of roads, oil pipelines and so on in a country facilitate international trade by transporting a variety of bulky goods to the ports.

6. Government Policies

International trade is influenced by political relationship among the countries. When the relationship between countries is good, then the trade will flourish well.

Trading blocs are associations between groups of neighbouring countries trade. For example: Association of South East Asian Trading Nations (ASEAN) and European Union(EU).

International Trade Flows

International trade flow is controlled by geographic, economic and political conditions.

Many countries enjoy geographical advantage over other countries in the production and trade of agricultural commodities and minerals. Therefore, they specialize in the trade of these commodities. For example, they import, oil from the Middle East, paper and wood pulp from Canada and Sweden and rubber and tin from Malaysia.

Trading Regions

The world's major trading regions are:

1. Europe

Europe is one of the most densely populated and highly industrialized regions and has the largest volume of trade (30%). The exports of this region are mainly finished and semi-finished products. Imports are mainly industrial raw materials.

2. North America

The USA has the largest volume of trade together with Canada and they export machinery, automobiles, chemicals and import a variety of products.

3. Latin America

This region covers the Caribbean islands and Central and South American countries. All of them are exporters of foodstuff and raw materials and importers of manufactured goods.

4. Africa

African countries are exporters of mineral ores and tropical raw materials and importers of manufactured goods.

5. Asia

Asian countries are rich in raw materials and minerals and export them. All Asian countries except Japan are importers of manufactured goods.

6. Australia

Australia exports agricultural products and minerals and imports foodgrains, petroleum and machinery.

Trade has a great impact on the economy of a country. The difference in values between imports and exports is referred to as the **balance of trade**. If the value of exports exceed imports, the country is said to have a favourable balance. When the value of imports exceeds the value of exports, the country has an adverse balance of trade.

Tertiary Activity II

Transport And Communications

Transportation is the movement of people and goods from one place to another place. A good transportation system in a region makes good use of its resources and manpower through movement and exchange resulting in economic growth. The major transport systems are discussed below.

Roadways

Roads are the most common mode of transportation in the world. There is a close relationship between road density, (Road density is the ratio between the total length of roads in a

country to its total land area) population density (The ratio between the total number of people in a country to its total land area) and the state of economic development of a country. The better the road connectivity, the greater the economic development.

Roads can be classified as transcontinental highways, national highways and local roads. The transcontinental highways are important as they are very long roads connecting the continents from end to end. The Trans-Canadian Highway, The Alaskan Highway, the Pan-American Express Highway and the Australian Transcontinental Highway are examples of such roads.

Increasing speed and number of roads vehicles has resulted in the development of multilane national highways. These are excellent straight roads cutting across the country through bridges and tunnels to reduce travel time. The autobahns of Germany were the first such roads.

The Grand Trunk Road in India

The Grand Trunk Road is India's longest major road running across North India connecting Sonargaon in Bangladesh and Peshawar in Pakistan for a distance of 2500 Km.

In India, the densest road network are the coastal regions of Tamil Nadu and Kerala and also West Bengal, Punjab, Haryana and U.P. In India roads are divided into National Highways, State Highways and District Roads.

Railways

Railways developed with the rise of industries because they were the cheapest and fastest means of transport for carrying bulky goods over long distances. Railway network is the densest in the highly developed industrialized regions of Europe and North America. Japan, India, S.E. Australia, and coastal Argentina have moderately dense railway network.

The Trans-Siberian Railway is a trans-continental railway line linking Leningrad on the Baltic coast of Russia with Vladivostok on the Pacific coastland. The Trans-Canadian Railway

links the East and West coasts of Canada. The Trans-Andean Railway links Buenos Aires(Argentina) with Valparaiso(Chile). The Trans-Asian Railway links Singapore with Istanbul in Turkey running through 26 countries for a length of 18000 Km.

Indian Railway is the second largest in Asia and the 4th largest in the world. It is the densest in the Gangetic plains of U.P., Bihar and West Bengal. The Indian Railway employs the largest workforce in the world.

In large metropolitan cities of India, intracity rail lines are constructed to ease the growing traffic congestion. These rail lines are either underground rail lines or elevated above the ground.

The **Mass Rapid Transit System(MRTS)** is an elevated line of the suburban railway in Chennai (Madras), Tamil Nadu. The MRTS line currently runs from Chennai Beach (Madras Beach) to Velachery, covering a distance of 25 km with 17 stations. Like the rest of the suburban railway network, the MRTS is operated by the Government-owned Southern Railways(SR).



MRTS & METRO RAIL Chennai

In 2015 Metro Rail transport started in Chennai from Koyambedu to Alandur.

Waterways

Waterways are the cheapest means of transport. They may be divided into inland waterways and ocean transport.

Inland Waterways

Deep navigable rivers with a perennial flow of water and navigation canals constitute the inland waterways. The most important inland waterway lies in the /industrially advanced countries of Western Europe, (such as the Rhine, Rhone, Danube and Elbe) North America and Canada(Great Lakes). These waterways in combination with the railways help wider movement of goods at lower costs in the industrial regions of these countries.



Rhine waterways

In India, inland waterways are limited to the river Brahmaputra in Assam and the Ganges and its tributaries in U.P. and Bihar.

Buckingham canal was once an important waterway in Tamil Nadu. It carried goods from Nellore to Marakkanam but sadly now it is a polluted channel.

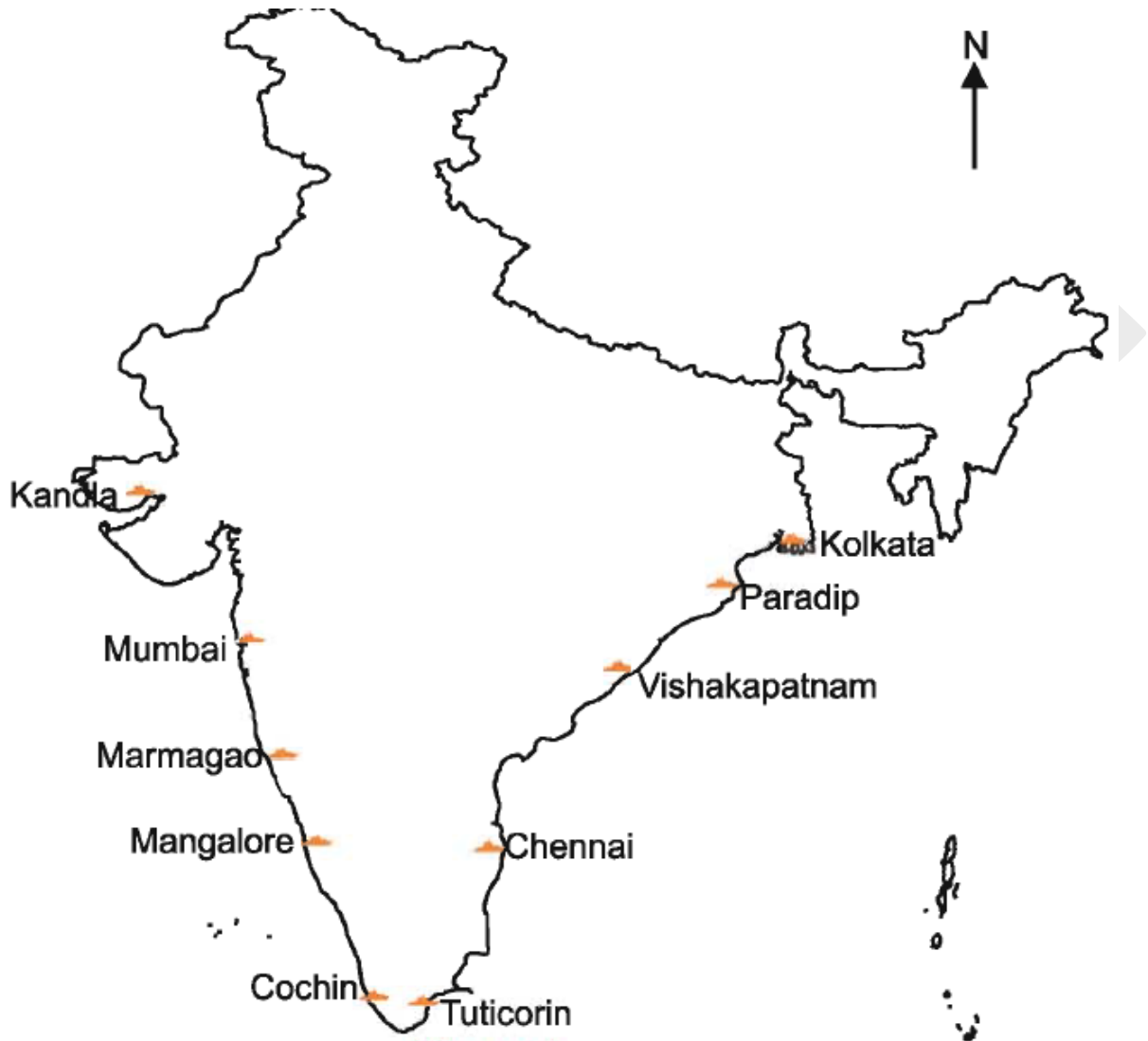
Ocean Transport

Ocean routes were one an important form of transport for intercontinental travel. Today, it is used mainly for transporting bulky cargo. The following are the major shipping routes of the world;

The North Atlantic route connecting the crowed countries of Europe to the Eastern coast of North America.

- The Cape of Good Hope route connecting Western and Southern Europe with South West Asia and Australia.
- The Panama Canal route connecting the west coast regions of North and South Americas with their east coastal regions.
- The Trans-Pacific route connecting the ports of Eastern Asia to the ports on the west coast ports of North America.
- India is bounded on the east by the Bay of Bengal, on the west by Arabian sea and on the south by the Indian ocean. It has a long coast line of 6100km(mainland). Some of the major pots are Kolkata, Paradip, Vishakapatnam, Chennai, Tuticorin, Cochin, Mangalore, Marmagao, Mumbai and Kandla.

Major ports of India



Airways

Airways are the fastest and costliest means of transport which carry passengers, freight and mail. Air travel has gained immense popularity because it not only saves time but also reduces it not only saves time but also reduces tiredness involved in covering long distances. Passengers from India can reach many European countries in a day.

Commercial airlines now connect all important parts of the world and a large proportion of the world's mail is carried by airways.

Pipelines

Pipelines are used to transfer commodities like oil and natural gas. The oil pipelines are privately owned by oil companies. The bulk of the world's crude oil from the oil fields is transported to the refineries or shipping terminals through pipelines.

Some of these pipelines are: Big Inch line from Texas to New Jersey,(TAPS) or the **Trans-Alaska Pipeline System** in North America. Tap line or the Trans-Arabian Pipeline from Qaisumah in Saudi Arabia to Sidon in Lebanon runs for a distance of 1214Km.

Communication

Communication involves transmission of words and messages. The different forms of communication are personal communication and mass communication. The first development in communication was the invention of the telegraph in 1844. The next important development was the invention of the telephone in 1875. The development of Telex(Telegraph Exchange) in 1935 enabled messages written in one place to be transmitted to distant places where they are typed out by a teleprinter.

Mass communication includes all those media designed to reach a large audience.

Mass communication can be divided into two categories-the print media(books, journals, magazines, newspapers) and the electronic media(radio, television, telecommunication, internet). In recent years, satellites have played an important role in communication both in India and the world. The Indian National Satellite(INSAT) has revolutionized communication in India in the recent years.

The development of transport and communication in a region helps increase the mobility of people, easy and fast movement of goods and transfer of ideas. This increases trade and economic prosperity of that region. Therefore, transport and communication is important for the development of a country.

Geography Notes Part 13

Population

Population Growth and Distribution

The period of economic change when man became a farmer altered the relationship between man and environment. Since then the population began to grow steadily.

Population Growth

The world population probably reached 500 million by 1650 and has since grown at an increasing rate. The world population first reached 1 billion in 1804. The second billion was added after 123 years in 1927. Since 1950, the rise in population has been rapid.

Table gives you an idea of how rapidly the world populations has been growing since 1804.

Year	World Population in billions	Time taken to add the next billion
1804	1	
1927	2	123 years
1960	3	33
1994	4	14
1987	5	13
1999	6	12
2011	7	12

Population Increase

Economic growth progressed with industrial and agricultural development, the improvements in medical care, health, flood control, fire protection etc helped to control the natural laws. This caused decrease in deaths and increase in births.

The growth of population or the natural increase of population depends on the birth rate and death rate. Birth rate is the number of live births in a year for every 1000 women in the total population. Death rate is the number of deaths per 1000 live births.

The differences between birth rate and death rate is termed as growth rate.

The phenomenal growth in population is because of changes in the patterns of birth and death rates. When both birth rates and death rates are high, the population does not grow much in size.

When birth rates are higher than death rates, the population will increase.

When the birth rate is low and the death rate is high, the population will decline.

Different countries are at different stages of population change. Presently the developed countries of the world have low birth and death rates. Developing countries have low death rates and high birth rates resulting in very high population. They are trying to control the birth rates in order to control their large population.

Today, there are some countries in the world with more deaths than births or an even number of deaths and births resulting in zero or negative natural population growth.

Country	Annual Natural Decrease(%)
Ukraine	0.8
Russia	0.6
Germany	0.2
Japan	0
Italy	0

Annual decrease

Population Distribution and Density

Population distribution refers to the pattern of spread of people on the Earth. World population distribution is uneven. About 90% of the Earth's people live on 10% of the land.

Population density is defined as the number of people per sq.km. It is calculated by dividing the number of people in a country by the area of that country.

The tiny country of Monaco has a population density of 16779 people per sq.km. However, Monaco has very high density because it is extremely small in size(1.95.sq.km). Bangladesh is considered the most densely populated country, with more than 1069 people per sq.km. Mongolia is the world's least densely populated country with only 1.7 people per sq.km. Australia is second with 2.9 people per sq.km.

Factors affecting the distribution and density of population

There are a range of natural factors and human factors that affect population distribution and density.

Physical Factors	High Density	Low Density
A) Physical Factors		
(i) Relief (shape and height of land)	Lowland which is flat. Examples Ganges Valley in India	High land that is mountainous; e.g. Himalayas
(ii) Climate	Areas with favourable climate tend to be densely populated as there is enough rain and heat to grow crops, e.g. India	Areas with extreme climates are sparsely populated: Eg. the hot deserts such as Sahara and the extremely cold areas like Greenland.
(iii) Resources	Areas rich in resources (Eg. minerals, fuel, forest, fish resources) tend to be densely populated. Eg. Western Europe.	Areas with few resources tend to be sparsely populated e.g. The Sahel in Africa
Physical Factors	High Density	Low Density
B. Human Factors		
(i) Political	Countries with stable governments tend to have high population density; example Singapore	Countries with unstable governments tend to have lower population densities as people move away; e.g. Afghanistan
(ii) Social	Groups of people prefer to live close to each other for security; example: USA	Other groups of people prefer to be isolated; e.g. Scandinavians
(iii) Economic	Good job opportunities	Limited job opportunities

	encourage high population densities, particularly in large cities in both the more economically developed countries (EMDCs) (example : Tokyo) and less economically developed countries (ELDCs) (example: Mumbai)	cause some areas to be sparsely populated; e.g. Amazon Rainforest
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Factors determining population densities

The following table shows the distribution and density of population in different continents.

Continent	Population (million)	% of World's Population	Density
Asia	3800	60	203
Africa	840	12	65
Europe	710	11	134
North America	514	08	32
South America	371	5.3	73
Australia	21	0.3	6.4

Distribution and density of population

The following table shows a list of countries. Notice that countries having high populations may not have high density of population.

Countries	Population	% of world	Density
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		population	(Population per sq.km)
People's Republic of China	1,338,890,000	19.5	139
India	1,183,770,000	17.3	360
USA	309,842,000	4.5	32
Indonesia	231,369,500	3.4	121
Brazil	193,262,000	2.8	23
Pakistan	170,124,000	2.5	211
Bangladesh	162,221,000	2.4	1069
Nigeria	154,729,000	2.3	168
Russia	141,927,297	2.1	8
Japan	127,530,000	1.9	337

Population statistics of selected countries of the world

High densities indicate a great crowding of people. We will see in the following lesson, the impact of population pressures on the land and its resources.

Population and Resources

As the population grows, the resource base is struggling to provide people with their requirements. There is a mismatch of people and resources.



The hunter-gatherer mode of production could only support very low population densities. When agriculture began to develop, it enabled a steady growth of population.

The increased population puts a lot of pressure on the available resources like land and water. Each year, the number of human beings increases, but the amount of natural resources with which to sustain this population remains Limited.

Developing countries with large and growing populations put a strain on the local environment and the limited resources. These countries that struggle to meet the growing demands for food, freshwater, timber and fuel alter the fragile environments.



Developed countries, in general, have and use more of the Earth's resources. Population pressure in the developed countries puts a greater strain on global resources and the environment than that in less developed countries because of their very high standards of living. Large and increasing population results in great pressure on the limited resources. The overexploitation of resources results in water scarcity, deforestation, desertification, food shortages, exhaustion of minerals and pollution.

Water

Use of water has been growing more than twice the rate of population increase in the last century. Demand of water already exceeds supply in many parts of the world. Freshwater constitutes barely 0.03% of the water that is available on the Earth's surface. Increasing population overexploits and pollutes the surface and underground water. The water is polluted by industries and in the developing countries 95% of the sewage is let into rivers.

As the pressure on water resources intensifies, it leads to tensions and conflicts among users. By 2025, five billion people will be affected by severe water scarcity.

India has 20 percent of the Earth's population, but only four percent of its water.

Food supply and land availability

As population increases, food supply has to increase. In Africa and Asia, rural population nearly doubled between 1950 and 1985, with a corresponding decline in land availability.

Existing farmlands decline because of changing land uses especially near urban areas. To overcome the shortage of land people clear forests for cultivation.

Deforestation

Eighty percent of the world's natural forests is destroyed by human development activities like logging, clearing for agriculture and grazing. Deforestation results in droughts, soil erosion, flooding, and global warming.

Desertification

One third of the Earth's land surface(35%) is threatened by desertification. It affects a large number of people living in 110 countries. Desertification occurs in the semi-arid lands and desertification is impossible to reverse.

Minerals

As the world's demand for minerals increases, minerals are being mined at greater depths. This leads to ground pollution and lowers the water table.

Fuel

About 80% of the world's commercial energy comes from non-renewable fossil fuels like coal, oil and natural gas. The world's use of fossil fuels has nearly doubled every 20 years since 1900. There is a decline in the availability of these fossil fuels.

Land Degradation

The land is degraded by a combination of human activities. The land, air and water are highly polluted. The land is affected by landslides induced by massive deforestation, soil erosion,

decline in soil fertility, extensive water logging and salination in irrigated areas, unscientific mining, quarrying, road building, and waste disposal.

Satellite technology and Resources

As population increases, people have to find ways and means of finding additional reserves of minerals and ground water. There is a need for organized sharing of these limited resources for the benefit of human kind. This requires an understanding of the distribution and availability of natural resources over the Earth.

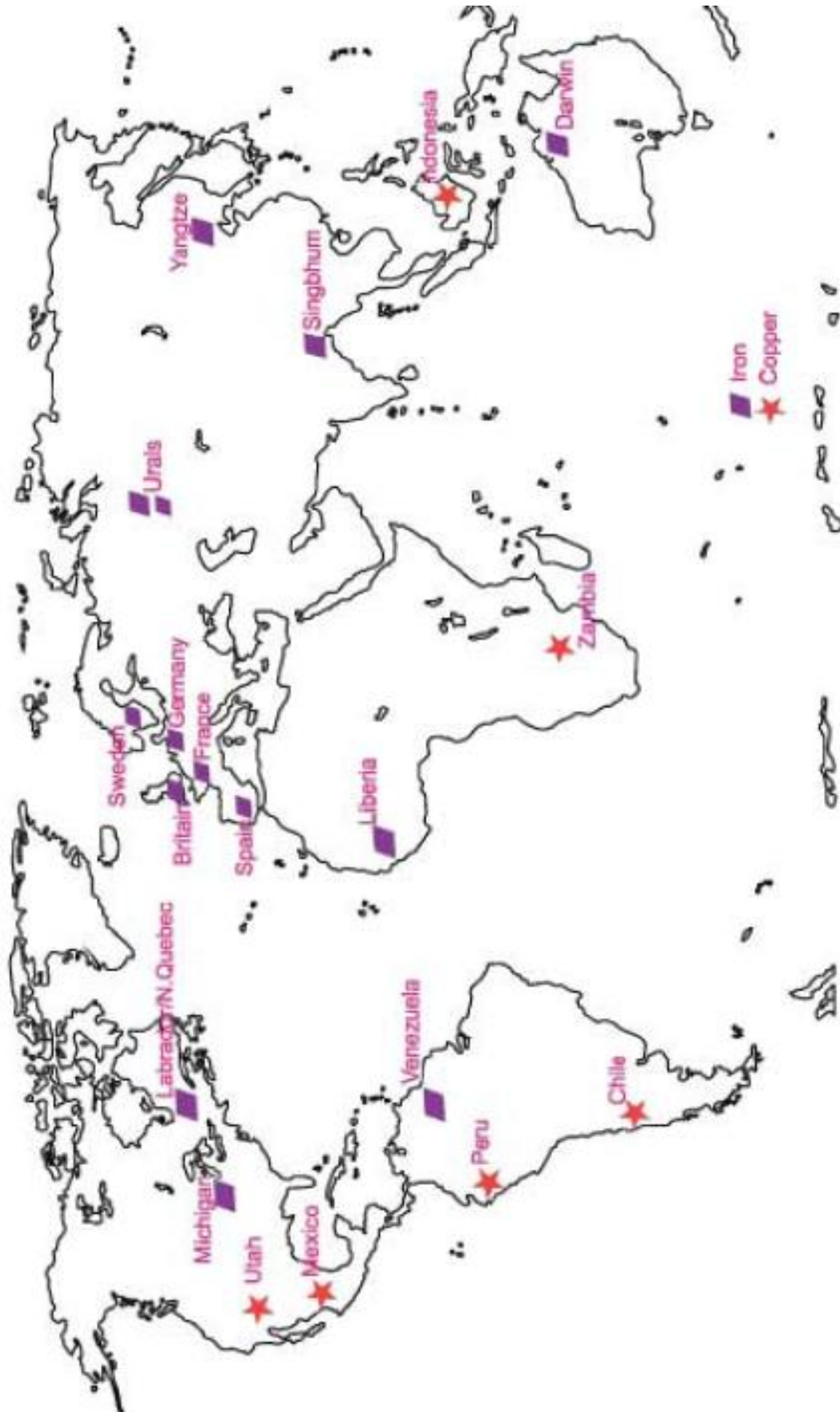
The development of space technology after the World Wars opened up new ways of understanding the Earth's resources. The first artificial satellite, Sputnik1, was launched by the Soviet Union in 1957. This was followed by the launch of a number of satellites by different countries for various purposes. These include Earth Observation satellites, Communication satellites, Navigation satellites, Weather Satellites and Research Satellites.

Earth Observation satellites or Remote Sensing satellites help in finding and managing resources. Remote sensing satellites play an important role in natural resources inventory, environmental monitoring and management. Important remote sensing satellites include LANDSAT of USA, SPOT of France, KITSAT of Korea and Yaogan of China.

The first **Indian Remote Sensing** Satellite IRS1A was launched in 1988. This was followed by the launch of a series of other satellites like IRS-1B, 1C, 1D, P3, P5, P6, CARTOSAT and RESOURCESAT.

The remote sensing data provide valuable information about land resources such as geology, soil, vegetation cover, water bodies and minerals. This information helps countries to plan for a sustainable future.

Major Iron and Copper Regions of the World



Bauxite

Bauxite is the ore of aluminium. Bauxite is extracted from open pit mines. Australia, Brazil, Jamaica and Guinea have large reserves of bauxite.

Tin

The ore is called cassiterite. The ore is obtained by alluvial mining. Tin is mined in Malaysia, Bolivia, Indonesia, China, Russia, Nigeria and Congo.

Gold

Gold is a precious metal that is extracted through the placer or alluvial method. Carat is the term used to denote purity of the gold. The largest producers are South Africa, Canada, USA, Australia and Ghana.

Non-metallic Minerals

Salt, potash, nitrates, sulphur, mica, rock salt and phosphates are non-metallic minerals. Rubies and diamonds are also classified as non-metallic.

Sulphur

It is extracted through underground mining. It is a bright yellow mineral. Heavy chemical industries require sulphur to produce chemical products. The USA, Mexico, Italy and Japan are large producers.

Mica

Mica is a black, transparent mineral that splits easily into thin sheets. Mica is used in electrical industries. The USA, India, Norway, Brazil and Russia are important producers.

Asbestos

Generally extracted from open pit mines. It is used to make fire proof materials. It is mined in Canada, Russia, Brazil, South Africa, Rhodesia, China, USA and Italy.

Mineral Fuels

The three major sources of Power resources are coal, oil and natural gas. These non-renewable minerals have been discussed in an earlier lesson.

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