Distribution of Minerals

Minerals occur in different types of rocks. Some are found in igneous rocks, some in metamorphic rocks while others occur in sedimentary rocks. Generally, metallic minerals are found in igneous and metamorphic rock formations that form large plateaus. Iron-ore in north Sweden, copper and nickel deposits in Ontario, Canada, iron, nickel, chromites and platinum in South Africa are examples of minerals found in igneous and metamorphic rocks. Sedimentary rock formations of plains and young fold mountains contain non-metallic minerals like limestone. Limestone deposits of Caucasus region of France, manganese deposits of Georgia and Ukraine and phosphate beds of Algeria are some examples. Mineral fuels such as coal and petroleum are also found in the sedimentary strata.

Asia

China and India have large iron ore deposits. The continent produces more than half of the world's tin.

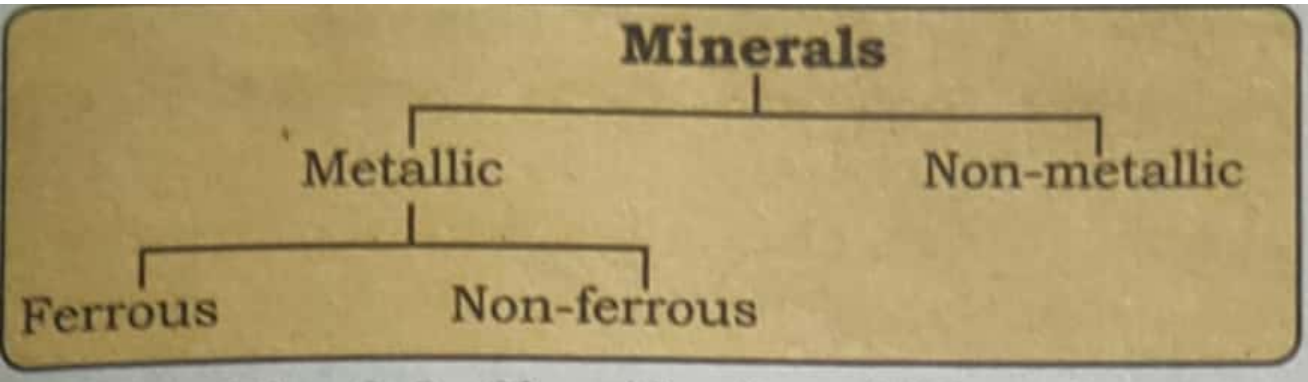


Fig. 3.2: *Classification of Minerals*

llic minerals contain metal in raw form. Metals are substances that conduct heat and electricity and a characteristic lustre or shine. Iron ore, bauxite, anese ore are some examples. Metallic minerals

largest produce[illegible]
Africa, Zimbabwe and Zaire produce a large portion of the world's gold. The other minerals found in Africa are copper, iron ore, chromium, uranium, cobalt and bauxite. Oil is found in Nigeria, Libya and Angola.

AUSTRALIA

Australia is the largest producer of bauxite in the world. It is a leading producer of gold, diamond, iron ore, tin and nickel. It is also rich in copper, lead, zinc and manganese. Kalgoorlie and Coolgardie[illegible]

China, Malaysia and Indonesia are among the world's leading tin producers. China also leads in production of lead, antimony and tungsten. Asia also has deposits of manganese, bauxite, nickel, zinc and copper.

EUROPE

Europe is the leading producer of iron-ore in the world. The countries with large deposits of iron ore are Russia, Ukraine, Sweden and France. Minerals deposits of copper, lead, zinc, manganese and nickel are found in eastern Europe and European Russia.

NORTH AMERICA

The mineral deposits in North America are located in three zones: the Canadian region north of the Great Lakes, the Appalachian region and the mountain ranges of the west. Iron ore, nickel, gold, uranium and copper are mined in the Canadian Shield Region, coal in the Appalachians region. Western Cordilleras have vast deposits of copper, lead, zinc, gold and silver.

throughout the earth's rocky

A naturally occurring substance that has a definite chemical composition is a **mineral**. Minerals are not evenly distributed over space. They are concentrated in a particular area or rock formations. Some minerals are found in areas which are not easily accessible such as the Arctic ocean bed and Antarctica.

Minerals are formed in different types of geological environments, under varying conditions. They are created by natural processes without any human interference. They can be identified on the basis of their physical properties such as colour, density, hardness and chemical property such as solubility.

Based on size, industries
scale and **large scale industries**. Cottage or household industries are a type of small scale industry where the products are manufactured by hand, by the artisans. Basket weaving, handicrafts are examples

has more value
is made from.

Industry refers to an economic activity that is concerned with production of goods, extraction of minerals or the provision of services. Thus we have iron and steel industry (production of goods), coal mining industry (extraction of coal) and tourism industry (service provider).

Classification of Industries

Industries can be classified on the basis of raw materials, size and ownership.

Distribution Of Major Industries

The world's major industries are the iron and steel industry, the textile industry and the information technology industry. The iron and steel and textile industry are the older industries while information technology is an emerging industry.

The countries in which iron and steel industry is located are Germany, USA, China, Japan and Russia. Textile industry is concentrated in India, Hong Kong, South Korea, Japan and Taiwan. The major hubs of Information technology industry are the Silicon valley of Central California and the Bangalore region of India.

Iron and Steel Industry

Like other industries iron and steel industry too comprises various inputs, processes and outputs. This is a feeder industry whose products are used as raw material for other industries.

The inputs for the industry include raw materials such as iron ore, coal and limestone, along with labour, capital, site and other infrastructure. The process of converting iron ore into steel involves many stages. The raw material is put in the blast furnace where it undergoes smelting (Fig 5.6). It is then refined. The output obtained is steel which may be used by other industries as raw material.

advantage of raw materials, cheap labour, transport and market. All the important steel producing centres such as Bhilai, Durgapur, Burnpur, Jamshedpur, Rourkela, Bokaro are situated in a region that spreads over four states — West Bengal, Jharkhand, Orissa and Chhattisgarh. Bhadravati and Vijay Nagar in Karnataka, Vishakhapatnam in Andhra Pradesh, Salem in Tamil Nadu are other important steel centres utilising local resources. India's steel production increased from one million tonne in 1947 to 30 million tonnes in 2002.

TATA IRON AND STEEL COMPANY, JAMSHEDPUR

Before 1947, there was only one iron and steel plant in the country – Tata Iron and Steel Company Limited (TISCO). It was privately owned. After Independence, the government took the initiative and set up several iron and steel plants. TISCO was started in 1907 at Sakchi, near the confluence of the rivers Subarnarekha and Kharkai in Jharkhand. Geographically, Jamshedpur is the most conveniently situated iron and steel centre in the country.

of iron or steel or has been made with tools and machinery of these metals. Ships, trains, trucks, and autos are made largely of steel. Even the safety pins and the needles you use are made from steel. Oil wells are drilled with steel machinery. Steel pipelines transport oil. Minerals are mined with steel equipment. Farm machines are mostly steel. Large buildings have steel framework.

Before 1800 A.D. iron and steel industry was located where raw materials, power supply and running water were easily available. Later the ideal

2: The best location from 1800 to 1950

mills and ancillary industries.

Pittsburgh : It is an important steel city of the United States of America. The steel industry at Pittsburgh enjoys locational advantages. Some of the raw material such as coal is available locally, while the iron ore comes from the iron mines at Minnesota, about 1500 km from Pittsburgh. Between these mines and Pittsburgh is one of the world's best routes for shipping ore cheaply – the famous Great Lakes waterway. Trains carry the ore from the Great Lakes to the Pittsburgh area. The Ohio, the Monogahela and Allegheny rivers provide adequate water supply.

Today, very few of the large steel mills are in Pittsburgh itself. They are located in the valleys of the Monogahela and Allegheny rivers above Pittsburgh and along the Ohio River below it. Finished steel is transported to the market by both land and water routes.

The Pittsburgh area has many factories other than steel mills. These use steel as their raw material to make many different products such as railroad equipment, heavy machinery and rails.

Cotton Textile Industry

Weaving cloth from yarn is an ancient art. Cotton, wool, silk, jute, flax have been used for making cloth. The textile industry can be divided on the basis of raw materials used in them. Fibres are the raw material of textile industry. Fibres can be natural or man-made. Natural fibres are obtained from wool, silk, cotton, linen and jute. Man made fibres include nylon, polyester, acrylic and rayon.

The cotton textile industry is one of the oldest industries in the world. Till the industrial revolution in the 18th century, cotton cloth was made using hand spinning techniques (wheels) and looms. In 18th century power looms facilitated the development of cotton textile industry, first in Britain and later in other parts of the world. Today India, China, Japan and the USA are important producers of cotton textiles.

India has a glorious tradition of producing excellent quality cotton textiles. Before the British rule, Indian

NT

hand spun and hand woven cloth already had a wide market. The *Muslins* of Dhaka, *Chintzes* of Masulipatnam, *Calicos* of Calicut and Gold-wrought cotton of Burhanpur, Surat and Vadodara were known worldwide for their quality and design. But the production of hand woven cotton textile was expensive and time consuming. Hence, traditional cotton textile industry could not face the competition from the new textile mills of the West, which produced cheap and good quality fabrics through mechanized industrial units.

The first successful mechanized textile mill was established in Mumbai in 1854. The warm, moist climate, a port for importing machinery, availability of raw material and skilled labour resulted in rapid expansion of the industry in the region.

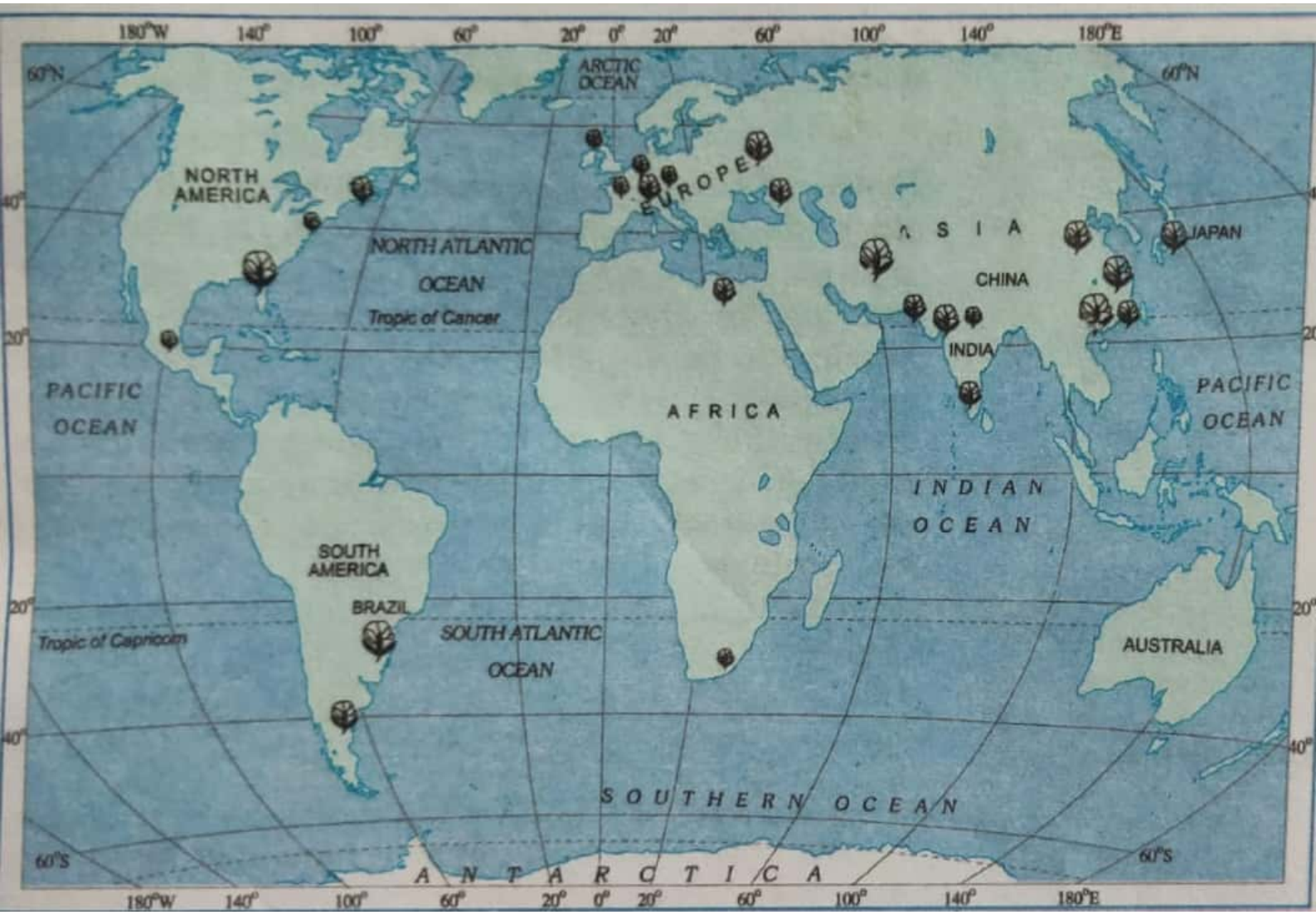
Initially this industry flourished in the states of Maharashtra and Gujarat because of favourable humid climate. But today, humidity can be created artificially, and raw cotton is a pure and not weight losing raw material, so this industry has spread to other parts

of India. Coimbatore, Kanpur, Chennai, Ahmedabad, Mumbai, Kolkata, Ludhiana, Puducherry and Panipat are some of the other important centres.

Ahmedabad : It is located in Gujarat on the banks of the Sabarmati river. The first mill was established in 1859. It soon became the second largest textile city of India, after Mumbai. Ahmedabad was therefore often referred to as the 'Manchester of India'. Favourable locational factors were responsible for the development of the textile industry in Ahmedabad. Ahmedabad is situated very close to cotton growing area. This ensures easy availability of raw material. The climate is ideal for spinning and weaving. The flat terrain and easy availability of land is suitable for the establishment of the mills. The densely populated states of Gujarat and Maharashtra provide both skilled and semi-skilled labour. Well developed road and railway network permits easy transportation of textiles to different parts of the country, thus providing easy access to the market. Mumbai port nearby facilitates import of machinery and export of cotton textiles.

But in the recent years, Ahmedabad textile mills have been having some problems. Several textile mills have closed down. This is primarily due to the emergence of new textile centres in the country as well as non-upgradation of machines and technology in the mills of Ahmedabad.

Osaka : It is an important textile centre of Japan, also known as the 'Manchester of Japan'. The textile industry developed in Osaka due to several geographical factors. The extensive plain around Osaka ensured that land was easily available for the growth of cotton mills. Warm humid climate is well suited to spinning and weaving. The river Yodo provides sufficient water for the mills. Labour is easily available. Location of port facilitates import of raw cotton and for exporting textiles. The textile industry at Osaka depends completely upon imported raw materials. Cotton is imported from Egypt, India, China and USA. The finished product is mostly exported and has a good market due to good quality and low price. Though it is one of the important textile cities in the country, of late, the cotton textile industry of Osaka has been replaced by other industries, such as



When the emphasis is firmly placed on human rather than nature, and humans are seen as an active force rather than a passive one, the approach is that of POSSIBILISM. Lucian Febvre the first to use the term Possibilism, wrote that "there is no necessities, but every where possibilities; and man as master of these possibilities is the judge of their use." Although the concept of Possibilism had become quite popular after the world war I, it was Vidal de La Blache, who advocated and developed systematically the school of Possibilism. He opined that the life styles of people were the product and reflections of a civilisation, representing the integrated result

goods (and bads) enjoyed or endured by the population in the form of commodity, services, Environmental Quality and so on. The "where" reflects the fact that living standards differ according to area of residence. The "how" refers to the process whereby the observed differences arise. The welfare approach now has merged with other lines of inquiry.

Humanism is yet another approach in Human Geography that lays emphasis on the Central & Active role of humans in terms of human awareness, human agency, human consciousness and human creativity. In other words, this approach is on the self of an human being.

The rapid emergence of new approaches in Human Geography in the last four decades is mainly due to a dramatic shift in Human Geography from description of the pattern of Human phenomena to the understanding of the processes working behind these patterns. In the process, human Geography has become more humane.

MD. IMRAN KHAN
FACULTY IN GEOGRAPHY
CLUSTER UNIVERSITY
OF JAMMU.

fertile soils. Great civilisations were built on the foundation of sedentary agriculture in the fertile river valleys – the Euphrates, the Tigris, the Nile, the Indus, the Huang He and the Chang Jiang, about 6,000 years ago. Gradually, the sedentary system of agriculture spread over most parts of the world.

The industrial revolution, which took place in the eighteenth century in Europe, influenced Asia, Africa and Latin America indirectly. It boosted agricultural production in Europe and changed the cropping pattern in the Asian, African and Latin American colonies. These colonies specialised in the production of crops such as cotton, sugarcane, rice, tea, coffee and rubber, which were processed in the European factories. As demands for these crops grew in Europe, the large-scale commercial farming of some of these crops, commonly known as *plantation agriculture*, was started. Large estates of monocrop were established. They were managed scientifically with the sole objective of export or trading for earning money.

One of the effects of colonisation was worldwide diffusion and exchange of several species of plants and animals. For example, potatoes, a native of the Andes, flourished in the cool damp environment of the northern Europe and soon became a world crop. Similarly, corn (maize) spread across the world to become the third most widely grown grain after rice and wheat.

The industrial revolution in Europe provided more efficient and more specialised agricultural implements such as plough, reaper, threshing machines, harvesters, tractors and milking machines. They changed the character, scale and geography of agricultural production. In North America, mechanisation enabled farmers to expand and specialise in the production of commodities that could be sold for the maximum profit. Thus *specialised commercial agricultural systems* emerged there, which gave rise to distinct crop regions—wheat belt, cotton belt, corn belt, dairy farming and truck farming (fruits and vegetables) regions. In other parts of the world also, similar technological revolutions brought power driven machines. In addition, adoption of hybrid seeds, chemical fertilisers and pesticides increased the yield of crops dramatically in many areas, though at varying rates.

Plant dispersal and industrialisation of agriculture improved agricultural production profoundly. Large number of people were freed to pursue other economic activities because high yields could be achieved with less number of people and using scientific and technological innovations. The industrialised countries of the world, therefore, witnessed a perceptible shift of population from primary activities to secondary and tertiary activities in a sequential manner viewed as a sign of economic development, though in developing countries employment structure has moved directly from primary to tertiary sectors.

CROP DISTRIBUTION : A GLOBAL PATTERN

Physical environment, which includes climate, soil and relief, imposes certain broad limits within which particular crops may be successfully cultivated or certain types of livestock profitably reared. Besides, socio-economic institutions are also important factors in crop production.

Climate

Temperature and rainfall are the two most important climatic factors in limiting the areas for the growth of particular crops.

Temperature

It is an important determinant of the distribution of crops because suitable temperature conditions are essential for the successful germination of seeds and plant growth. On the basis of the temperature requirements, crops may be divided into two categories : crops adapted to the high temperature conditions of the tropics, and those adapted to the lower temperature conditions of the sub-tropical and temperate areas.

Tropical crops, adapted to high temperature conditions (31°C - 37°C) may be damaged, if temperature falls below 0°C and

POSITIVISM appeared as a new approach in the mid-fifties, which laid stress on the use of Quantitative techniques to induce Greater Objectivity in analysing the Geographical pattern of various phenomena under study. Scholars such as B.J.L. Berry, David Harvey and William Bunge are among some of the proponents of this approach. This approach was later on criticised for laying excessive emphasis on so called "sterile" quantitat-ive techniques rather than analysing such aspects of people, such as decision-making, beliefs and fears. As a reaction of Positivism emerged Behavioural Approach, a concept borrowed from Psychology. In this approach, emphasis [illegible] Cognitive Power of Human beings.

frosts occur. A few of them are so susceptible to cold that they will die at a temperature below 10°C. However, some of the temperate crops can be grown in the tropics at higher altitudes such as apples, wheat and oats.

Crops grown in the sub-tropics and the temperate regions are adapted to lower temperature. The *growing season* (between the last frost in winter and the first frost in autumn) is very crucial for the growth of plants in these regions. As one moves towards the poles, this period gets smaller. As such, the number of crops that can be grown polewards, also declines. North of the Arctic Circle only rye and oats have some significance.

Similarly, many crops also have limits towards the equator. Some of them need a cold period to trigger growth and cannot withstand high rainfall. They are also susceptible to diseases found in the tropics. There are a few crops e.g. flax and olives that are grown in a very narrow zone due to such climatic limitations. Despite varying temperature requirements, most of the crops need 5°C -7°C temperature during seed germination.

Rainfall

It provides moisture to the soil that is essential for crop growth. Every plant has a root system with an enormous total surface area to draw water from the soil. Water-need of plants varies. While wheat requires about 1,500 kg of water to produce 1 kg of wheat, for the same amount of rice, 10,000 kg of water is required.

In the absence of sufficient amount of water, the plants cannot grow. It, however, does not mean that crop yields will increase proportionally with increasing amount of water supply. In contrast, if the supply of water is more than the plant's requirement, there will be decline in the crop yield. There is an optimum amount of water for every crop and this requirement varies significantly from one crop to the other. Rubber and tea, for example, need over 150 cm of annual rainfall. Wheat, on the other hand, can be grown in regions having the annual rainfall between 25 and 100 cm. Since more than 50 per cent of the land surface on the earth receives the annual rainfall between 25 cm and 100 cm, wheat is the most widely grown crop. About 10 per cent of the land has more than 178 cm of annual rainfall and only 5 per cent of the land receives over 254 cm. As such tea and rubber, have a much more restricted distribution.

The deficiency in the rainfall can be overcome with the help of irrigation either from groundwater or from rivers and tanks. The amount of water available in the soil for the crop also depends on the rate of evaporation, which increases with temperature. Hence, crops in the tropics need higher rainfall than in the temperate zone.

Soil

Soil is the essential material upon which all agriculture is based. Soil characteristics are largely the product of the climate. In addition to temperature and rainfall, plants need nutrients, which are mostly obtained from the soil. We have already read about the soil formation process in earlier classes. As we know, interaction and mixing of weathered rock with organic (plant and animal) matter along with groundwater produce the soil in which the plants grow. They contain minerals, which are essential for plant growth. The soil forming process makes the original elements of the rock more mobile so that plants could use them as nutrients.

There are six major nutrient elements. They are: nitrogen, phosphorus, potassium, calcium, magnesium and sulphur. Besides, iron and small quantities of trace elements such as boron and iodine are also required by plants. The capacity to provide nutrients varies greatly among different soils depending on the composition of the original rocks and the climatic factors — temperature and rainfall of the region. In tropical regions, the nutrients are easily leached out because of high rainfall. In temperate regions, the soils have more nutrients. Desert soils have high concentration of nutrients but the lack of water makes them immobile and unavailable.

The nutrients are replaced in the soil naturally through decomposition of plant and

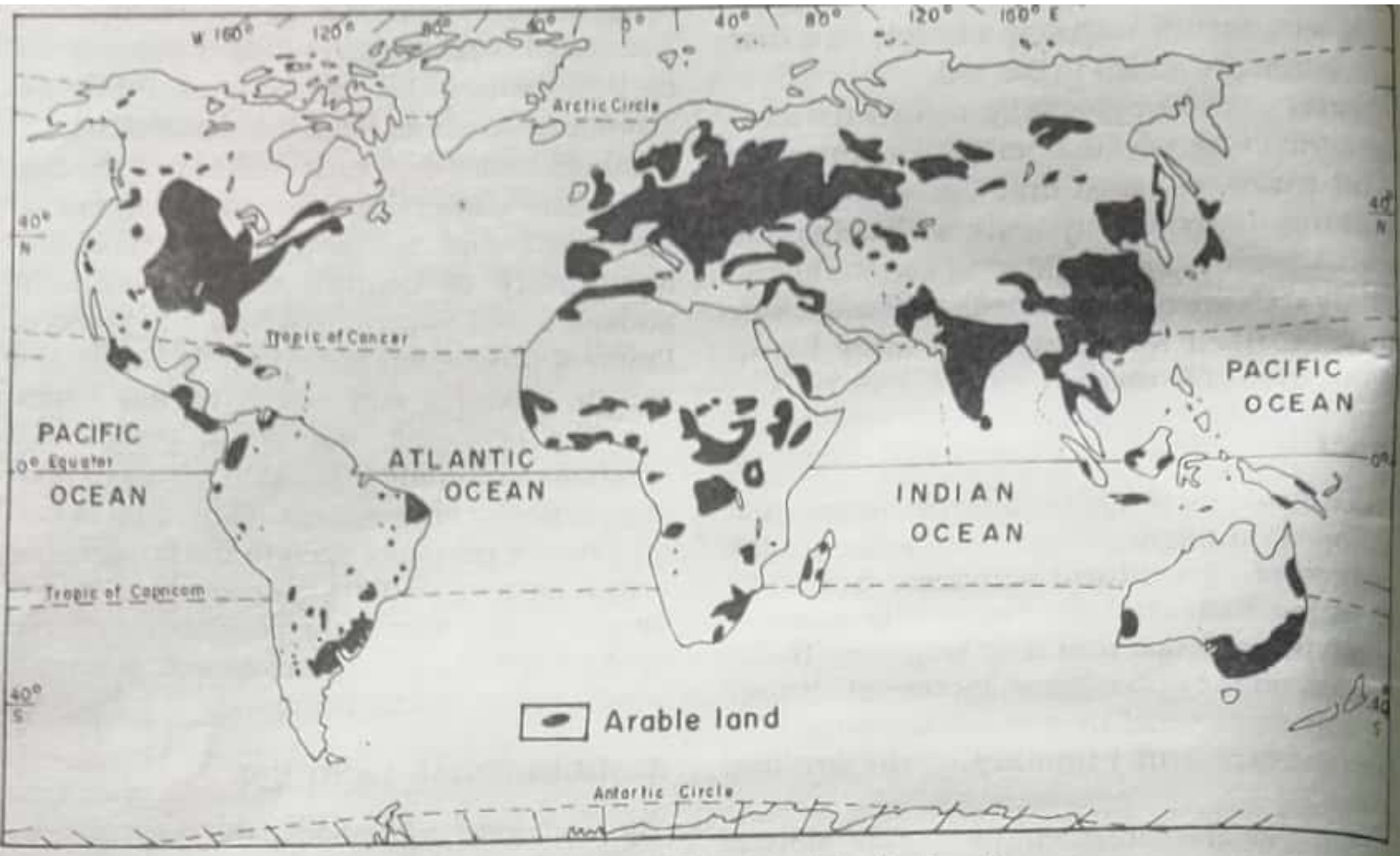


Fig 5.2 World : Distribution of Arable Land

0 per cent is arable and 31 per cent is under ther uses.

Crops are generally, categorised on the ases of their various uses such as cereals, ulses, oilseeds, fibres and beverages. The ther way is to group them under food crops nd non-food crops. Few crops have been elected for a detailed study keeping in view heir importance and area under their ultivation. In our discussion we will be overing mainly food crops – their distribution attern, production and sustainability able 5.2).

OOD CROPS

ood for the world's population is obtained most entirely from plants. Of the immense rieties of plants, only a few were mesticated thousands of years ago and they l continue to be the major food sources. ese species have three common racteristics: high production per unit of d; high food value; and storage ability.

It is interesting to note that the world's food supply is dominated by five crops. Of these, three are cereal grains : wheat, rice and maize (corn), and the other two : potatoes and cassava, are tubers. All of them share the above mentioned qualities. In combination they provide the staple food to nearly all the humans on the earth (Table 5.2).

The production characteristics of these staple crops as given in Table 5.2 reveals differences in the areas under each crop as well as in the average yield in developed and developing countries.

The difference in the area of the five major food crops is mainly because of the climatic requirements of the crop, which limit their cultivation. The developing countries in comparison to the developed countries have higher per hectare yield due to their relative access to agricultural technology such as the

range of pesticides, fertilisers, hybrids and machineries.

Rice

It is suggested that rice originated in the foothills of the eastern Himalayas in north-east India, Indo-China and south-west China perhaps on the basis of the large concentration of several perennial species. Based on the archaeological evidences, the earliest date of rice cultivation is supposed to be 7,000 years ago in the Chang-Jiang delta. Its cultivation spread to the remaining southern and eastern Asia over the next 6,000 years. While its cultivation was originally carried out in swamps, it spread to new areas, which meant its adaptation to a wide range of environmental conditions — temperature, day-length, rainfall and different soil types. As a result, the range of rice varieties is very broad, varying from the less humid upland conditions to the varieties of 'floating' rice, which can be grown in water upto 5 metres deep. There are more than 65,000 local varieties of rice grown the world over.

Rice is mainly the crop of the monsoon Asia, having hot and humid climate (Fig 5.3). Traditionally, rice was grown in the well-watered river valleys and deltas. However, with the help of irrigation it is now grown even on uplands and dry areas. The rice-plant (paddy) requires high temperature (27°-30°C) and high rainfall (about 100 cm) during its growth period. In fact, in the initial stages, the plant needs more of stagnant water. Hence, the paddy fields are flooded with 10-25 cm of water. On hill slopes, rice is grown in terraced fields. Claye, loam soil is best suited for its cultivation because it can retain water.

Rice is a labour intensive crop. Most of the farming operations are done manually — uprooting the seedlings from nurseries transplanting them in the flooded fields, removing weeds from time to time and harvesting.

The nutritional value of rice is good especially when the outer layer containing important vitamins is not removed in the processing. Ninety per cent of the worlds' rice in grown in East and South Asia. It is the principal food crop for half the population of the world.

Wheat

It is mainly a crop of the temperate region. But it is now the most widely grown of all the cereal grains because of its adaptability. There is hardly any country which does not grow some amount of wheat. With fair amounts of protein as well as carbohydrates, it is one of the most

productivity, and where the rate of growth to the total production is highest.

- In simple terms, it is condition where neither resources are dormant nor over burden nor over exploited. A population which can be sustained without jeopardising the future.

Over-Population

- There are two types of over population:
    1. **Absolute**
        - Where living standards remains low even after attainment of absolute development of resources.
        - Eg. Bangladesh
    2. **Relative**
        - where the present level of production is inadiquate but greater production is feasible.
        - eg. India
- Over population means low quality of life, malnutrition, food crisis, lack of social security, etc.

Under-population

- Under population is usually defined as a state in which a **country's population has declined too much to support the current economic system.**

- Where living standards remains low even after attainment of absolute development of resources.
- Eg. Bangladesh

2. **Relative**
    - where the present level of production is inadiquate but

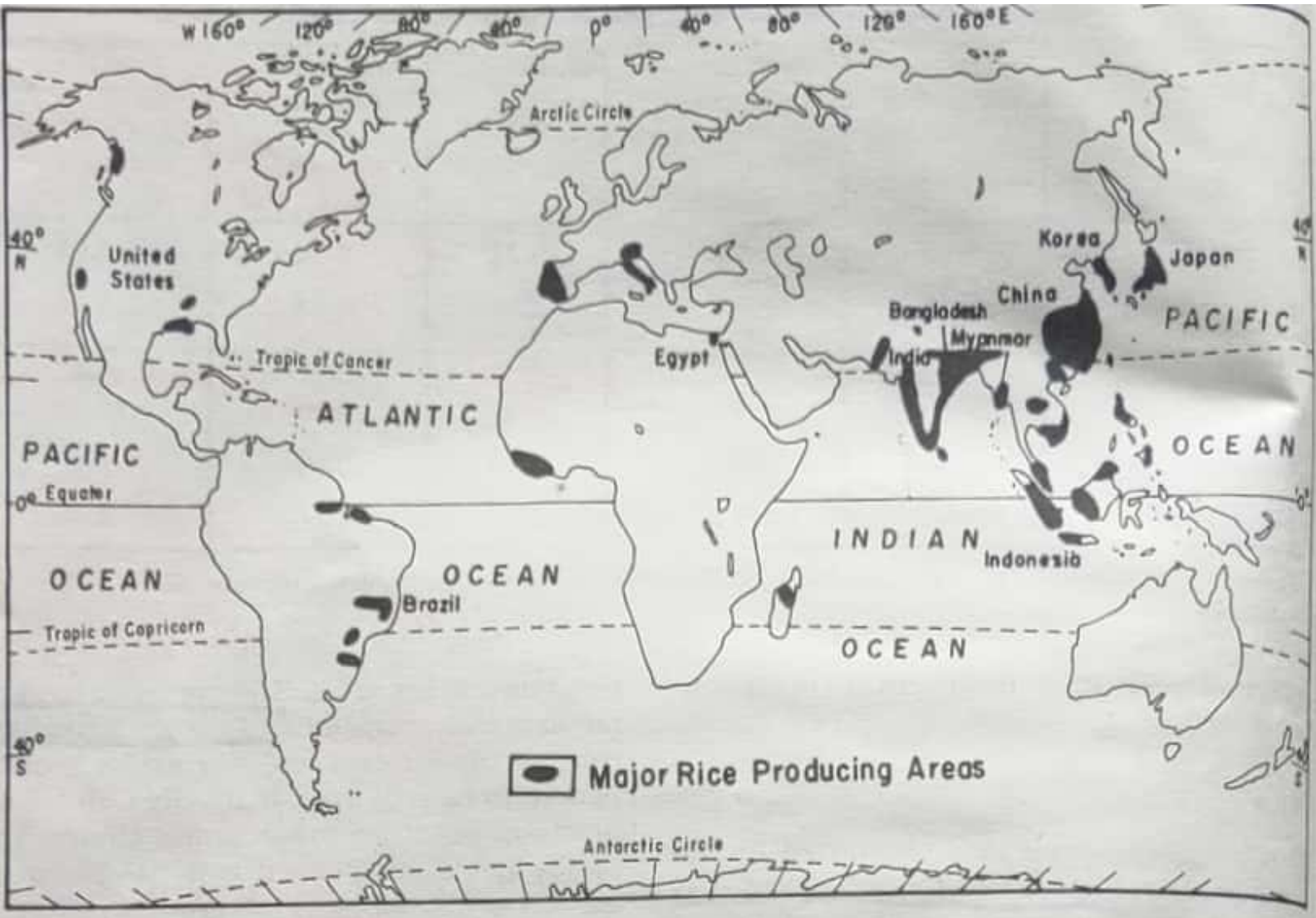


Fig.5.3 *World : Major Rice Producing Areas*

utritious grains. It is the staple diet of people n a large part of the world. Although wheat is ardy, it does not grow well under conditions f high heat and humidity. At the time of ermination, it requires cool weather and ufficient moisture in the soil. The annual ainfall should be between 40-75 cm. An verage temperature of 16°C and clear sky are equired at the time of ripening. Loam and hernozem soils are best suited for wheat ultivation.

On the basis of the climate, there are two pes of wheat : winter wheat and spring wheat. drier semi-arid climates (Fig 5.4). The areas of greatest production are the Great Plains of the United States, and Canada, the Steppe region of the Commonwealth of Independent States (CIS) and the North China Plain. Wheat is cultivated under intensive as well as extensive farming. Large-scale commercial production also occurs in Australia and on the Pampas of South America. Wheat is grown in almost every country of Europe but most of it is consumed locally. France is the largest producer and the only exporter of wheat among these countries.

plant nutrients, good drainage and ease in working. Heavier clay soils with adequate drainage are more suitable to certain crops. Sandy soils are usually infertile, although they may be used for cultivation after heavy application of fertiliser.

Relief

Three elements of relief — altitude, orientation of slope to sunlight and gradient, influence the pattern of agricultural activities. In middle latitudes, high altitudes restrict the number

targets could be largest per capita income, log term sustainability, efficient operation of democracy, preservation of personal freedom and preservation of biodiversity.

- According to W. C. **Robinson**, as the beauty of female has various

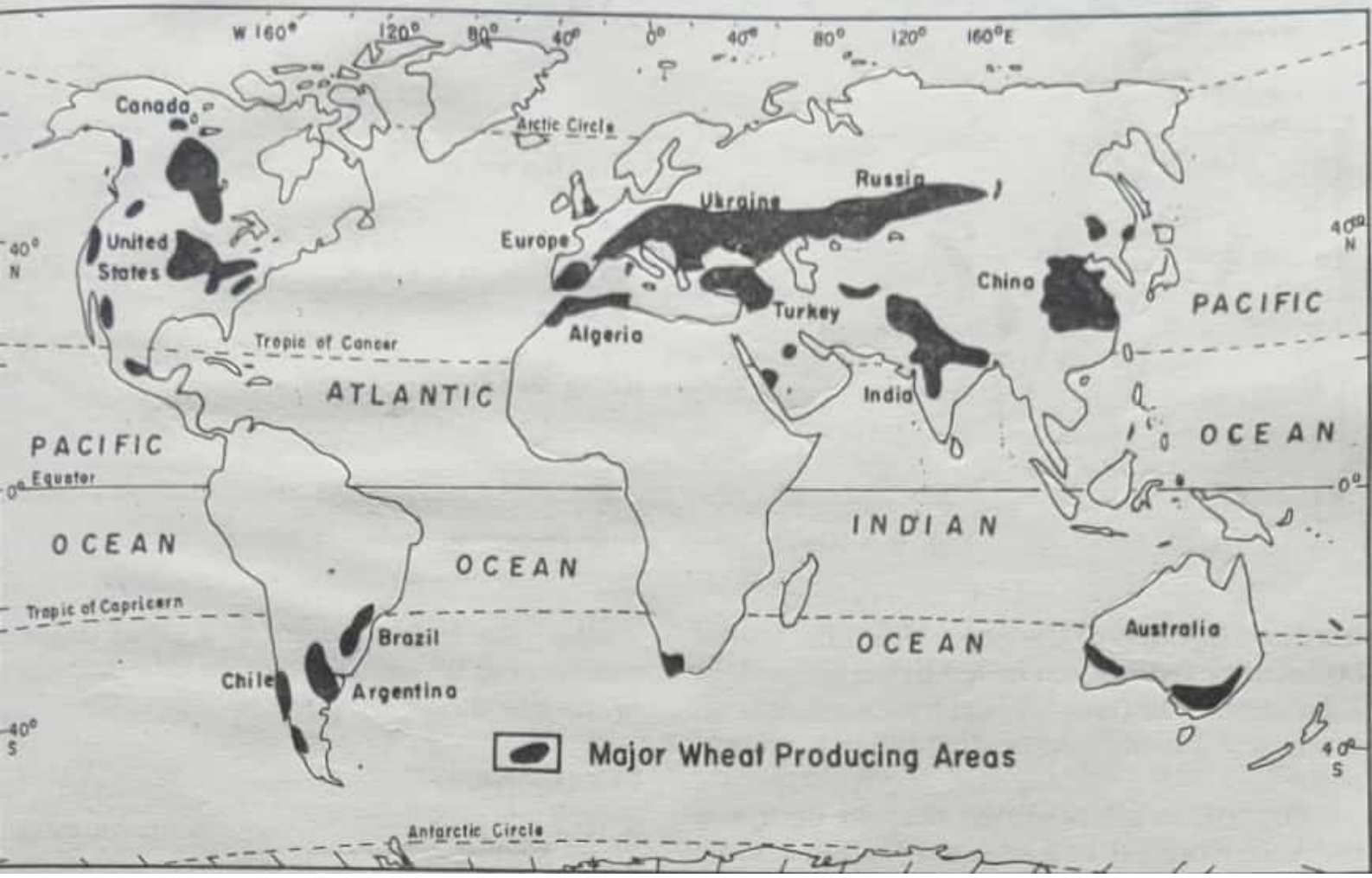
Sugarcane

It is a tropical crops, which is an important source of sugar. In temperate countries, however, sugar beet is the main source of sugar.

Sugarcane requires hot and humid climate. Temperature ranging between 20°C and 27°C and a rainfall between 75-120 cm are ideal. At the time of ripening, a low temperature, but not falling below 20°C, and dry weather enhance the sucrose content of the crop. Once cultivated, crop can give yield for at least three years.

Deep soil with high moisture retention capacity is most suited. Loam, clay, alluvial and black soils are good for sugarcane cultivation. Compost manures and chemical fertilisers are necessary for maintaining soil fertility.

Asia	91	Asia	38	N. America	48	Europe	31
Africa	3	Europe	24	Asia	25	Asia	26
S. America	3	N. America	17	S. America	11	South America	4
N. America	1.5	CIS	16	Europe	10	CIS	27
Europe	<1	S. America	2	Africa	5	North America	9
Oceania	<1	Oceania	2	CIS	1	Africa	3
		Africa	1	Oceania	<1		



winds were a potential resource two hundred years ago. Today they are an actual resource and wind farms generate energy using windmills like in Netherlands. You will find some in Nagercoil in Tamil Nadu and on the Gujarat coast.

Fig. 1.1: Windmills

Based on their **origin**, resources can be **abiotic** or **biotic**. Abiotic resources are non-living while biotic resources are living. Soils, rocks and minerals are abiotic but plants and animals are biotic resources.

Natural resources can be broadly categorised into **renewable** and **non-renewable** resources.

Renewable resources are those which get renewed or replenished quickly. Some of these are unlimited and are not affected by human activities, such as solar and wind energy. Yet careless use of certain renewable resources like water, soil and forest can affect their stock. Water seems to be an unlimited renewable resource. But shortage and drying up of natural water sources is a major problem in many parts of the world today.

Glossary

Stock of Resource
It is the amount of resources available for use.

APPROACHES TO STUDY HUMAN GEOGRAPHY

The human-environment relationships, the main focus of human Geography, has been interpreted in several ways. The post Darwinian period has witnessed several new approaches adapted to examine this relationship. Over time, approaches to study the subject matter of human Geography have been changing. These changes are not exclusive to human Geography but are in tune with the changes taking place within the overall domain of Geography. These trends are discussed below :-

DETERMINISM refers to the point of view supporting Environmental control on human action. Accordingly, history, culture, life-style and stage of development of a social group, society or nation are exclusively or largely governed by the physical factors (like the terrain, climate, fauna and flora) of the environment. The determinists, generally, consider humans as passive agents, influenced by the Environmental factors, which determine their attitude, decision making and life style. The first attempt to explain the physical features and the traits of various ethnic groups and their culture with reference to the influence of natural conditions were made by the Greek and the Roman scholars including Hippocrates, Aristotle, Herodotus and Strabo.

The deterministic concept in Geography literature on Human Geography continued through the works of scholars, such as Al-Masudi, Al-Idrisi and Ibn-Khaldun, Kat Kant, Humboldt, Ritter and Ratzel well up to the early 20th century. This concept grew widespread particularly in the United States from the writings of E.C. Semple and Ellsworth Huntington, who were considered its great exponents.

The philosophy of determinism was attacked mainly on two grounds. First, it had become clear under definite conditions and circumstances that similar physical Environments do not produce the same responses. For example, Greek and Roman civilizations flourished in the Mediterranean Climate. But similar civilisations did not develop in similar climatic conditions in Australia, South Africa, Chile or California. Second, although environment ~~forces~~ influences humans, they also influence the environment, and the cause and effect relationship of Determinism is too simple to explain this.

Consequently, the idea that humans are controlled by nature was rejected and other geographers stressed the fact that humans were free to choose.

theoretical political [illegible]
universally recognized as having [illegible]
particular branch of modern geography.

Areal Differentiation

The study of areal variation of human and physical phenomena as they relate to other spatially proximate and causally linked phenomena is known as areal differentiation. The term 'areal differentiation' was coined and used by Hartshorne in his classic work, *The Nature of Geography*, published in 1939. Drawing from Hettner, Hartshorne's central claim about geography is its integrative or synthetic purpose. The areal differentiation is also known as 'chorology' or 'chorography'. Chorology is the study of the areal differentiation of the earth's surface. Geography, on this definition, is solely concerned with the unique character of different areas

considerable discretion to choose between them. In the opinion of Lablache, "nature is never more than an advisor". Vidal's programme was endorsed by the historian Lucian Febvre in a famous phrase: "there are not necessities but everywhere possibilities, and man as the master of these possibilities is the judge of their use" (Febvre, 1932).

Quantitative Revolution in Geography

Traditionally, geography was considered as chorography (description of the earth surface). In order to put the subject at a scientific footing, after the Second World War, the American and British geographers applied statistical and mathematical techniques in geography. The introduction of these techniques in the subject is known as 'Quantitative Revolution in Geography' (Burton, 1963). Apart from application of statistical techniques, there was also an attempt by geographers at hypothesis testing. It was during this period when I. Burton published his book *The Quantitative Revolution and Theoretical Geography*. Based on the philosophy of positivism, the quantitative revolution in geography was criticized on several counts. It followed the methodology of spatial science, stressing on locational analysis and reduced the subject to space geometry. In reality, the man and environment relationship cannot be established by the mechanistic models designed with the help of statistical techniques.

As a criticisms to quantitative geography, some new approaches were introduced in geography. Geographers applied the behaviouralistic, humanistic, welfare and radical approaches to resolve the man and environmental issues.

The hallmark of an academic discipline, according to one of geography's chroniclers (James, 1972), is an educational organization which provides specialist training in the subject. James dates the beginning of such an organization of geography around 1874, when the first university geography departments were established in Germany. Britain and United States followed a little later, with the main development coming in the 20th century. Before 1874, geography was investigated either by ametures or by scientists trained in other fields (Geology, Geomorphology, Mathe-

Among all primary activities, agriculture is the most important. Nearly half of the world population is still dependent on it. In developing countries, the proportion of people dependent on agriculture is over 65 per cent.

About 12,000 years ago, the first farmers selected their crops and animals for domestication from the existing flora and fauna, particular to the world's biomes, and began the cultivation of plants. Different crops and animals were domesticated in different parts of the world, some in more than one place simultaneously.

Despite all the developments since then, humans are still dependent basically on the choices made by people in particular climatic regions thousands of years ago. Only about 20 crops out of several thousands species of wild plants are grown the world over as the major food sources. It is clear from the brief description below that the initial selections were influenced by the climate and the natural vegetation. The distribution of biomes reflect the distribution of solar radiation, temperature and rainfall resulting in the spread of vegetation types from equatorial forest to the tundra of the sub-Arctic and the high mountains. This broad climatic framework is still the main influence on the pattern of agriculture, though the limits of growing particular crops have now changed under human influence.

With the beginning of agriculture, the nomadic herding gave way to a comparatively settled life. The most primitive form of agriculture is known as *shifting cultivation*, which still persists in some parts of the world. It is mainly practiced in the tropical forests. Trees are cut and burnt to make a clearing in the forests. Using simplest tools, fields are prepared for planting crops. After a few years of crop production, the soils get exhausted. These fields are then left fallow and new clearings are made in the forest. This kind of cultivation is known by different names in different parts of the world e.g. as *Jhuming* in the north-east India, *Chengin* in Philippines, *Roka* in Brazil and *Masole* in Democratic Repeblic of the Congo. Though, shifting cultivation is also migratory in nature, it allowed people to stay in a place for a longer duration.

Subsequently, *sedentary agricultural systems* with permanent fields and villages emerged in areas of favourable climate and

Although plants and animals were domesticated at a number of places on the earth's surface, few areas are particularly important:

- South-west Asia and the Eastern Mediterranean Region: Wheat, barley, lentils, peas, figs olives, dates, garlic, almond; cattle, sheep and goats.
- South-east Asia: Mango, vege-culture i.e. cutting and planting parts of the growing plant such as yam, sago and bananas; pig, chicken and duck.
- China: Rice, millet, soyabeans, tea, onion, spinach and the mulberry; pig, chicken, duck.
- India: Rice, gram, brinjal, pepper, lemon, jute and indigo; cattle, buffalo, chicken.
- Africa: Yam, oil palm, coffee, sorghum.
- Americas: Maize, and beans in Central America, cassava and cocoa in the Amazon basin and potatoes in the Andes; Llama .

the forces of evolution

7. There are demographers like Dumont who ... of social capillarity where the need for smaller families would ... generated by the desire to better economic status.

Despite all these criticisms, it can be said that after Malthus, Karl Marx attempted to give a scientific explanation of the growth of population which was based largely on the information available from the capitalist countries. Growth of population in a region is, however, controlled by the physical, socio-cultural and economic conditions. It is because of these factors that a universal model of population growth cannot be postulated. However, the demographic transition theory, developed in the 20th century gives a more logical and scientific explanation of population growth.

Demographic Transition Theory

The demographic transition theory is one of the most important population theories, which is the best documented by the data and statistics of recent demographic history. In its original form, it was put forward by W.S. Thompson (1929) and Frank Notestein (1945). These demographers based their statements and arguments on the trends in fertility and mortality, being experienced in Europe, Anglo-America and Australia.

The theory postulates a particular pattern of demographic change from a high fertility and high mortality to low fertility and low mortality when a society progresses from a largely rural agrarian and illiterate society to a dominantly urban, industrial, literate and modern society. The three very clearly stated hypotheses involved in the process are:

(i) that the decline in mortality comes before the decline in fertility;
(ii) that the fertility eventually declines to match mortality; and
(iii) that socio-economic transformation of a society takes place simultaneously with its demographic transformation.

In the present-day world, as would be true of any point in time, different countries of the world are at different stages of the demographic transition. In the opinion of Trewartha, this is largely due to the dual nature of man. According to him, biologically, man is same everywhere and is engaged in the process of reproduction but culturally man differs from one part of the world to another. It is the cultural diversity of man

The Shifting Viewpoint in the Second Half of the 19th Century

The classical period in the development of geography is considered to be terminated with the death of Humboldt and Ritter in 1859. After the death of Ritter, his students and followers tended to emphasize the 'historical' aspect of geography. This was a drift from the systematic geography to regional geography. Paschel, one of the laudable students of Ritter, extended his interest into political problems. Arnold Guyot (French-Swiss), another follower, if not student of Ritter, who held the first chair of geography in USA at Princeton, also explained the man and environment relationship. Another student of Ritter, Elisee Reclus, stressed on general systematic geography before proceeding to a complete regional survey of the world.

In opposition to Ritter, Humboldt had no university post but he inspired a number of scholars to conduct scientific travellings and expeditions. Following the death of Ritter there was no professor of geography in any German university. The general scientific atmosphere during the latter part of the 19th century was far from receptive to the philosophical concepts of the earlier period, whether those of Ritter or Humboldt.

The shift in geographic work is generally regarded by German geographers to have been due primarily to the work of Peschel. Peschel led geographers to study primarily the morphology of landforms. He attempted to show the influence of landforms on human history. Richthofen and Hettner, Penck (a geologist) and Schmidt also stressed on the importance of geomorphology as the main focus of geography. Similarly, in America, Davis developed the school of geomorphology as the major field of geography.

Human geography, on the other hand, including ethnography, agricultural land use, trade and human migration, was considered in relation to landforms, or was confined to studies in regional geography. This led to the confusion of dualism of physical (now meaning non-human) geography, and a regional, human geography. This division of the subject into the physical geography and human geography pointed logically to two opposite directions of development. It was at this stage that declared geography as a pure natural science.

In opposition to the school of physical geography, Ratzel in his monumental work *Anthropogeography* (1882) suggested geography of man in terms of individuals and ethnic groups and races. He was a strong believer in environmental determinism stating that the man is the product of his environment. The environmental deterministic approach dominated geography for several decades.

Richthofen, another leading German geographer, also attempted to establish the relationship between systematic and regional geography. In his opinion, the actual purpose of systematic geography is to lead to an

Farming is practised in various ways across the world. Depending upon the geographical conditions, demand of produce, labour and level of technology, farming can be classified into two main types. These are **subsistence farming** and **commercial farming**.

Subsistence Farming

This type of farming is practised to meet the needs of the farmer's family. Traditionally, low levels of technology and household labour are used to produce on small output. Subsistence farming can be further classified as intensive subsistence and primitive subsistence farming:

In **intensive subsistence agriculture** the farmer cultivates a small plot of land using simple tools and more labour. Climate with large number of days with sunshine and fertile soils permit growing of more than one crop annually on the same plot. Rice is the main crop. Other crops include wheat, maize, pulses and oilseeds. Intensive subsistence agriculture is prevalent in the thickly populated areas of the monsoon regions of south, southeast and east Asia.

of the earth's surface. Areal differentiation may be termed as "idiographic as it is concerned with the unique and particular".

In the 1980s areal differentiation was reinstated as a central perspective in human geography. Intellectual inspiration has come from three general directions, none of which is directly connected to older positions in debates about areal differentiation or uses the same terminology as the others.

The first is from the streams of thought referred to collectively as humanistic geography, which gives central and active role to human awareness and human agency, human consciousness and human creativity. The humanistic method (iconographic technique) seeks to explore the composition of landscapes, interpreting their symbolic content and reimbursing landscaping in their social and historical contexts. Successful iconographic interpretation allows us to see human landscapes as both shaped by and themselves shaping broader social and cultural processes, and thus having ideological significance.

The second focus of revival has been the analysis of uneven development and changing spatial division of labour. Some of the geographers tried to explain spatial variation in economic activity and well-being with a Marxist approach.

The third influence has come from attempts in geography to create Contextual Theory, in which the place or region is viewed as geographically mediating the interpolation of human agency and social structure and is thereby implicated directly in the production of geographical sameness and differences.

The third direction could be seen as potentially integrating the other two, but this would be a superficial view. There are important philosophical differences between all the three. For example, the first direction tends either to privilege or to emphasize the human objective experience of place—more often than not that of the scholar engaged in writing about it—whereas the second and third view the division of space in terms of objective socio-spatial processes with, for the third view, sense of place arising out of the conditions created by such processes.

In the areal differentiation the most challenging dilemma is the difficulty of neat boundary delimitation between places and regions when the territoriality of social groups is dynamic and irreducible to a singular and temporally fixed set of spatial units. Areal differentiation has also been criticized that it is incapable of contributing towards effective generalization.

Areal differentiation helped in the reconstruction of regional geography. It emphasized, however, that regions must not be studied solely as separate entities. Thus, regional geography must focus on the

Huntington, while writing about the march of civilizations, has opined that the shift in their centres was due to the climate and weather conditions. Mackinder, Chisholm and Herbertson also recognized physical geography as the main field of geographers. Thomas Henery Huxley wrote *Physiography* in 1877. Physiography had a much wider meaning; it may be defined as a description of nature; physical geography (renamed physiography after 1877) became a very popular school subject during the last three decades of the 19th century.[19] The Soviet scientists also conceived geography as the branch of science which deals with geomorphology, pedology, hydrology and meteorology. This major emphasis on physical geography may be attributed to the fact that at the initial stage of development, geography it was taught by teachers who had geology background. The protagonists of physical geography declared it as the only area in which geographers should contribute. In the opinion of Wooldridge and East:

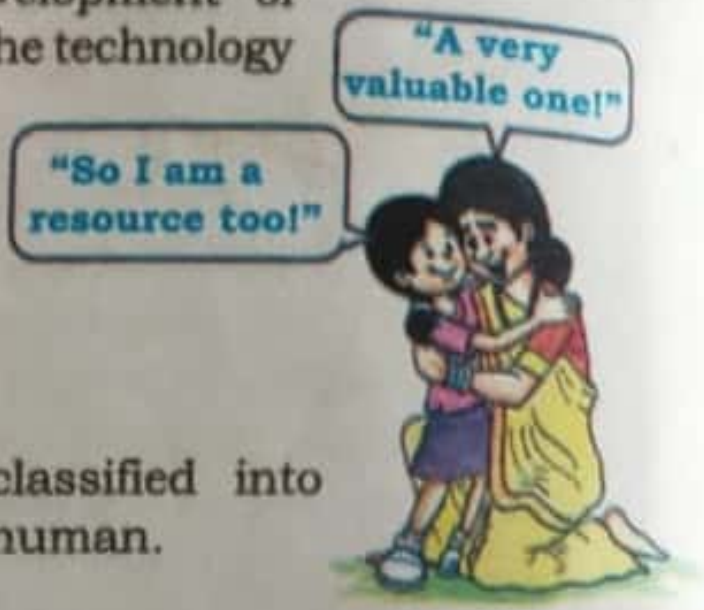
> It is futile to assert that 'human' or 'social' geography can be seen in terms of formal categories and universal principles and processes as can physical geography. This imputes to it no inferiority, it is rather to admit that it is infinitely more complex, subtler, more flexible, manifold.

Wrigley has recently commented on the methodological difficulty of "running in harness, as it were, physical geography and social geography". By accepting the view that explanation in the physical sciences, Wrigley implies the existence of two radically different frameworks for explanatory thinking in geography. In physical geography law statements are of importance, but in human geography such statements are irrelevant. This geographical manifestation of the

development of human geography. Ritter and Ratzel were among the first who considered man as an agent who brings change in the landscape. Febvre placed emphasis on the fact that human beings are an element of the 'landscape'—an element whose activity is incorporated in it, a modifying agent of the environment which 'humanizes' it. He also argued that the same physical factors do not always produce the same effects. In geography, according to Febvre, "we deal with man's work, man's calculations, man's movement, the perpetual ebb and flow of humanity; man not the soil or the climate—is ever in the forefront". It was Vidal de Lablache who founded the school of human geography. He gave relatively less importance to the elements of physical environment as the major determinants of cultural landscape of a region. Vidal had a clear insight into the weakness of physical geography and the deterministic argument. He realized the futility of setting man's natural surroundings in opposition to his social milieu and of regarding one dominating the other. According to Vidal, it is unreasonable to draw boundaries between natural and cultural phenomena; they should be regarded as united and inseparable. In an area of human settlement, nature changes significantly because of the presence of man, and these changes are the greatest where the level of material culture of a community is the highest.[21] Jean Brunhes prepared himself for the conceptual framework of human geography. He developed the principles of activity and interconnection. Later, Albert Demangeon was a strong follower of Vidalian tradition.

In America, Mark Jafferson brought the idea of 'central places', 'the primate city' and 'the civilizing rails' in the field of human and urban geography. In the Soviet Union, D.N. Anuchin followed the principle of 'economic determinism'.

more resources. Each discovery or invention leads to many others. The discovery of fire led to the practice of cooking and other processes while the invention of the wheel ultimately resulted in development of newer modes of transport. The technology to create hydroelectricity has turned energy in fast flowing water into an important resource.



Types of Resources

Resources are generally classified into natural, human made and human.

Natural Resources

Resources that are drawn from Nature and used without much modification are called **natural resources**. The air we breathe, the water in our rivers and lakes, the soils, minerals are all natural resources. Many of these resources are free gifts of nature and can be used directly. In some cases tools and technology may be needed to use a natural resource in the best possible way.

Natural resources are classified into different groups depending upon their **level of development** and **use**; **origin**; **stock** and **distribution**.

On the basis of their development and use resources can be classified into two groups, **actual** resources and **potential** resources.

Actual resources are those resources whose quantity is known. These resources are being used in the present. The rich deposits of coal in Ruhr region of Germany and petroleum in the West Asia, the dark soils of the Deccan plateau in Maharashtra are all actual resources.

Potential resources are those whose entire quantity

Primitive subsistence agriculture includes shifting cultivation and nomadic herding.

Shifting cultivation is practised in the thickly forested areas of Amazon basin, tropical Africa, parts of southeast Asia and Northeast India. These are the areas of heavy rainfall and quick regeneration of vegetation. A plot of land is cleared by felling the trees and burning them. The ashes are then mixed with the soil and crops like maize, yam, potatoes and cassava are grown. After the soil loses its fertility, the land is abandoned and the cultivator moves to a new plot. Shifting cultivation is also known as 'slash and burn' agriculture.

Do you know?
Shifting cultivation is known by different names in different parts of the world
Jhumming - North-East India
Milpa -Mexico
Roca - Brazil.
Ladang - Malaysia

Nomadic herding is practised in the semi-arid and arid regions of Sahara, Central Asia and some parts of India, like Rajasthan and Jammu and Kashmir. In this type of farming, herdsmen move from place to place with their animals for fodder and water, along defined routes. This type of movement arises in response to climatic constraints and terrain. Sheep, camel, yak and goats are most commonly reared. They provide milk, meat, wool, hides and other products to the herders and their families.

Fig 4.4: *Nomadic Herders with their camels*

Commercial Farming

In **commercial farming** crops are grown and animals are reared for sale in market. The area cultivated and the amount of capital used is large. Most of the work is done by machines. Commercial farming includes commercial grain farming, mixed farming and plantation agriculture (Fig 4.5).

Fig 4.5: *A Sugarcane plantation*

In ***commercial grain farming*** crops are grown for commercial purpose. Wheat and maize are common commercially grown grains. Major areas where commercial grain farming is pracised are temperate grasslands of North America, Europe and Asia. These areas are sparsely populated with large farms spreading over hundreds of hectares. Severe winters restrict the growing season and only a single crop can be grown.

In **mixed farming** the land is used for growing food and fodder crops and rearing livestock.

It is practised in Europe, eastern USA, Argentina, southeast Australia, New Zealand and South Africa.

tation

Plantations are a type of commercial farming where single crop of tea, coffee, sugarcane, cashew, rubber, banana or cotton are grown. Large amount of labour and capital are required. The produce may be processed on the farm itself or in nearby factories. The development of a transport network is thus essential for such farming.

Major plantations are found in the tropical regions of the world. Rubber in Malaysia, coffee in Brazil, tea in India and Sri Lanka are some examples.

Major Crops

A large variety of crops are grown to meet the requirement of the growing population. Crops also supply raw materials for agro based industries. Major food crops are wheat, rice, maize and millets. Jute and cotton are fibre crops. Important beverage crops are tea and coffee.

n

Rice: Rice is the major food crop of the world. It is the staple diet of the tropical and sub-tropical regions. Rice needs high temperature, high humidity and rainfall. It grows best in alluvial clayey soil, which can retain water. China leads in the production of rice followed by India, Japan, Sri Lanka and Egypt. In favourable climatic conditions as in West Bengal and Bangladesh two to three crops are grown in a year.

Wheat: Wheat requires moderate temperature and rainfall during growing season and bright sunshine at the time of harvest. It thrives best in well drained loamy soil. Wheat is grown extensively in USA, Canada, Argentina, Russia, Ukraine, Australia and India. In India it is grown in winter.

Millets: They are also known as coarse grains and can be grown on less fertile and sandy soils. It is a hardy crop that needs low rainfall and high to

and Mexico.

Fig 4.11: *Cotton Cultivation*

Cotton: Cotton requires high temperature, light rainfall, two hundred and ten frost-free days and bright sunshine for its growth. It grows best on black and alluvial soils. China, USA, India, Pakistan, Brazil and Egypt are the leading producers of cotton. It is one of the main raw materials for the cotton textile industry.

lot of scope for development, it has also set the ultimate limits, crossing of which would mean a point of no return. Hence, the Possibilistic approach invited Criticism from many of the contemporary thinkers. Griffith Taylor, while Criticising the Possibilism, put forward the concept of Neo-Determinism. He stressed that a Geographer's role is essentially that of an Advisor and not to interfere the Nature's plan.

Stage III Declining birth rates and low death rates, and declining rate of population growth.
Stage IV Low birth and death rates, and slow population growth.
Stage V Birth and death rates approximately equal, which in time will result in zero population growth.

In the first stage, the fertility is over 35 per thousand and the mortality rate is also high being more than 35 per thousand. The behaviour of mortality is, however, erratic due to epidemics and variable food supply. This stage, thus, postulates a stable and slowly growing population where the people are engaged in wasteful process of production. This stage mainly occurs in agrarian societies where the population densities are low or moderate, generally productivity level is low, large-sized families are an asset, life expectancy is low, the development of agricultural sector is at its infancy stage, masses are illiterate, technological know-how is lacking and urban development is limited. About two hundred years ago, all the countries of the world were at this stage of demographic transition. At present, it may be difficult to ascertain whether any country in the world still be at this initial stage of demographic transition because the data pertaining to fertility and mortality for such areas would either be lacking or would not be reliable. Moreover, the diffusion of modern technology has also been so fast, particularly in the field of medicine, that it is very difficult to find a solitary example of the country which may still be unaffected by the mortality declines, taking place all over the world. It is in this context that the first stage has been called as the pre-industrial and pre-modern stage.

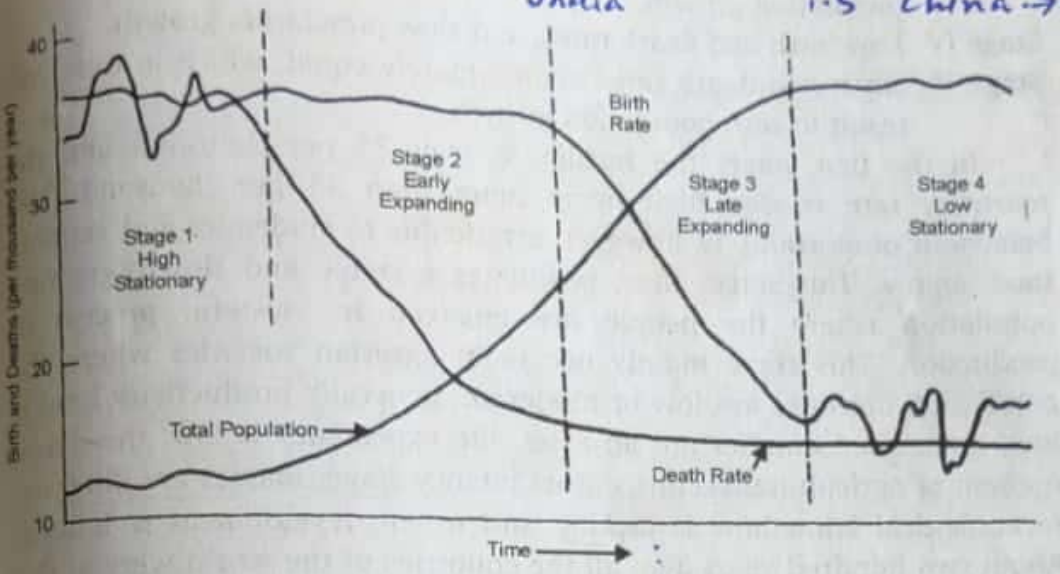
The second stage of demographic transition is characterized by a high and gradual declining fertility of over 30 per thousand and a sharply reduced mortality rate of over 15 per thousand. In this expanding stage of demographic transition, while the improvements in health and sanitation conditions result in sharp decline in the mortality rates, the fertility maintains a high level, at least in the early second stage. As the second stage prolongs, the fertility also shows signs of gradual decline (Figs. 3.5 & 3.6).

A distinction has often been made between the early second stage with high fertility and declining mortality and the late second stage with slowly declining fertility and sharply declining mortality.

In the second stage, as a whole, the population expands, firstly, at a gradual increasing rate and afterwards at a gradual subsiding rate. In the wake of population explosion associated with the widening gap between the two vital rates (birth rate and death rate), the population of resource mobilization becomes significant. The life expectancy starts improving. The processes of industrialization, urbanization and modernization become prominent. The large families are no longer an asset. Consequently, the fertility undergoes a gradual decline leading to a gradual

World Growth rate 2012. 1.2
L. D. W. - 1.4
M. D. W. 0.1
Africa - 2.5
Europe - 0.0
India 1.5
ASIA - 1.1.
China - 0.5

Figure 3.5 *Demographic Transition*



(After Haggett, 1975)

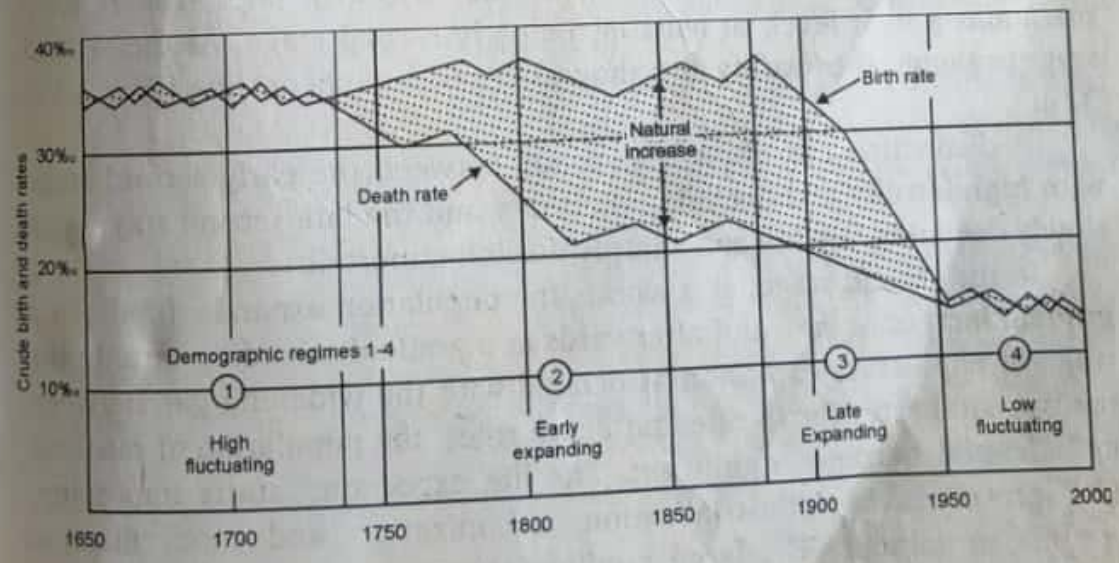
that gives rise to varying fertility patterns in different areas resulting in different stages of demographic transition.

The demographic transition theory is characterized by conspicuous transition stages. The transition from high birth and high death rates to low rates can be divided into following five stages (Figs. 3.5 & 3.6):

Stage I High and fluctuating birth and death rates, and slow population growth.

Stage II High birth rates and declining death rates and rapid population growth.

Figure 3.6 *A Model of Demographic Evolution*



(After R. Knowles, p. 93)

Coal

This is the most abundantly found fossil fuel. It is u as a domestic fuel, in industries such as iron and s steam engines and to generate electricity. Electr from coal is called **thermal power**. The coal w we are using today was formed millions of years when giant ferns and swamps got buried under the layers of earth. Coal is therefore referred to as **Buried Sunshine**.

The leading coal producers of the world are China, USA, Germany, Russia, South Africa and France. The coal producing areas of India are Raniganj, Jharia, Dhanbad and Bokaro in Jharkhand.

The United Nations Headquarters

the UN were chosen at the time of its foundation; the Arabic language was added in 1973.

4. Flag

The UN flag is blue in colour. The UN emblem (a polar map of the world embraced by two olive branches) is placed at the centre in white. It depicts world peace. The UN flag was adopted on 20 October 1947.

Flag of the United Nations

5. Finance

The United Nations, for its finances, depends on the contributions made by its member-states. Each member-state has to pay an annual contribution. The contribution of the member-state is fixed on its general wealth and its paying capacity. The cost of the peacekeeping mission is divided proportionately among the member-states. Also, the members of the UN have to pay the cost incurred by its special agencies. This is looked after by the General Assembly.

Key points: United Nations Organisation

- Membership—In *Chapter 2 of the Article 4 of the United Nations Charter,* open to all other peace-loving states; membership to the United Nations will be effected by a decision of the General Assembly upon the recommendation of the Security Council
- Headquarters—located in New York City; International Court of Justice is located in The Hague; other major agencies of the United Nations are based at Geneva, Vienna and Nairobi
- Language—six official languages—Arabic, Chinese, English, French, Russian and Spanish.
- Flag—blue in colour; UN emblem (a polar map of the world embraced by two olive branches) is placed at the centre in white; adopted on 20 October 1947
- Finance—contributions made by the member-states

Objectives, Purpose and Principles of UNO

1. Objective and purpose

The UN Charter, in its **Preamble and Article 1** has very distinctly laid out the objectives and purposes of the UNO.

- To save succeeding generations from the scourge of war
- To maintain international peace and security and eradicate the threats to peace
- To develop friendly relations among nations and acquire international peace and cooperation in solving economic, social and cultural problems
- To establish conditions under which justice and respect for international law and international treaties can be maintained
- To establish faith in human rights and in the dignity and worth of human beings
- To promote social progress and better standard of life in larger freedom
- To harmonise and coordinate the actions of nations in order to achieve the said aims and objectives

shall be undertaken.

18) States should notify others state about any disaster

19) Timely notification of relevant information

20) Women shall have a vital

Functions of Urban Settlements

Some may include one or more of the following—

(i) **Administration** e.g., municipal towns or national capitals.

(ii) **Defence** These include cantonments, air bases, naval dockyards etc.

(iii) **Cultural centres** These include centres of education (Cambridge), film-making (Hollywood) and religion (Jerusalem).

(iv) **Collection centres** where manufacturing is the dominant activity.

(v) **Transfer and distribution centres** which include market towns and ports.

(vi) **Resorts**.

(vii) **Residential towns**.

Origin of Urbanisation

At least seven regions of *primary urban generation* can be identified in the world. These are the regions where cities appeared quite early independent of any developments in other regions. These seven regions are Mesopotamia, Egypt, the Indus Valley, the North China plains, the central Andes, Meso-America and south-western Nigeria. (Fig. 8.8)

Diffusion Hypothesis According to this, urbanisation into other areas spread from the above-mentioned seven centres. But, this may not always be true. Three types of diffusion processes may be identified.

1. **Primary diffusion** means direct introduction of new city forms into a region by some outside authority, as in the case of old colonial empires.

2. **Secondary diffusion** involves direct borrowing of cultural traits, which happened in many parts of Europe and Asia.

3. **Stimulus diffusion** involves acceptance of ideas relating to different technical processes. For instance, adoption of urban transport systems in different cities around the world.

Given the pre-modern levels of communications during earlier times, it seems improbable that many urban settlements could have spread by any of these diffusion mechanisms.

Primary Urban Areas in Middle-East and India

During the 4th millennium, the Mesopotamian civilisation came up in the land between Rivers Tigris and Euphrates. Uruk was an important centre with a population of between 24,000 and 50,000 inhabitants. The cities began as religious centres, but developed other functions, such as handicrafts, especially pottery-making and metal working. These cities had trading links with neighbouring cities like those of the Indus Valley civilisation.

During the period 3200-1760 BC, the cities of southern Mesopotamia or Sumeria were the principal centres of urban life which gave way to northern cities like Babylon and Nineveh. These were the capitals, at different times, of the powerful Babylonian and Assyrian empires that were finally overthrown by the Persians around 500 BC. Through successive empires—Persian, Greek and Roman—the role of city as the base for the territorial expansion of the empire and as the centre of political, social and religious organisation became firmly established.

The Indus Valley civilisation flourished between 2500 BC and 1700 BC in the region extending from Baluchistan in the west to western U.P. in the east and Kashmir in the north to Gujarat in the south. Well-planned cities with meticulously executed drainage systems was a unique feature of these cities which included among others Mohenjo-daro, Ganweriwala, Harappa, Dholavira, Kalibangan, Lothal, Ropar and Chanhu-daro. Why these cities were independent in their planning from Mesopotamian cities is still not clear. As a result of invasion or natural calamities or a combination of both, this urban civilisation, which was mainly dominated by the trading classes, faded out after 1700 BC.

The civilisation of the Nile Valley in Egypt gave rise to such important towns as Memphis and Thebes and to many temple cities—mostly lying buried in the Nile alluvium at present. The main period of urban development starts around 3000 BC. Evidence suggests that cities such as Memphis and Thebes were, probably, neither as large nor as functionally important as the Mesopotamian cities.

Later Developments in Europe and The Middle-East

The later stages of urbanisation were marked by complexity, independent development and

- Role of man's technical innovations cannot be underrated, particularly in the field of medicine which can arrest the rate of mortality.

4.3 MIGRATION : CAUSES AND TYPES

→ Migration :

Introduction: Migration is almost an characteristic of Homo Sapiens. Man is the or most widely distributed social animal on the earth surface.

Migration is a geographical phenomenon that seems to be a human necessity in every age. Since man has a tendency to leave the areas in which life is difficult, he migrates to the areas where life may be easy and better.

Migration is ordinarily defined as the permanent or semi permanent change of residence of an individual or group of people over a significant distance.

Migration together with fertility and mortality is a fundamental element determining population growth & population structure in an area.

When people move from one place to another [illegible] they move from is K/as (i)

has inspired him to migrate to dif
areas. It was because of this reason
that the slaves were (African Negr
were transported to the plantation
tropical America. These Negroes subsequ
-ly got settled in the United States of
America, Latin America and the West
Indies.
In the 17th & 18th centuries, about 20 to 40
hectares of land was used to be
given free of cost to the emigrants in
USA who owned nothing in their homeland.
The temptation to have land became a great
magnetic force for Europeans to settle in
America.

3) Over Population:
An excess of population in an area in

(d) Social
The
and
ethni
al