M.A. GEOGRAPHY

SEMESTER III (CBCS)

GEOGRAPHY PAPER - 303

POPULATION GEOGRAPHY

SUBJECT CODE:99226

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CONTENTS

MA Geography

Semester III

Paper: 303 B 2- Population Geography

No. of Credits: 6 Teaching Hours 60 + Notional Hours 60= Total hours 120

1. Geographical context of Population (Contact Hours 15)

1.1 Population in environment, economy and society- People as players- Acts of knowledge-Positions.

1.2 Changing approaches to Population Geography- Contemporary trends

1.3 Population- Demographic characteristics- reproduction, health, and educationchallenges for developed and developing countries.

1.4 Critical review of population growth theories and models demographic transition anddemographic divided critic.

2. Space, environment and place interrelations (Contact Hours 15)

2.1. Concentration of people in space Density variations and impact Rural and urban dimensions

2.2. Population- resource relations Capitalist mode of production

2.3 Livelihood responses- Role of technology- nature of economy and environmental aspects.

2.4 Issues of degradation displacement place lessness- Indian examples.

3. Population and Social Relations (Contact Hours 15)

3.1 People, society and culture - Early migration and evolution of cultural hearths

3.2 People as social groups- Ethnicity, race, caste, religion and language identity issue

3.3 Dimension of gender and related aspects Relevant examples.

3.4 People and economy- Population as a resource- Economic and occupational characteristicsSpatial patterns- Changing status of labour -Recent trends.

4. Migration and mobility (Contact Hours 15)

4.1 Factors, processes and typology Contemporary trends in developed and developing countries Rural and urban dimensions

4.2 Population, Social organization and governance people as communities and citizens people s rights and protection in contemporary societies

4.3 Population dynamics and development processes Population as social capital Status ofdeveloped and developing countries.

4.4 Study of any of the community space in Mumbai Socio-cultural, Economic and Politicalcontext

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1

GEOGRAPHICAL CONTEXT OF POPULATION

Unit Structure :

1.1 OBJECTIVES

At the end of this unit, you will be able to –

- Get an overview of the population geography sub-discipline and how it emerged as a prominent subject in human geography.
- Understand how populations affect the environment, economy, society, and other aspects.
- Know about the different population theories and models.

1.2 INTRODUCTION

Population geography is a sub-discipline of human geography that focuses on concepts and theories to understand and forecast the human population's size, composition, and distribution. Generally, population geography is the study of how spatial variations in births, deaths, distribution, composition, migration, and growth of populations are related to the place. It differs from demography,the statistical study of the human population - location, density, pattern, and relationship to the physical environment.

1.3 SUBJECT DISCUSSION

Population geography explains the geographic organization of population, which often describes where they are found and how the population size is regulated through the demographic processes of fertility, mortality, and migration. Also, it studies the role of population patternsin economic development, social issues, and ecological change. For example, suburbanization in the global north is linked with migration decisions of families who left central cities to relocate to the urban fringe.

1.4 POPULATION IN THE ENVIRONMENT, ECONOMY, AND SOCIETY - AS PLAYERS-ACTS OF KNOWLEDGE-POSITIONS

All societies create knowledge, and they need it to shed light on how societies function. During the early 19th century, population geography emerged as a distinct set of ideas in an industrializing Europe. The development of the discipline has strongly influenced the underlying beliefs of many ‘Enlightenment’ societies. Three types of enlightenment beliefs shape the knowledge of population geography. The first belief is that knowledge is power because it can influence others (Foucault, 1977). The second element is that “everything worth knowing could be known.” Enlightenment views of society consisted of 2 parts – a world of ‘order’ that signifies the application of scientific reasoning and logic. The second part is the world of ‘uncertainty’ that includes beliefs like doctrine, spiritualism, mysticism, tribalism, etc. The third enlightenment argued that social and geographic settings in the development of population geography belonged to the world of order. Geographic perspectives tackled social context by developing ideas about space, place, and environment that later evolved as the master concept of geography.

States play a crucial role in producing knowledge about population, as it pays close attention to their population's size, growth rates, and distribution. This attention tightens in times of conflict and geopolitical uncertainty. States also monitor relationships between people and their social, economic, and cultural progress. Taxation and revenue collection requires information about the location and characteristics of the population. Therefore, as the interaction between and within societies intensified, the depth of desired information about people and the

population has grown. From the 19th century onwards, countries began conducting a regular population census.

There are four phases or acts of creating knowledge that explores how population geography was made in academic contexts. Act 1 geographically isolated scholars who worked through particular practical issues that reflected religious and political ideologies. During Act 2, the knowledge makers were woven into groups and societies to produce and deposit empirical geographic knowledge on a near continuation basis. The Act 3 knowledge emerged from a tightly woven enterprise often located within tertiary education institutions where scholars contributed international and national theories. The phase of Act 4, often referred to as the post-enlightenment era, is contributed and circulated between groups and questions the approaches that assume researchers are objectives and stand outside the research process.

The concept of space is used in various ways by geographers. For the Greek, Arab and Roman geographers, space and the organization of society in space enabled the growth of civilizations. Characteristics of the environment is a concept that is closely associated with space. Many U.S. geographers linked environmental attributes to racial and ethnic hierarchies. Huntington's book 'Civilization and Climate' in 1924 linked environment and society by arguments that links 'racial traits of populations to the group's physical environmental context.' Other geographers linked variations in skin colour between races to regional variations in temperature. It is also believed that indigenous people maintain a close and dependent relationship with their environment.

1.5 CHANGING APPROACHES TO POPULATION GEOGRAPHY--CONTEMPORARY TRENDS

Population geography seeks to understand the society around them, the structure of a population, and how people change through movements and processes (fertility, mortality, and migration). This branch reflects the diversity of geography while being closely related to demography. The subject has increasingly adopted new theoretical viewpoints to remain relevant. The U.S. geographer, G. T. Trewartha, the father of population geography, defines the discipline as "population geography is concerned with understanding regional differences in the earth's covering of people." John I. Clarke suggested that "population geography is mainly concerned with demonstrating how spatial variation in population and its various attributes like composition, migration, and growth are related to the spatial variation in the nature of places."

Wilbur Zelinsky defines it as "a science that deals with how geographic character of places is formed by and, in turn, reacts upon a set of population phenomena that vary within it through both space and time interacting one with another, and with numerous non-demographic phenomena." Therefore, the comprehensive definition of Population Geography is that "Population Geography studies the distribution of the population over the surface of the earth along with its characteristics and

relation with the geographical personality of the region." The main concepts around which the population geography revolves around are -

- Size and distribution of population, which includes the rural-urban distribution of population.
- Past and present trends in population growth and its spatial manifestation
- Components of population change, like – fertility, mortality, and migration
- Population composition and structure, which includes
  - Demographic characteristics - age-sex structure, marital status, average marriage age, etc.
  - Social characteristics - caste, racial/ethnic, religion, the linguistic composition of the population; literacy,etc.
  - Economic characteristics - workforce participation rate, workforce structure, etc.

Nature and Scope of Population Geography :

From the early 21st century, population geography became a well–established subfield of human geography. However, that was not the case initially. In 1953, Trewartha recognized the need to study a more detailed account of the demographic characteristics of the world. These resulted in macro to micro-level studies, consequently facilitating population mapping. As the world population continued to grow at an increasing pace, the availability of population data after World War II enabled the mapping of different demographic attributes inotherregions. Slowly, the people grew consciousof population expansion and its effects on the region's economic development. Third-world countries also began experiencing population redistribution within their boundaries, i.e., from rural to urban areas. This compelled Trewartha to prepare a comprehensive outline of this portion of geography as a sub-discipline. He divided it into three main categories -

- According to Trewartha, a historical account of the population, geographers should adopt indirect methods, like collaborating with anthropologists, demographers, and historians, if direct statistical evidence is not available.
- The dynamics of number, size, distribution and growth patterns - Trewartha opined that world population patterns and their dynamics require analysis. These, along with aspects of over and under population, settlement types, and population migration (both international and inter-regional), form an integral part of the analysis of population geography.
- Qualities of population and their regional distribution – Here, Trewartha suggestedtwo broad groups – physical attributes (e.g., gender, race, age, health, etc.), andsocio-economic qualities (e.g., religion, education, occupation, maritalstatus, stages of economic development, customs, etc.)

Some of the common characteristics of population geography are –

- It is systematic, i.e., a particular aspect of physical or human phenomena in a defined geographical space can be formed into theories and models. During the late 1950s, population studies in geography shifted from the realm of regional geography to that of systematic geography.
- It is regional as it emphasizes a particular region.
- It is dynamic as size, population growth, and other related factors keep changing.
- It is humanistic, as it not only describes and explains the cause-effect consequences through quantitative statistical techniques but also intimates qualitative categories of human geography.

The scope of population studies is comprehensive and multi-disciplinary. The quantitative aspect concerns the size, structure characteristics, territorial distribution of human populations, and their changes. The survey on habitation conditions in naturalgeographic regions reveals the connections between medicaland population geography. Research on the economics of labour is sometimes intertwined with population geography.Population geography has a special place in economic geographybecause people, as the primary productive force, are employed in alleconomic sectors, and their location is significant. This discipline studies thecharacteristics of the geographical environment and population employment's financial and geographical condition. In modern society, the study of population geography is interdisciplinary as it takes contributions from sociology, economics, and anthropology.

According to G. T. Trewartha, the scope of population geography was as follows: -

- Distribution of population
- Density of populations
- Migration
- Growth of population
- Composition of population
- Literacy and quality of the population
- Rural and Urban populations
- Technological Development
- Population resources ratio.

1.6 POPULATION-DEMOGRAPHIC CHARACTERISTICS-REPRODUCTION, HEALTH, AND EDUCATION CHALLENGES FOR DEVELOPED AND DEVELOPING COUNTRIES

In 2017, the total world population became 7.5 billion.All demographic forecasts agree that future population growth will occur in developing countries. Presently, the world’s ten most populous countries are primarily

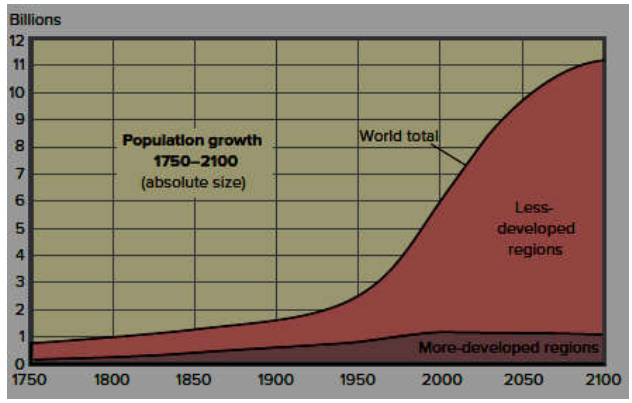
found in developing regions, and this trend will become even more pronounced by 2050 (table 1).

Table 1 - World's Most Populous Countries, 2017 and 2050

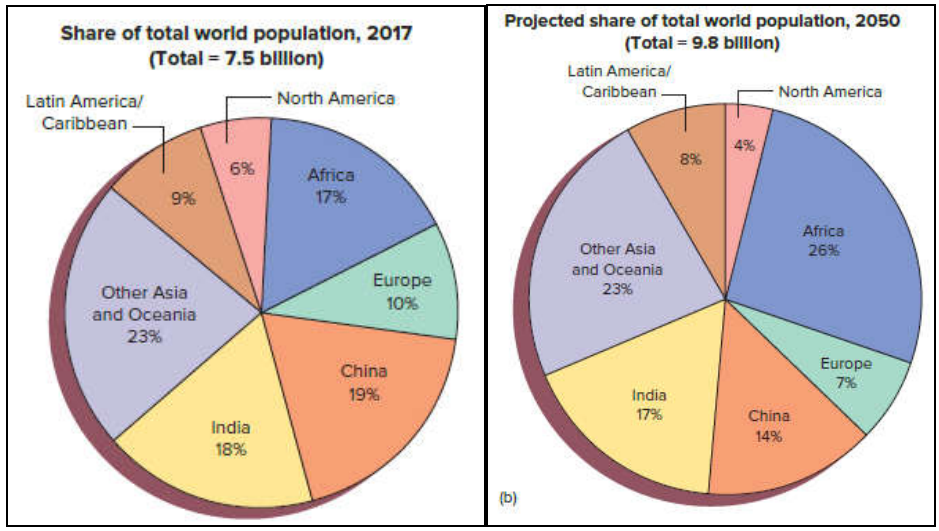
2017		**2050**	
Country	**Population (in millions)**	**Country**	**Population (in millions)**
China	1,387	India	1676
India	1353	China	1343
USA	325	Nigeria	411
Indonesia	264	USA	397
Brazil	208	Indonesia	322
Pakistan	199	Pakistan	311
Nigeria	191	Brazil	231
Bangladesh	165	Congo	216
Russia	147	Bangladesh	202
Mexico	129	Ethiopia	191
Source: Population Reference Bureau, 2017.			

The world population began an explosive expansion after World War II ended in 1945. Growth in developed regions will remain stable or decline during the 21st century due to low fertility rates(fig.1). However, higher immigration and higher fertility among migrants are projected to increase the population of the United States by more than 20 percent between 2017 and 2050. On the other hand, large-volume immigration into Europe could alter its projected population to decline. Between 2000 and 2100, nearly all population growth is expected to occur in 58 less developed countries, of which 39 are in Africa, 9 in Asia, 6 in Oceania, and 4 in Latin America/Caribbean.

Fig. 1 - World population numbers and projections



Sources: Estimates from Population Reference Bureau and United Nations Population



Sources: Estimates from Population Reference Bureau and United Nations Population

The study of the present population and the potential increases in population are vital for social, political, and ecological concerns. The population was much smaller around 12,000 years ago. People slowly started spreading to unoccupied portions of the earth and experimenting with food sources that initiating the Agricultural Revolution, followed by the Industrial revolution. Studies reveal that problems of malnutrition, starvation, global climate change, air pollution, water pollution, loss of forests, rising prices of many minerals, fossil fuels, and otherswill create strains on world resources.

Demographic Characteristics

Demographers perform a wide range of calculations of events of individuals in the population, number of births, deaths, and so on. Those counts are converted to ratesto make them more meaningful and valuable in population analysis. Rates are "the record of the frequency of occurrence of an event during a given time frame for a designated

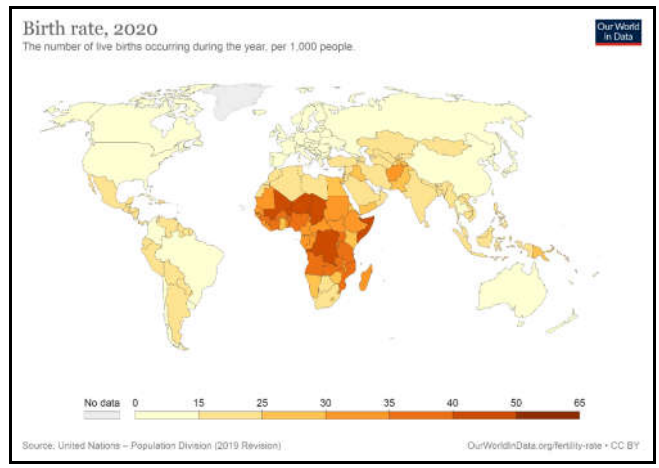
population." Every global change in population size can be understood concerning fertility and mortality rates, which vary significantly according to time and location. Both these rates are affected by many different variables. With these two, a third factor becomes relevant for changing population size, i.e., migration

- **Birth Rate –**The simplest and the most common measure of fertility is the Crude Birth Rate. The crude birth rate (CBR), often referred to as the birth rate, is the annual number of live births per 1,000 population.

$$\text{CBR} = \frac{\text{number of live births in one year}}{\text{mid-year total population}} \times 1{,}000$$

It is "crude" because it relates births to the total population without regard to their age or sex composition. The CBR for the world is 17.76 births per thousand in 2021.The birth rate is strongly influenced by factors like the - age and sex structure of a country's population, customs, family size, and population policies. Because these conditions vary widely, birth rates vary—as of 2020, from a high of 45 in Niger in West Africa to 8 per 1,000 in Japan, South Korea in Asia, and Greece, Italy, Monaco, and Portugal in Europe. Birth rates of 30 or above per 1,000 are considered high and are found in sub-Saharan Africa and Afghanistan. Because, in these countries, poverty is widespread, and a high proportion of the young female population. Generally, birth rates of less than 18 per 1,000 are low and found in - the Caribbean, East Asia, Europe, North America, Oceania, and a few South American nations.

Map 1 - World - Birth Rate (2020)



In recent years, low birth rates have been observed in many developing countries like India. India's birth rate declined from 44 per 1000 in 1950 to 17 in 2020. Technological developments such as contraceptives have played a significant role in declining birth rates worldwide. However, the sociological and ideological subsystems of culture and religious and political beliefs can also influence birth rates.

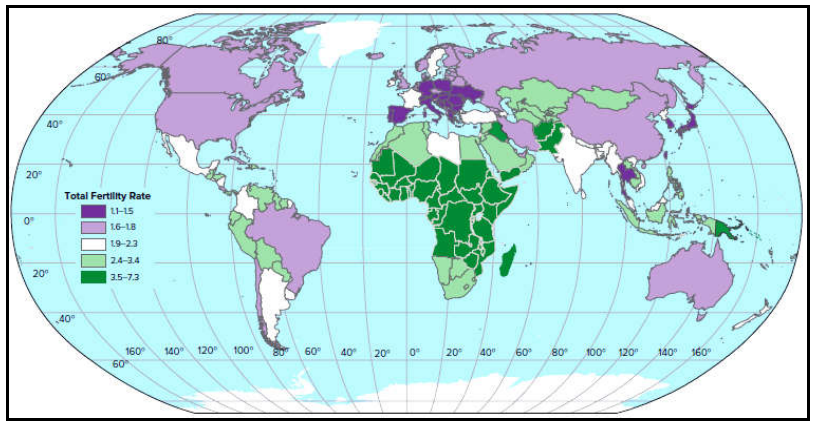
For accurately reflecting underlying fertility patterns, female fecundity—the ability of a woman to conceive- is considered. The total fertility rate

(TFR) accurately showsfemales' reproduction rate and probability. Thus, TFR is defined as the average number of children a womanwill have, assuming she has children at the prevailing age-specific rates as she passes through the fertile years. Thus, a TFR of 2 means that the average woman in a population would be expected to have two births in her lifetime. This age-specific measure of fertility is useful because child-bearing during the fertile years varies considerably with age. It is calculated as follows -

$$\text{TFR} = 5 \sum_{A=1}^{7} \frac{\text{number of births to woman in age group A in a given period}}{\text{mid-year number of females in age group A}}$$

---------- where, A refers to the seven 5-year age groups of 15–19, 20–24, 25–29, 30–34, 35–39, 40–44, and 45–49. The 5 preceding the summation sign is necessary because each age group covers five years. On a worldwide basis, the TFR in 2017 was 2.5. The more developed countries recorded a 1.6 TFR in 2017 due to late marriages.

Map 2 - World – Total Fertility Rate (2017)

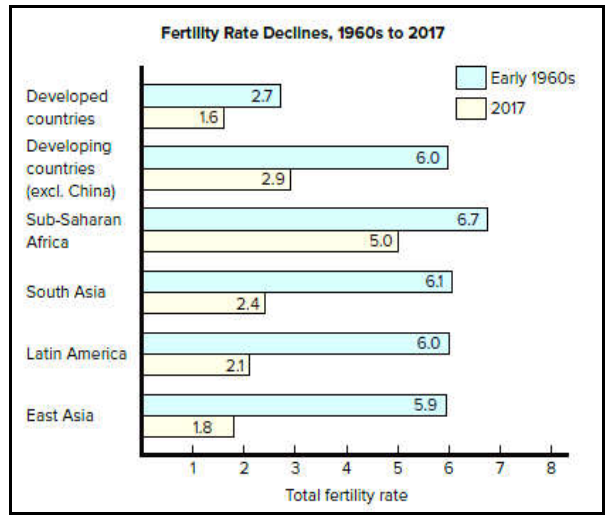


Source: Data from Population Reference Bureau, 2017.

Age is the fundamental biological factor in fecundity. Nutritional well-being also affects reproductive behavior; ill-health populations are very likely to have impaired fertility. Thus, periods of famine reduce population growth by lessening fertility as well as by increasing mortality.Changes in fertility in more developed countries are part of the economic development process; increasing industrialization and urbanization decline the fertility rate. While traditional families favored large families, modern societies emphasized small families and individual independence. Along with these, a host of complex and interrelated cultural factors like the age of marriage also affect fertility.

Fertility has declined rapidly in Latin America and Asia and very slowly in sub-Saharan Africa(fig.2). The lowest fertility rates are found in the United States, Eastern and Southern Europe, and Asia's more developed countries.

Fig. 2 - Decline in Fertility Rates



During the 1970s, the less developed world started experiencing a decline in fertility rate. This decline might be due to cultural factors like late marriages or non-marriages. For example – in Thailand, TFR declined from 4.6 in 1975 to 1.8 in 2014. Similar reductions have occurred in Asia, Latin America, and North Africa. The reasons behind the decline in fertility rate in third world countries are –

- Improvement in education leads to family planning.
- Females areexperiencing a rise in social status favoring late marriage,smaller families, and more time between births.
- Use of modern contraceptive methods.

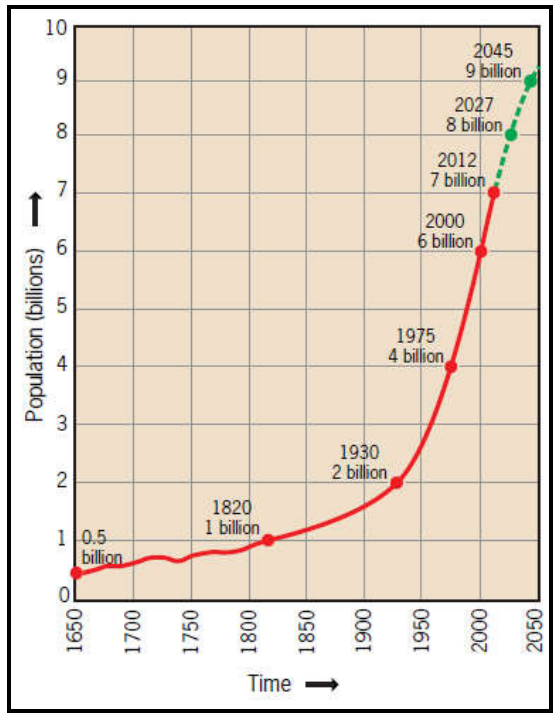
The United Nations predicted that the TFR of the world[1] will fall to around 2.2 by 2050. Population geographers and demographers expect the aging population of developed regions like the European countries, Japan, and China. The declining fertility in developing countries like Brazil will influence how much the world population continues to grow over the years. In developed countries, more women are choosing education, careers, late marriage, and delaying childbirth. While old-age dependency is a concern for European countries, a high child dependency is a concern in African nations.

However, despite declining TFR, the worldwide population continues to increase. A reason that explains the worldwide population growth rate is its comparison to its doubling time. For example, if someone invests Rs. 100 at 10 percent, compounded annually,it would double it to Rs. 200 in seven years and further keep doubling it to Rs. 400 after seven years. About 2000 years ago, the world's population was estimated to be 250 million. Almost 16 centuries later, it doubled to 500 million. However, within 170 years, by 1820, the population had doubled to 1 billion (fig.3). And within a century, it reached 2 billion in 1930. The next doubling of 4 billion took place only within 45 years.

[1]The world TFR combines regions including Europe, where fertility levels are low, and regions including Africa, where fertility levels are high.

Amongst population geographers and demographers, the concern of the global population doubling quickly is subsiding because of falling TFRs in both the developing and developed world. With families, mainly women preferring fewer children, many demographers predict the world may reach zero population growthglobally by the end of the century, with the population rising to 9.3 billion by 2050 and then leveling off to around 10 billion.Economic prosperity, together with social dislocation, reduces natural population growth rates. Economic well-being, associated with urbanization, higher levels of education, later marriage, family planning, and other related factors, lowers populationgrowth. Cultural traditions like religion also influence rates of population growth.

Fig. 3 – Population Projection



In India, northern states record population growth far above the national average. At the same time, the western and the southern states have slower population growth rates. Higher literacy rates among women, better access to health care, excellent land ownership rates, and more access to birth control methods are a few reasons behind the slow growth rate of the population. During the 1950s, India became the first country in the world to institute a population planning program. In the 1970s, the Indian government began a policy of forced sterilization of any man with three or more children. However, this policy faced heavy social and political criticism across the country. Despite the backlash, around 22.5 million people were sterilized.Eventually, sterilization programs ended in India, but states took the liberty to pursue their family planning programs.At present, every state government encourages families to have fewer children. However, despite initiatives, India has a higher growth rate than China. Thus, demographers predict that the declining growth rate in China and higher growth rate in India will make India the most populated country in the world by 2030.

- **Death Rates -** Mortality or the crude death rate (CDR) is calculated as the total number of deaths per year for every 1000 people.

$$CDR = \frac{\text{number of deaths in one year}}{\text{mid-year total population}} \times 1{,}000$$

The death rate is called "crude" because it does not consider that the probability of dying is closely related to age. Previously, the highest death rates (more than 20 per 1,000) were found in the less-developed countries of Africa, Asia, and Latin America. In contrast, the lowest death rates (less than 10) were associated with developed states of Europe and North America. However, age- death correlation mostly disappeared as death rate reduction occurred in developing countries following the Second World War. Worldwide, the leading causes of death are non-communicable diseases such as heart disease and stroke. In addition to non-communicable diseases, infectious diseases like water-borne diseases, malaria, dengue, and tuberculosis are causes of death in third world countries.

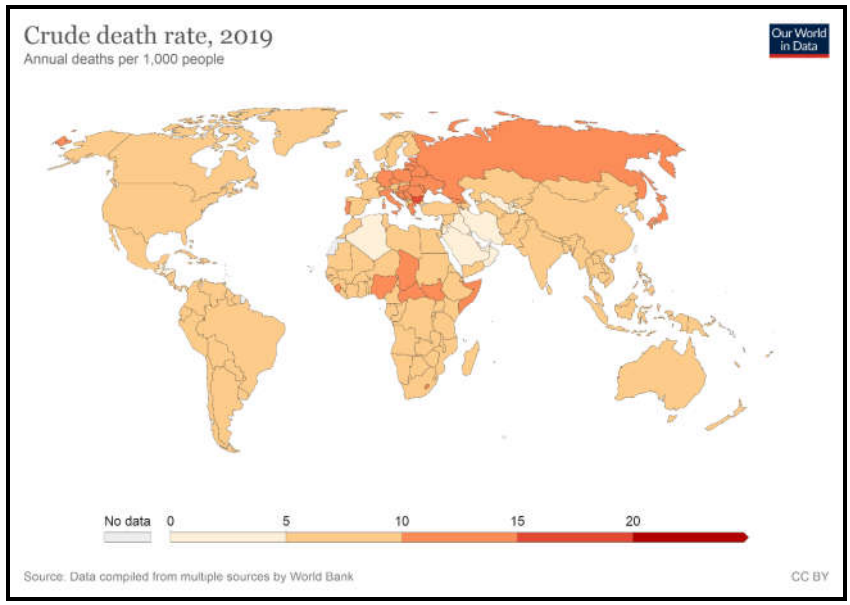
Usually, death rates are highest among infants, very young, and the very old.The most useful amongst these is the infant mortality rate (IMR), which is the number of deaths of infants under one-year-old per 1,000 live births in a given year. Thus,

$$IMR = \frac{\text{number of infant deaths under one year old}}{\text{number of births in that year}} \times 1{,}000$$

According to the World Health Organization (WHO), the infant mortality rate has decreased globally from 65 deaths per 1000 live births in 1990 to 29 deaths per 1000 live births in 2018. Annual infant deaths have declined from 8.7 million in 1990 to 4.0 million in 2018. Infant mortality rates and life expectancies improved as healthcare advanced, and modern medicines and vaccinations were made available in almost every part of the world, together with upgraded sanitary facilities and safe water supplies.Another glaring global inequity of mortality is measured by the maternal mortality ratio (MMR), which is maternal deaths per 100,000 live births. According to the World Health Organization (WHO), approximately 830 women die every day from preventable causes related to pregnancy and childbirth, leaving hundreds of thousands of children motherless.The geography of MMR is highly uneven as more than 95 percent of maternal deaths occur in developing and under-developed nations. Of which two-thirds take place in Sub-Saharan Africa. Pregnancy complications, childbirth, and unsafe abortions are the major slayers of women of reproductive age throughout the developing world and in war-torn or politically unstable areas.Most of these result from social, cultural, and economic barriers causing malnutrition, lack access to prenatal health care, and unavailability of trained medical assistance, proper medications, or blood

transfusions at birth. The education of girls and women is essentialin reducing maternal mortalities.

Map – 3 - Crude Death Rate of the World, 2019



Another helpful statistic that reflects mortality is life expectancy. Broader than the narrow metric of infant and child mortality, which focuses solely on mortality at a young age, life expectancy captures the mortality along the entire life course. Thus, life expectancy is the average number of years to be lived from birth or the average age of death in a population. During the early 19th century, life expectancy started to increase in the early industrialized countries while it stayed low in the rest of the world. This led to a very high inequality of health around the globe. Good health in the industrialized, rich countries and persistently bad health in developingcountries increased the inequality gap. Over the last decades, this global inequality decreased. The United Nations estimates a global average life expectancy of 72.6 years for 2019. In 2019, the Central African Republic had the lowest life expectancy, with 53 years, while in Japan, life expectancy is 84 years.

- **Natural Increase –** The rate of natural increase (ni) is the difference between the number of births and deaths in a population. In other words, it is the rate (usually annual) of population growth by subtracting the CDR from the CBR. The natural increase (or natural decrease) is negative when the number of deaths exceeds the number of births. The world CBR was 20, and the CDR was 8, producing an RNI of 12 per 1,000 (1.2 percent) in 2014. The size of the annual natural increase has been relatively constant in recent

  Years. It means that the world population is still increasing but slowly decreasing. The rate of natural increase in the world slipped by 2.22 %, from 10.60 persons per 1,000 population in 2019 to 10.36 persons per 1,000 population in 2020.Although fertility is declining in parts of the first and third-world countries, the number of females of

reproductive age continues to rise. Therefore, the total world population continues to overgrow because of population momentum. Population momentum is "the tendency for population growth to continue beyond the time that replacement level fertility has been reached because of the relatively high number of people in the child-bearing years." In simpler words, it explains why population growth will continue even if the fertility rate declines.

- **Doubling Time –** It is the "number of years required for the population of an area to double its present size, given the current rate of population growth."

Table 2 - Projected population growth, 2014–2050

Region or Country	Population in 2014 (Millions)	Projected Population in 2050 (Millions)	2050 population as a multiple of 2014
World	7238	9587	1.3
Sub-Saharan Africa	920	2428	2.3
Europe	741	726	1.0
US and Canada	353	444	1.3
China	1364	1312	1.0
India	1296	1657	1.3

Source: Calculated from Population Reference Bureau. 2014. 2014 World Population Data Sheet. Washington, DC: Population Reference Bureau.

Governments across the world, directly or indirectly, often try to control deaths, births, and migrations. Every policy concerning death control hasa similar objective, that is, to reduce mortality. These measures are taken on economic and humanitarian grounds, like providing appropriate medical care and safe working conditions.

1.7 CRITICAL REVIEW OF POPULATION GROWTH THEORIES AND MODELS

Population growth refers to a change in the number of inhabitants of a territory during a specific period. Demographers and population geographers formulated various ideas to determine and predict the world's population growth pattern.

- **Malthusian Theory of Population**

Thomas Robert Malthus (1766-1834), a British professor of history and economics, was probably the first to examine the close relationship between population growth and other demographic changes. He was the key figure in analyzing the population statistics and enunciated his view about the population in his famous book "Essay on the Principle of Population," published in 1798. In his essay, while developing his principle, he postulated –

i. Food is necessary for the survival of man
ii. The passion between the two genders is necessary and will remain the same.

From this, he developed the Malthusian theory of population growth, in which he wrote that population growth occurs exponentially, so it increases according to birth rate.Malthus argued that the population could increase because of the passion between the two genders, doubling every twenty-five years. He also argued that the pressure of the growing population on food would create misery. According to Malthus,Population, when unchecked, increases in a geometrical ratio. Subsistence increases only in an arithmetical ratio.' Human population increases in geometric progression like 1, 2, 4, 8, and so on. While, food output increases in arithmetic progression, like, 1,2,3,4 and so on.He opined that the food supply and population gap would continue to grow. Although food supply will increase, it will be insufficient to meet the needs of expanding population. As a result, society gets divided into the rich (haves) and the poor (have not). Besides, famine and other natural calamities will cause widespread suffering and increase the death rate as a natural check against the population.

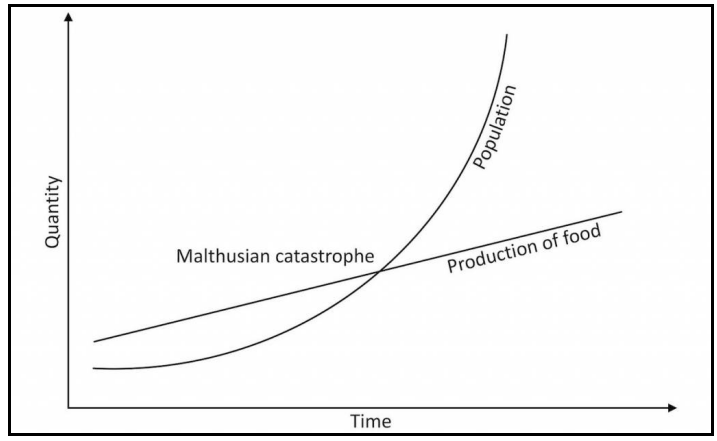
In brief, Malthus's theory of population growth states that:

1. The population is necessarily limited by means of subsistence.
2. The population invariably increased as subsistence unless prevented by some apparent checks. Two types of 'checks' can reduce a population's growth rate –

- Preventive checks are voluntary actions people can take to avoid contributing to the population, like delayed marriages, abortions, etc.
- Positive checks to population growth. These things may shorten the average lifespan of people, such as disease, warfare, famine, and poor living and working conditions.

According to Malthus, these positive checks would result in a Malthusian catastrophe (also known as a Malthusian crisis). Malthusian catastrophe is a forced return of a population to basic survival.However, Malthus argued that the positive and preventive checks are inversely related. In other words, in a place where positive checks are very effective, the preventive checks are relatively less effective and vice versa.

Fig. 4 - A graph illustrating the Malthusian theory of population growth



Source: Google

For example, the Irish potato famine or the Great Famine of 1845 - 49 has been considered a Malthusian catastrophe. The potato crop failed in successive years due to late blight disease.The Irish famine in Ireland was the worst in Europe in the 19th century, as the potato was the Irish staple crop. Additionally, dealing with political and economic relations with England and the fragmentation of their land, the rapidly growing Irish population ran out of food. The famine changed the demographic history of Ireland, as the country's population of almost 8.4 million in 1844 had fallen to 6.6 million by 1851.

Merits of Malthus theory –

- Malthusian principle of population has successfully highlighted the urgency of maintaining a balanced relationship between means of subsistence and population.
- New Malthusians have served society well by highlighting concerns among policymakers to promote low population growth through family planning.

Criticism

- The validity of his two sets of mathematical formulation has been questioned as it has not been proved empirically.
- Malthus was influenced by the local condition in England and did not foresee the opening up of extensive farming lands leading to increased food production in the USA and Australia.
- Malthus did not consider the increase in scientific knowledge and agricultural inventions. Besides, an increase in population is also an increase in the workforce.
- Population growth results from the birth rate and is also due to a decrease in the death rate and an increase in life expectancy.
- Malthus overemphasized the 'positive' checks rather than preventive checks like adoption, use of contraceptives, and family planning.

- Human inventions in birth control, nutrition, health, and agriculture have helped to a great extent, strike a balance between human reproduction and food supply.
- Natural calamities occur even in underpopulated areas. Thus there is no causal relationship between positive checks and overpopulation.

Despite these criticisms, the Malthusian doctrine contains much truth.Neo-Malthusians agree that there are absolute limits on food supply, energy, and other resources. The Malthusian philosophy is the most relevant to under-developed countries of all economic principles. According to International Food Policy Research Institute, out of 79 countries, 65 come under an alarming hunger level. In the least developed countries of Africa, the population is growing faster than the food supply.Burundi, Chad, Ethiopia, Eritrea, and Timor have been categorized as the five hungriest countries globally. Many reports record starvation, death, and malnutrition.

Economists such as Mill and Keynes supported Malthus's theory. However, sociologists claimed that the widespread poverty and misery of the working-class people were not due to an eternal law of nature but due to the misconceived organization of society. Karl Marx argued that starvation was caused by the unequal distribution of wealth and its accumulation by capitalists. It has nothing to do with the population as it depends on economic and social organization.

- **Michael Thomas Sadler's theory**

Sadler was a British economist, social reformer, and contemporary to Malthus. He conveyed his population ideas in his book “The Law of Population.” According to him, the natural law of population growth was inversely related to that of Malthus. In other words, he expounded on the natural law of population growth as one which involved an inverse relationship between humans’ tendency to increase their population and the current population density in an area. Moreover, the fertility rate decreases with the increase in population density. For instance - in agriculture-based or pastoral countries where the population density is low, the fertility rate ofthe population increases. In such countries, people can work hard, and hardworking people give birth to more children.

On the other hand, Sadler did not accept Malthus’s view that food supply increases in arithmetical progression and population increases in geometrical progression. According to him, nothing can happen because density will also increase when the population increases. Sadler also did not believe in the preventive measures of birth control described by Malthus. He said that people would adjust themselves according to their needs. Instead, Sadler thought that an increase in population density would increase the unhealthy environment, which would subsequently cause an increase in the death rate.

Criticism

- Sadler failed to distinguish between fecundity and fertility. This is because, in slums, the density is very high,but at the same time, fertility is also high among the dwellers.
- Moreover, the fertility rate is also high in many countries where the population density is high.

- **Thomas Doubleday's Diet Principletheory**

Doubleday,a British economist and social reformer opined that the increase in the human population was inversely related to the food supply. In other words, places with a better food supply would show a slow increase in population.According to him, the population increase will be more minor when the quantity of food is more significant. A constant population increase can be seen in places with the worst food supplies, amongst the poorest. Doubleday divided society into three groups - the first group included those in a state of affluence and whose number is constantly decreasing. The first group is leading a busy life.

On the other hand, the second group consists of the poor people with less food supply, and their number is increasing rapidly. The third group is people with an average income and well supplied with good food. Their number is stationary.

- **David Ricardo**

David Ricardo, a British political economist, was known for his theory on wages and profit, labour theory of value, comparative advantage, and theory of rents. He adopted an analytical approach that resulted in his building up of a normative model of the market system. Ricardo considered labour an abstract commodity like any other commodity in the market system. He expanded on the labour-wage link and the impact of capital accumulation on the population. According to him, the growing demand for labour resulted in an upward wage trend. Population regulated itself based on the availability of funds to employ it. The increased wages would lead to an increased labour supply through higher population growth rates. An increase in labour supply will initiate a fall in wages. Therefore, Ricardo asserted that population increase or decrease is based on the increase or decrease of capital accumulation rate. Ultimately, such an arrangement would result in a state where the demand and supply of labour shall be in equilibrium, and capital accumulation would stop. Hence, per the law of diminishing returns, there would be universal poverty as everyone would receive only the mere subsistence wage, causing misery and poverty.

- **Zero Population Growth**

A Stanford University biology professor and neo-Malthusian researcher named Paul Ehrlich,put forward Malthus's predictions into the twentieth century. According to Ehrlich, the environmental catastrophe, not specifically the food supply, will play a crucial role in the continued health

of the planet's population. As per Ehrlich's calculations,worldwide population growth wasexponential. On the other hand, global food production stagnated by droughts and decreasing fertility of farmland. Therefore, combining too many people with too few resources would cause food shortages, mass famine, and even the collapse of civilization itself. Based on this, his ideas suggest that the human population is rushing toward complete environmental destruction. Another reason can be due to privileged people's use of ecological resources such as water and air.

In 1968, Ehrlich published "The Population Bomb," which advocated for a goal of zero population growth (ZPG),"the number of people entering a population through birth or immigration is equal to the number of people leaving it via death or emigration." An environmental movement was organized to raise awareness about the threat of overpopulation. The central theme of the ZPG movement was not that humans should stop giving birth to child/children. Instead, it was more off gaining control over fertility through education and contraception and improved women's rights. If imposed, these will inevitably result in a decline in birth rates. While the support for this concept was mixed, it was still considered a possible solution to global overpopulation.

Criticism

- The projected rate of population growth was slower than the actual.
- Developing more effective birth control pills has limited population growth in the industrial world.
- Production of food has also increased by a much greater amount than predicted by ZPG and Malthus because of technological innovation.
- World resources can cope with population growth.
- According to some experts, even though widespread hunger exists in Africa and other regions, it is not due to overpopulation and lack of food but rather to problems in distributing sufficientfood.

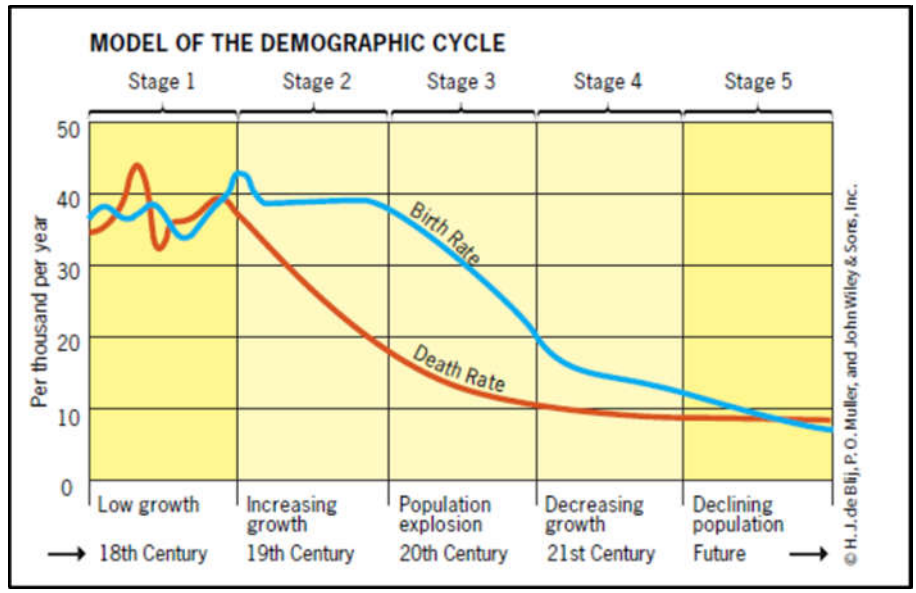
1.8 DEMOGRAPHIC TRANSITION

Population growth at an exponential rate cannot continue indefinitely on this planet. Thus, some form of braking mechanism must operate to control population growth. A demographic transition model is a braking mechanism that works for voluntary population control. The Demographic Transition model traces the changing levels of human fertility and mortality associated with industrialization, urbanization, health care improvements, and changing cultural attitudes like child-bearing.

The term demographic transition was first used by Warren S. Thompson (1929) and later by Frank W. Notestein (1945). Demographic transition refers to a historical process of change accountingfor births, deaths, and population growth trends that occurred in industrialized societies, especially in European communities. In other words, the term "demographic transition" refers to "the secular shift in fertility and mortality from high and sharply fluctuating levels to low and relatively stable ones." This transition process is one of the most critical changes

that affected human society in the past half millennium, together with the industrial revolution, growing urbanization, and the progressive increases in educational levels of human populations.Demographic transition theory should not be regarded as a 'law of population growth but as a frequently acceptedtool in describing the demographic history of a country.

Fig. 5 - The Demographic Transition Model[2]



The first stage of the demographic transition is characterized by a high death rate and high birth rate (but fluctuating) in the pre-industrial societies - the two rates are approximately in equilibrium. It is assumed that this equilibrium pertained in human societies until the late 18th century,when Western Europe entered stage two of the transition. Population growth was not steady in this low-income agricultural economy. Throughout the first stage, infant mortality was high, and life expectancy was low.The high CBR was characteristic of a situation with no incentive to reduce birth. The CDR fluctuated due to lack of clean drinking water, an adequate sewage system, diseases, poor harvests, and war. For example, in the 14th century, the Black Death (plague), which sweptacross Europe, is estimated to have killedbetween one-third and one-half of the continent's population. This epidemic disease brought by Europeans to the WesternHemisphere is believed to have reduced New World nativepopulations by 95 percent within a century.

The principal feature of the second stage is that CDR has been reduced dramatically due to the consequences of Europe's Industrial Revolution and modernization. With the onset of industrialization, improvements in agricultural technologies, especially crop rotation and selective breeding, and the introduction of new crops like potato and corn in the Americas have contributed torapid population growth. The progress of the industrial revolution made city planners increasingly concerned with improving

[2]This model describes population change over time. It is based on the observed changes, or transitions, in birth and death rates in industrialized societies, with its focus on about the past 250 years.

public health through more effective sewage systems and living conditions. Thus, birth rates outpaced death rates in the second stage and increased life expectancies. Another notable demographic feature of this secondstage is the decline in infant mortality resulting in an increasing youth population. In most traditional societies, large families were valued for their social and economic advantages. Children became the focus of activities and rituals by which culture is transmitted. In low-income families, children contribute economically by starting work early, especially on farms or family businesses, and supporting their parents in old age. Northern and Western Europe were the first ones to experience the second stage. It soon spread east and south of Europe to other industrializing countries.The length of this stage varied across places, but it usually lasted several decades.

The third stage of the demographic transition begins with declining CBR. This was the result of voluntary decisions to reduce or control family size. The industrialized and urbanized cultures facilitated access to contraception, an increase in the status and education of women,an increase in parental investment in child education, and other social changes. Children were viewed as economic liabilities rather than assets. The onset of the third stage began again in Northern and Western Europe during the late 19th century.

The fourth and final stage is characterized by meager, nearly equal birth and death rates. With fewer births and longer life expectancies, a significant population agingaccompanies this stage. In countries like Germany, Italy, and Japan, birth rates are expected to drop far below the replacement level. Thus, leading to a declining population is a danger to many sectors that depend on population growth.It imposes an economic burden on the declining working population.

Even though the growth rates are similar in the first and fourth stages, how the rates are generated are very different. Some scholars break out a "stage five" from the fourth stage representing below-replacement fertility levels. Others hypothesize a separate "stage five" involving a rise in fertility. Those countries that have completed the demographic transition have either exceeded birth rates or have equal death rates,and populations are declining. This extension has so far been largely confined to the rich, industrialized world, notably Europe and Japan. However, itincreasingly promises to affect much of the world.

The original demographic transition model was formulated to describe the experience of north-western European countries due to their transition from rural-agrarian societies to urban-industrial ones. It,however, may not accurately predict the course of events for all developing countries. During the 16th century, infant mortality was high in Europe, and life expectancy was low. With the onset of industrialization, immediate factory wages permitted earlier marriage and more children. Improvements in sanitation and health accompanied this, but death rates remained high. In1800, 25 percent of Swedish infants died before their first birthday. The beginning of 1860 saw a gradual decline in death and birth rates. This period often

referred to as the "mortality revolution," came due to an epidemiological transition, where epidemics became endemic, and people developed partial immunities, causing a decline in mortality. Other factors like improvements in livestock raising, fertilizer use, crop rotation, and new crops from overseas colonies (like potatoes) raised the standard of health of the European population. Simultaneously, sewage systems and sanitary water supplies became common in larger cities, thus reducing the frequency of water-borne diseases like cholera and typhoid. Deaths due to infectious, respiratory infections, and malnutrition also declined. Nevertheless, chronic illnesses associated with the aging population increased. The birth rate decline began because of child labor laws and mandatory schooling of children.

The availability of Western technologies like medicines, insecticides, sanitation, immunization against smallpox, and infant and child health care dramatically increased life expectancies in developing countries.For example - Sri Lanka sprayed DDT to combat malaria,which consequently increased life expectancy from 44 years in 1946 to 60 within eight years. With similar public health programs, India also experienced a steady reduction in its death rate after 1947. Thus, slowly the second stage of the demographic transition, i.e., the declining death rates accompanied by continuing high birth rates, diffused worldwide.

The decline in birth rate depends more on the social acceptance of having fewer children rather than technology. But, this acceptance has diffused unevenly worldwide. The steep decline in BR in developing countries showed that most of these countries have advanced to the third or fourth stage of the demographic transition. India witnessedsporadic, irregular, and stagnantpopulation growthduring the 19th century. The 1921 census year registered a negative growth rate of -0.31 percent and is thus known as the year of the Great Demographic Divide. The first two decades of the 20th century were struck by several local famines and diseases like plague and malaria. The influenza epidemic in 1919 claimed almost 7 percent of the country's population.

Uttar Pradesh, Bihar, and West Bengal recorded negative decadal growth rates (1901 – 1921). In general, the country was in high births and deaths (stationary) stage of demographic transition until 1921. The progressive control of epidemics accelerated the rate of population growth. Northern India witnessed an exceptionally high growth rate compared to the central zone because of higher incidences of mortality and considerable out-migration towards western India due to industrial growth there. From 1921 onwards, India entered the expanding stage of demographic transition with declining deaths and relatively higher births. As CDR declined considerably and CBR remained very high, the population growth during this period is known as mortality-induced growth. From 1951 onwards, there was a rapid growth in India's population resulting in a sharper decline in the death rate. However, fertility remained high. Thus, this period is often referred to as a population explosion. The population explosion was due to developmental activities, improvement in health facilities, and living conditions. Natural increase rose as death rates

declined much faster than birth rates. Therefore, this growth is known as fertility-induced growth. Population growth was highest in northern India than in other parts of the country. During the 1980s, India entered the late stage of demographic transition. North India recorded faster population growth than southern India.

1.9 DEMOGRAPHIC DIVIDEND

The demographic transition theory explains the changes in demographic patterns through four stages. Along with the changing demographic features, economic growth and development also occur.Demographic dividend talks about such gains and benefits of changes in demographic characteristics of the population of a specific nation.

In different stages of demographic transition, changes in demographic indicators like CBR, CDR, literacy rate, mortality rate, infant mortality rate, etc., provides various opportunities and sources for the growth and development of any particular economy.Therefore,the demographic dividend is defined as the "accelerated economic growth that may result from a decline in a country's mortality and fertility and the subsequent change in the population's age structure." With fewer births each year, a country's young dependent population gets lesserthan the working-age population. In other words, it is a concept that refers to gains that economies experience at a specific demographic transition level.

There are four mechanisms during the demographic dividend through which benefits are delivered -

- First - Increased labour supply. However, the magnitude of this benefit appears to be dependent on the ability of the economy to absorb it.
- Second - Increase in savings. This happens when the number of dependents decreases, increasingnational savings rates and the stock of capital in developing countries.
- Third - Human capital. Empowerment of women reduces economic pressures at home.
- Fourth- increasing domestic demand is brought about by the increasing GDP per capita and the decreasing dependency ratio.

1.10 SUMMARY

The earth had a population of nearly 8 billion in 2021. It is expected to increaseby about 9.7 billion by 2050 and possibly stabilize at a little over 10 billion by 2200. Almost all future population increases will be in developing and under-developed parts of the world. Various measures calculate the population. Fertility itself is a measure that includes crude birth rate and fertility rate. Fertility is affected by many variables like - age and related fecundity, nutrition, level of industrialization, age at marriage, governmental policies, contraceptive use, abortion, and most importantly,women's empowerment. Spatial variations in fertility across the globe are closely related to the level of development.For example - the

total fertility rate in the more developed world is 1.6, while it is 2.6 in the less developed world. There is evidence of declining fertility in the developing world due to advancements in women's education and widespread acceptance of family planning.

Similarly there are three mortality measures - crude death rate, the infant mortality rate, and life expectancy. Globally, the significantcauses of death are old age, disease, famine, and war. Death rates show much less variation than birth rates globally. Sub-Saharan Africa is the last region of high mortality. Infant mortality and life expectancy are good indicators of health measures. Unlike fertility and mortality, natural increase is affected by the age composition of a population.

Regarding the age structure of the world's population, it is changing significantly as the proportions of olderpeople are increasing relative to other age groups. This is due to declines in fertility and an increase in life expectancy. Governments have intervened directly or indirectly to influence growth, like the birth control policies.

As of 2015, the population is estimated to continue to increase rapidly for another 40 years and then increase slowly. Many theories have contributed usefully to our understanding of population growth. Malthusian approach, the most discussed theory, saw the population as limited by food supplies. The demographic transitionmodel summarizes birth and death ratesover the long period of human history in what is presently the developed world. As societies move through the model's stages, high birth and death rates are replaced by low rates. During the intermediate stages, populations increase before stabilizing in the final stage.While demographic transitions explain the pattern of change in socio-economic characteristics of people over the process of economic development and growth, the demographic dividend refers to the potential financial gains which can occur when a county's working-age population is larger than the dependent population.

1.11 CHECK YOUR PROGRESS OR EXERCISE

1. True or False

a. Birth rates of 20 per 1,000 are considered high and are found in sub-Saharan Africa and Afghanistan.
b. Preventive checks are voluntary actions that people can take to avoid contributing to the population.
c. Doubleday, opined that the increase in the human population was inversely related to the food supply.
d. The principal feature of the Demographic transition model second stage is that CBR has been reduced dramatically due to the consequences of Europe's Industrial Revolution and modernization.
e. The central theme of the ZPG movement was that humans should stop giving birth to child/children.

2. Fill in the blanks

a. The term demographic transition was first used by _____.

b. The _____ is the difference between the number of births and deaths in a population.

c. Linkage between 'racial traits of populations to the group's physical environmental context' was developed by _____ in his book _____.

d. The accelerated economic growth that may result from a decline in a country's mortality and fertility and the subsequent change in the population's age structure is known as _____.

e. The _____ accurately shows females' reproduction rate and probability.

3. Multiple Choice Questions

1. The world population is expected to rise to 9.7 billion by

a. 2040

b. 2060

c. 2050

d. 2070

2. Demographic Transition theory stages sequence from 1 to 5

a. Low growth, increasing growth, population explosion, decreasing growth, declining population.

b. Increasing growth, population explosion, decreasing growth, declining population, low growth.

c. Low growth, increasing growth, population explosion, declining population, decreasing growth.

d. Population explosion, low growth, increasing growth, population explosion, decreasing growth, declining population.

3. "The Population Bomb" was published by –

a. Ehrlich
b. Thompson
c. Huntington
d. Sadler

4. _____ conveyed his population ideas in his book "The Law of Population"

a. Ehrlich
b. Thompson
c. Huntington
d. Sadler

5. The Irish potato famine or the Great Famine was in 1845

a. 1815

b. 1845

c. 1850

d. 1855

4.Answer the following Questions :

1. Write about the demographic characteristics of the world population.

2. Discuss in detail about the Demographic Transition Model.

3. Explain the difference between the demographic transition and the demographic dividend. Cite examples.

4. Critically review the population growth theories and models.

5. Briefly explain the world population growth and its present scenario.

1.12 ANSWERS TO THE SELF-LEARNING QUESTIONS

1.a. False

1.b. True

1.c. True

1.d. False

1.e. False

2.a. Warren S.Thompson

2.b. Huntington, 'Civilization and Climate'

2.c. Rate of natural increase

2.d. Demographic Dividend

2.e. Total fertility rate (TFR)

3.1. c

3.2. a

3.3. a

3.4. d

3.5. b

1.13 TECHNICAL WORDS AND THEIR MEANING

- **Birth rate** - the annual number of live births per 1,000 population.
- **Demographic transition -** The historical shift of birth and death rates from high to low levels in a population; mortality declines before fertility, resulting in a substantial population increase during the transition phase.
- **Doubling Time** – number of years required for the population of an area to double its present size, given the current rate of population growth.
- **Zero Population Growth** - the number of people entering a population through birth or immigration is equal to the number of people leaving it via death or emigration."

1.14 TASK

1. Most experts agree that the rate of world population increase is slowing down. The predictions made in the 1970s and 1980s for the 21st century were overestimates. Does this mean that world population is less important as a global concern now than it was three or four decades ago? How significant will population issues be in the future?

1. Read about the present status of Demographic Dividend.

1.15 REFERENCES FOR FURTHER STUDY

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2

SPACE, ENVIRONMENT AND PLACE INTERRELATIONS

Unit Structure :

2.1 OBJECTIVES

a. To provide the students with conceptual clarity about concentration, distribution and density of people inhabiting a given piece of this planet. The influence exerted by their place of residence on them and the favorable factors which attract more population towards any specific piece of land.

b. To familiarize the students with the important aspects of the Population Resource Relations and the occupation or other lucrative opportunities present or possible within that area, while keeping the environmental aspect in mind.

c. To acquaint the students with the diverse factors that prompt migration/movement towards another destination and the issues and challenges that need to be overcome by the displaced/dislocated people while dealing with 'placelessness' that is, the sense of belongingness, which does not come at once, it takes time to be generated within the migrated population when the need to adjust in a new environment arises in the scenario of immigration.

2.2 INTRODUCTION

The study of population is an interesting piece of knowledge about people, society, demography, race, regions, lifestyles, culture and more importantly the relationship people share with their surroundings and resources on which they are dependent. This knowledge enhances the understanding of any individual who wishes to know about the intricate details associated with the subject matter of this discipline, and generates in him, the caliber of viewing other individuals from the spectacle of equality and fraternity for the fellow humans that inhabit this planet irrespective of their race, place of origin, country they belong to, way of life, occupation or religion. The geographical scenario in which people try to make themselves comfortable by adapting to their surroundings is pretty much a function of their dependence on the available resources, the level of homogeneity, political stability and economic opportunity prevalent in that place. There are instances of displacement of people either of forced nature or of voluntary nature which have been observed during instances of turmoil, insecurity or calamity. This instigates streams of migration and movement from the degenerated region towards such an area which is seemingly beneficial. This fold of population geography will throw some light on concepts about concentration, density, migration and livelihood of people while discussing about their relationship with the environment such that the students will gain clarity on the essential and fundamental aspects and dimensions of population, demography and views of various scholars who have elaborately presented their ideas, based on their understanding of this subject, which they have acquired after lot of intense study and deliberation.

2.3 CONCENTRATION OF PEOPLE IN SPACE, DENSITY VARIATIONS AND IMPACT-RURAL AND URBAN DIMENSIONS

2.3.1 Distribution of People over the Continents:

The Greek scholars gave the concept of 'Ecumene' and 'non-Ecumene' regions which means that the world can be viewed in terms of two types of regions the former meaning inhabited and the latter meaning uninhabited/intermittently inhabited. Both these regions have specific type of climate, resource, geographic and socio-economic conditions which make them favorable for habitation and vice-versa. According to an estimate, the portions of Earth that can be categorized as inhabited amount to 40 per cent whereas, those portions that lie uninhabited or scantily inhabited amount to almost 60 per cent. Although it must be understood that even within the Ecumene, there are portions which are very sparsely populated. These include farms, parks, gardens, oasis, wetlands, forests, mountains/rocky lands, high plateaus, permafrost and mining areas. Canada is one of the countries which serve as an example of both ecumene and non-ecumene region. Here a large majority of the population lives within 150 km of the border from USA. The lower half of Canada is densely populated with 75 per cent of the population residing here and the upper half is rather very sparsely populated. With significant improvement in technology and transportation, non-ecumene can be meaningfully converted into ecumene. The Ecumene regions can be further divided into highly populated regions, moderately populated and sparsely populated regions. These categories will be looked into greater detail from the point of view of the geographic and socio economic conditions present therein.

If any region supports a large or small concentration of population it must be viewed from the angle of determinism i.e. environmental influences upon that region. These influences include- aridity, snow cover/permafrost, mountainous terrain, high altitude and dense vegetation. Apart from these physical influences, social, political, demographic, historical and economic factors also exert a significant influence on the people and their desire to settle in a particular place.

2.3.2 Population Concentration and Density:

While studying the distribution of population it is observed that there are places which are densely populated and others with just a handful of people. This concentration of population in different parts of the world or even different parts of any country is understood in terms of 'Density of Population'- this term has an important implication. It is defined as – number of persons living per unit (per sq. km) of the land area. It is calculated by dividing the total population by the total area. For example if the population of a given place is 1000 people and the area is 25 sq. km then the density of population in that place will be= 40 persons per square kilometer. Almost $3/4^{th}$ of the world's population resides in just 15 per cent of the land area of this planet. On the other hand, just 10 per cent of humans reside in almost 75 per cent of the land surface owing to

geographical and climatic constraints. At present the population density of the world is 58.53 persons per sq. km. The countries that support the highest densities of population include- Bangladesh, Maldives, Hong Kong, Singapore, Bahrain and Malta. All these countries have a population density of more than 1000 persons per sq. km. On the other hand, the countries that are scantily covered with human population include- Greenland (with just 0.14 persons per sq. km), Canada, Iceland, Australia, Namibia, Botswana, Libya, Mauritania, Mongolia, Guyana and Suriname. These countries have a population density of just 2-5 persons per sq. km. India has a population density of 473.11 persons per sq. km, china- 153.7 persons per sq. km, USA- 36.6 persons per sq. km, Sri Lanka- 348.76 persons per sq. km, Japan- 344.54 persons per sq. km, Indonesia- 148.7 persons per sq. km, United Kingdom- 283.13 persons per sq. km and Germany- 240.1 persons per sq. km. these countries fall in the category of moderately populated. (World Bank, 2022)

It is interesting to note that till the middle of the 20th century the continent of Europe dominated in terms of population density in the world. But thereafter saw a constant decline especially after the industrial revolution. Now the continent of Asia dominates in terms of population density. Today, the world population is majorly concentrated in 3 major clusters namely; South Asia, South East Asia and Europe. There are 4 minor clusters of high population density as well including- East and central North America, South Eastern Australia, South Eastern part of South America and Nile Floodplain, Malawi, Nigeria, Ethiopia, Uganda and Ghana countries of Africa.

Note: In the Asian and African clusters, majority of the people reside in the rural areas whereas, in the European and American clusters the scenario is totally different, with maximum people residing in the urban areas.

2.3.3 Climatic & Geographical Influences on Density Variation in Rural-urban dimensions:

There are a number of determining factors that directly and indirectly influence the concentration of people residing in any given area. The physical restraints posed by the natural environment in the form of either climate or physiography act as factors that govern density variation of human population. These are elaborated below for better understanding.

- Climate is a function of both temperature and rainfall. It also indicates the level of humidity or aridity that a place experiences. If a tropical region is too rainy and humid it supports more biodiversity i.e. both flora and fauna and can be seen in the form of the rainforests/evergreen forests which thrive in such areas. E.g. Amazon, Congo-Zaire, Daintree, Southeast Asian, New Guinea Rainforest etc. the dense vegetation cover, animal population and wet conditions of these areas make human settlement precarious and challenging. Thus, these areas support negligible humans and most of these are tribal.

- On the other hand, if a tropical region is too dry and arid it is said to have desert type of climate. These conditions too support very few humans who are resilient enough to withstand such a climate. Here, the potential evaporation exceeds the precipitation. The soil is sandy, very porous and usually devoid of moisture content. This hinders the growth of lush vegetation and sparse/ thorny type of vegetation that thrives here, is incapable of supporting much of wildlife. The area suffers from perennial water shortage. This makes life difficult thus resulting in much lower population concentration and growth. Oasis is generally the greatest source of freshwater E.g. Sahara, Atacama, Kalahari, Great Australian and Arabian Desert. Such areas are primarily rural and rudimentary in outlook.

- Conversely, a region that is located in the higher latitudes, is usually cold and experiences harsh winters. If such a region is arid and dry, it is known as a 'cold desert'. Here, the conditions are similar to that of a hot desert with the exception that the temperatures are much lower, (mostly less than 0^{o}C). The soil is unable to support luxuriant vegetation growth. Therefore, wildlife and human populations are scanty (very low). E.g. Gobi Desert, Greenland, Leh-Ladakh, Tibet, Antarctica, Patagonian desert etc.

- In all these areas, practicing agriculture and allied activities is practically impossible or possible only with technological intervention that too for a very short duration of 2-3 months. The people here are generally tribal, nomadic or animal rearing in nature and practice rudimentary techniques for making a living.

❖ Physiography is a function of topography, all landforms present on the earth, their characteristics and the influence these exert on the concentration of human population. Rugged topography or mountainous terrain usually supports less population and the density too is very low. These areas are considered to be fragile with a fear of landslides or portions of land breaking from the mainland and drifting away during events of torrential rains or due to weakening of the ground structure because of too much human intervention. Moreover, such areas do not prove to be favorable for the growth of many crops and practicing agriculture is a difficult task on the slopes of the mountains. These areas also suffer from other challenges of transportation, communication, medical, educational and tertiary services. Thus, the people residing here are mostly of a rural character who depend on primary activities/ mining to earn a living. E.g. Higher reaches of Himalayas, Rockies, Andes, Alps etc.

- River valleys which were considered the cradles of human civilization, once upon a time, till today hold their undeniable significance in supporting large concentration of human population and helping it to flourish. Due to continuous supply of freshwater, permanent human settlements have found their way on the banks of the rivers. Initially these used to be rural and agrarian in nature due to perennial availability of water for irrigation but gradually with the progress of time and advancement of technology and means of transportation and

communication they are becoming urban and mechanized. E.g. Nile, Indus, Ganga, Brahmaputra, Mississippi, Yellow River Valleys etc.

- Soil: Areas with a rich soil cover inevitably attract more people and the density keeps increasing. Fertile plains, areas where the soil is naturally renewed due to flooding or the action of rivers and weathering are places where the soil quality is good and agriculture/horticulture and allied activities flourish. Such places give birth to several secondary and tertiary activities as well. Thus, making way for a gradual but steady shift from the initial rural and agrarian nature of that area towards urbanization and development. Contrary to this, the areas which have experienced deforestation or intentional clearing for the purpose of cultivation of crops are said to possess inferior soils. Moreover, these are also susceptible to erosion and land degradation. Such soils are typically found in places where rainforests are cleared. These soils have a lower potential and are highly leached due to the wet and rainy climate. Hence, they are unable to produce a higher yield or good quality crops. E.g. Zaire basin in Africa, Amazon Basin in S. America, North Eastern States of India where Jhum Agriculture is a common practice. These places remain typically rural and rudimentary.

2.4 POPULATION RESOURCE RELATIONSHIP

Like population distribution, the distribution of resources is also irregular and unequal. Resources are such substances which hold prime significance in promoting the concentration and growth of population in any given region. The resources can be in the form of metallic minerals, fossil fuels, renewable resources or even tertiary services which make our lives more comfortable and easier. The higher the availability of these resources in a region, higher is the density of population residing there, since, these create congenial conditions for the growth and survival of the people. Now the question arises- how much population can be considered optimum in comparison to the quantity of resources present? This leads us to the theory of 'Optimum Population' which is always discussed in close connection with the presence and availability of the existing resources.

2.4.1 Optimum Population:

This can be understood in terms of the 'carrying capacity' of the region. Human settlement increases and tends to gain momentum in areas where there are enough resources for a convenient living. But for tapping and exploiting these resources there should be enough availability of skilled manpower as well as technology and transportation. In the absence of the latter, the existing resources will lose their significance.

- For a country to obtain a state of optimum population, it is necessary that the number of people living there should be in equilibrium with the existing resources. Thus, it can be said that, availability of employment opportunities and resources should keep pace with population rise. If this condition is not fulfilled then the law of 'diminishing returns' starts operating. This happens because the

population, due to its nature of increasing at a geometric rate (i.e. 1,2,4,8,16,32, 64, 128, and so on), tends to grow at a much faster rate as compared to the rate of growth of the resources. Therefore, the situation of population exceeding the carrying capacity of that country/region arises. Such a situation gives rise to the problems of overcrowding, congestion, traffic, insanitary conditions, landfills, squatter settlements, poverty, malnutrition, strain on land and resources etc.

- It should be understood that after a region hits the optimum population mark then with every small increase in population there will be a decline in the per capita productivity and per capita income as well. When more individuals depend on the same resource base each of them starts experiencing resource scarcity. A region no doubt needs population for effectively putting to use the resources present, but care should be taken that population does not exceed the optimum limit so that, problems related to over population do not arise. But in most of the urban or even rural settings of the third world countries, the scenario is far from being ideal or favorable.

- On the other hand, in case of underpopulated regions, where in climatic and physiographic conditions are inhospitable, the resources mostly remain unknown and untapped. Even if their existence is known, there is lack of skill, technology, and equipment plus transportation facility to derive benefit from them. Like- oilfields in parts of Siberia, mineral resources in Antarctica

- Thus, population essentially acts as a resource and an asset when growing in optimum limits. In case of either overpopulation or under-population there shall certainly be challenges which humans will need to overcome.

2.4.2 Limits to Growth:

There exists an undeniable relationship between the population and the resources that are present in any country/region. As the name suggests, there is a 'limit to the growth of these resources' while, the population growth can assume enormous proportions, until there is an external/environmental force that controls it or imposes restriction on its expansion. Keeping this concept in mind, Prof. J.W. Forrester and D.H. Meadows along with their team colleagues (Donnella Meadows, Jergen Ronders and Wiliam Behrens), developed a computer model. This model was based on the dynamic system approach looking at the whole world as a system. This was done in order to determine the magnitude and nature of exhaustion of the global resource base given the high rate of growth of the population of the world and their consumption patterns. The scholars were also interested in gaining an understanding of- the future scenario of human survival and growth if the people continue to greedily exploit/consume all the available resources.

A non-governmental scientific forum called the 'Club of Rome' and Massachusetts Institute of Technology (MIT, USA) together sponsored

this entire project. The Population-Resource data of 1900-1970 was used as input for the model. When the task of data processing was completed, the results were published in 1972 in the form of a report titled- 'Limits to Growth'. This entire report revolves around the interaction and interplay of 5 major parameters namely-

- Population growth
- Natural resources
- Economic development affecting the food per capita, and industrial output per capita
- The subsequent increase in pollution leading to environmental deterioration.

The scholars found it important to prepare this report because the high population growth rate, high consumption patterns, fast depletion of resources and environmental vulnerability were emerging as major causes of concern for the whole mankind. Therefore, this report is said to project a gloomy picture of the future world as it laid great emphasis on the fact that, the alarming growth of population will pose several threats to the society, since this will accelerate the extraction and consumption rate of the existing resources. If this happens, the world will experience acute shortage of many resources and this in turn will compromise the economic development of the nations. On the basis of the calculations done by Forrester and Meadows a future scenario was projected which highlighted certain fears in the form of demerits of excessive population. These are:

- Lack of food grains available per capita due to over strained agricultural resources
- Depletion of the prime metallic minerals required for industrial development in the next 50 years.
- Stagnation of technological development
- Absence of alternate resources.

The above demerits were projected, keeping in view the 6 assumptions presented by Forrester and Meadows. The model- 'Limits to Growth' is based on these 6 assumptions. These are:

- There exists a limited quantity of the consumable non-renewable resources.
- There exists a limited extent of cultivable land.
- The Atmosphere has a limited capacity to absorb the pollutants released from man-made sources.
- There exists a limited amount of food supply that can be obtained from a given piece of land.

- Population increases at an exponential rate and thus, the industrial output which is dependent on the supply of raw materials (resources) will start diminishing over a period of time due to over-exploitation of the resources.

- Technological innovation and improvement is possible only when there is enough economic independence and continuous inflow of capital while paying much attention to resource recycling and pollution control to preserve the environment.

Note: the model is not a prediction but just a projection of the series of events that are likely to occur in future if the population continues to increase exponentially and the resources are consumed at the same rate. It is important to note that, there were several attacks and criticisms levelled at this model by many scientists, disciplinarians and scholars. The model suffers from several flaws and the authors also admitted that the model was very crude, oversimplified, and preliminary also, they did not take all the current and future variables and scenarios into account.

2.5 LIVELIHOOD RESPONSES-ROLE OF TECHNOLOGY- NATURE OF ECONOMY AND ENVIRONMENT

In any country by and large, the humans beings characteristically prefer to settle down in those areas which are hospitable from the climatic and geographic point of view. This makes the area more livable and the life of humans more comfortable and easier. The presence of abundant natural and renewable resources act as an additional catalyst in attracting humans who are looking for a permanent settlement solution. Gradually, the people find suitable occupations in their area of residence and start earning a living. Initially, they use rudimentary techniques and implements, but slowly, with the changing times and exchange of information/skills, they become modernized in their outlook and modern techniques replace the primitive ones. These conditions not only attract more people from other areas but also aid the growth and multiplication of the existing native population. Thus, over a period of time, the character of the entire place changes from predominantly rural to predominantly urban or even metropolitan. The density of population in that place also increases and so does the economic and technological advancement. In the words of Clark- the influence of the physical environment reduces considerably, once the population enters the era of industrialization, urbanization, mechanization and globalization. Let us look into some of the factors which significantly influence the livelihood responses of the people inhabiting any country or region.

2.5.1 Technology:

- This term is used to denote the progress made in the field of science, information, communication and engineering. This is a broad term which includes experimentation, skill, technical know-how, tools and equipment that are involved in designing a new invention which

benefits mankind and promises a better lifestyle. Any region which is backed by technology and has a scope for further advancement in this field, almost always attracts more people and influences their distribution in a variety of ways.

- Technological improvement promotes industrial development, economic diversification, mechanization and urbanization, while, increasing the 'population carrying capacity' of that region. There exists a cause and effect relationship between technology and economy.

- Innovations in the field of technology have brought about many breakthroughs in agriculture, industry and other aspects of economy thus altering the livelihood responses of people across the world. E.g. extension and provision of irrigation facility in the desert regions or arid lands has made the cultivation of a variety of crops possible in these areas. This has attracted more people to these areas thus increasing the population concentration here. The introduction of chemical fertilizers, insecticides, high yielding crop varieties, farm machinery etc. has revolutionized the entire agricultural scenario all over the world. The invention of modern gadgets in homes and offices have improved livability while making life more convenient and easier as, now the same amount of work takes lesser time to be completed with the help of modern technology. We can see the examples of advancement of technology everywhere in our everyday life in urban scenarios. This even has a trickle-down effect till the grass-root level, although the effect is somewhat gradual. But improvement in living standards is no doubt very perceptible.

2.5.2 Economy:

- Employment opportunities and a steady source of a reasonable income are the precursors of a densely populated region. These ensure a better living standard, which acts as a major 'pull' for any individual. It is a well-known fact that people usually migrate from their place of origin to those areas which provide more livelihood options and have a higher 'economic potential'. This is usually seen in the case of movement of people from the rural towards the urban areas or from small towns towards big cities, since the latter is better equipped in terms of providing livelihood facilities either in the form of secondary sector (manufacturing industries) or in the form of tertiary sector activities.

- Higher economic potential of any area means- the region's suitability for human occupation is also higher. This is due to the fact that, there are numerous occupations available in various sectors like- education, medical, retail, trade, commerce, transportation, law, exploration, building/construction, mass media, electronics, telecommunication, Information technology, mining, MNCs, NGOs, Government Offices, marketing and planning/architecture. All these sectors require enough manpower in order to function optimally. The requirement of working

population in all these employment generating sectors increases the economic potential of that region.

- Once employment is generated in a region, it starts attracting people from different parts of the country. This is true in case of the 4 major cities of India namely; Delhi, Mumbai, Chennai and Kolkata, Also in case of the state capitals as well as major industrial townships like Jamshedpur, Kanpur, Agra, Aligarh, Anand, Coimbatore, Kanchipuram, Kapurthala, Selam, Vishakhapatnam, Singbhum, Jharia, Kochi, Digboi, Darjeeling, Ludhiana, Mysore, Nepanagar, Rourkela etc. Apart from these, IT hubs like Pune, Bangalore, Hyderabad, Dehradun, Ahmedabad, Chandigarh etc. are places of high concentration of humans. A gainful economic potential is not only responsible for a large size of population but also determines its spacing. This indicates that the concentration will be more in the vicinity of the employment facility and as we move farther from it the density keeps reducing.

- The distribution pattern of human settlement in an agrarian region differs from that of an industrial region. Moreover, the density of population is directly proportional to economic diversification (i.e. availability of a variety of employment options). Due to this reason, the industrial and urban areas experience higher population densities as compared to rural/agrarian areas.

- It must also be understood that, for the growth of employment opportunities and for boosting the economic potential, scientific and technological development is a mandatory pre-requisite. Because with newer technical revolutions comes economic diversification. Thus, it can be safely said that technological advancement and economic improvement go hand in hand and both these aspects are interdependent and are complementary to each other.

2.5.3 Environment:

- The environmental aspect plays a vital role in all stages of technological and economic development. Environment has been present at all times even before the human civilization in different parts of the world came into existence. Initially man was considered subordinate to his surroundings or the locales that he inhabited. The concept of ‘environmental determinism’ was given great importance. This was because, humans were solely dependent on the natural environment for their survival and growth. The basic needs of food, clothing and shelter were directly fulfilled by nature. So, people started worshipping nature (and its various forms like forests, mountains, water bodies, fire, sky, wind etc.) as they considered it much superior rather supreme. Plenty of examples of environmental determinism have been cited by many scholars like; the body structure of the humans is dictated by the environment they are born in, human settlement was considered impossible in harsh climatic conditions, humans easily became victims of nature’s fury (natural calamities).

Mountains, valleys, rivers, seas, etc. were considered unsurmountable or impassable.

- Gradually due to inventions, innovations, explorations and technological expansion, times started changing and the tasks that seemed impossible once upon a time started to become possible and within the reach of the humans. Thus was born the concept of 'possibilism' which rejected the superiority of the environment and established the authority of man over his surroundings. This could happen only due to the introduction of technology and its subsequent improvement over time. This gave birth to employment which helped mankind improve its lifestyle and living standards. From nature worshippers, humans became worshippers of technology. Every small or large need of this race was taken care of, by technology. He could now make a living even in difficult terrains or climatic conditions and he started molding his surroundings according to his requirement. Now there are well developed warning and alert systems that predict certain weather phenomena so that safer locations can be reached and the effects can be mitigated.

- Forests have been cut to make way for human settlement and agriculture, mountainous areas, islands and even areas covered with snow during winters have become habitable, many landform types have been cut and tamed to make habitation possible, medical science has made enormous advances and treatment for several incurable diseases has been found, rivers have been dammed for production of electricity, canals have been built for making irrigation possible in arid areas. Soil fertility has been improved to increase crop yield. Remote sensing and aerial photography have paved the way for the beginning of a new era in which the hidden facts about one's own country as well as other countries around the globe can be easily known and the defense, presence of minerals, crop health, sources of water pollution, forest type and extent of its cover can be easily known and improved now a days.

- It is true that today, the humans are no longer subordinate to the environment in a manner they used to be centuries ago, but it must also be understood that all this advancement has taken a toll on the natural environment and it has been degraded beyond the point of self-repair thus causing the problems of climate change, global warming, acid rain, extinction of certain species, rise in the ocean level due to melting of glaciers, spread of new kinds of deadly diseases, forest fires etc.

Hence, humans should understand the demerits of using too much technology and should go slow in this regard as, all this comes at the cost of the natural environment. If sustainable development is not considered and taken up as a priority, by all the nations of the world, then, there will be unavoidable vices which, the humans will not be able to deal with, and these shall impose checks on the growth and multiplication of human population as pointed out by T.R. Malthus. It must be remembered at all times that nature has endowed upon us its bounty in the form of

renewable, non-renewable and other precious resources. These should be utilized for fulfilling our need, not our greed, so that the benefits can trickle-down to future generations too.

2.6 ISSUES OF DEGRADATION DISPLACEMENT PLACELESSNESS IN INDIA

The terms Degradation, Displacement and Placelessness are generally used in close association with each other. The natives of any country/region experience such situations when, there exists political or economic instability and insecurity or wars/conflicts and intolerance among different communities, and these situations persist in the country over a long period of time. The natives find such conditions unbearable and thus, start exploring other options in order to save themselves from the turmoil and precarious conditions. As observed in many such circumstances, 'escapism' (migration to neighboring places) is the most sought after option by the masses. In order to protect themselves and their interests, people migrate in large numbers to other countries which are more safe, secure, tolerant, politically stable plus economically diverse, sound and welcoming. Places/nations that experience degradation are usually those which are hit by severe calamities which can be either natural, political or economic in nature. Moreover, the chances of coping with such calamities and coming back to normal seem to be grim. Examples of natural calamity hit nations include- Nepal- hit by massive earthquake in 2015, Sub-Saharan Africa (Botswana, Angola, Somalia, Namibia, Zimbabwe etc.) - hit by severe drought in 2015, drought hit Syria for consecutive 5 years leading to ethnic tensions and civil war. Malawi experienced flooding during the same time which incited violent conflicts and caused forced 'Displacement'. Furthermore, below average rainfall, food insecurity and undermining of rural livelihoods instigate migration decision among the people. The countries of North Korea, Ukraine, and Afghanistan Even Iran which led to the fleeing of Parsi community for the fear of religious persecution etc. are examples of political disasters. Here, there is a constant struggle and competition for resources, which forces out-migration.

It should be noted that, the countries/regions hit by natural or man induced disasters also suffer from economic perils as the economy of such places is shattered and goes into regression. There are issues of economic recession.

The issue of Placelessness arises when the people of a particular country are displaced from their own place of origin and have to find shelter in another territory/nation which does not belong to them and are required to live, interact with, co-depend on and work for an entirely different set of people who are complete strangers in a foreign land. The sense of belongingness towards that place does not arise immediately and the refugee population are at the mercy of the government, natives and policies of that country/region. This lack of belongingness gives rise to the problem of placelessness among the migrated population. Psychological problems pertaining to adaptation start arising. There can be issue related to immunity, spread of diseases brought by the migrants into the host area,

space constraint, changes in clothing and diet patterns etc. by this both host as well as migrant population is affected.

- Often there are many hardships that are associated with migration from the place of origin to the place of destination. The migrants are faced with the challenges of finding appropriate accommodation, employment, and assimilating themselves with the natives in terms of language, lifestyle, culture, food-habits, and religious preferences and so on in the unknown territory.

- If the motive behind migration is not driven by wars/conflicts/political instability/intolerance rather, it is inspired by the desire of educational attainment or economic prosperity then, the source country/region experiences issues of brain drain and reduction in the numbers of the youth who fall in the working age-group category which is a cause of concern. Migration is oftentimes selective in character (women, children and old people are the last to migrate for economic gains) and both the source as well as destination regions witness modification/distortion in their age and sex compositions. Population size reduces in the source area and escalates in the destination. Also, the natural rates of population growth are significantly affected in both regions.

- It is worth mentioning that, there exists a population resource ratio in every region. This is usually in a state of balance until the strains of migration interfere or there is unprecedented natural growth. In such cases, the balance is disturbed and the carrying capacity of the regions experiencing in-migration is highly affected leading to demographic consequences as well as overcrowding, congestion, struggle for resources, poor standards of living and health issues due to insanitary conditions. Moreover there is pressure on the social infrastructure as well. There are chances of cultural/linguistic conflicts between the migrants and the hosts.

2.6.1 Instances of migration issues with respect to India:

In India, there are instances of both interstate as well as intra-state migration. It has been many a times observed that there is a propensity among people to migrate from rural to other rural areas with better opportunities, rural to urban areas, urban to other urban areas (small towns to big cities). This is usually the scenario when people are not satisfied with the existing economic, educational, medical or natural conditions (environment related- flood, drought, cyclone, earthquake, landslide etc. prone areas) in their native places. Thus, in order to achieve better living standards and economic prosperity they decide on leaving their homeland and migrating to such areas which are better equipped with such facilities. This not creates distortion in the age-sex composition at both ends, while decreasing the source population and increasing the destination population but also creates an imbalance in resource utilization and consumption in both places. This has been observed in the case of the Himalayan states of Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh. The

rugged topography of these states hinders development, economic growth and realization of the resource potential. The people are lured by the urban outlook, employment opportunities and economic prosperity of the plains which are better developed and equipped with modern facilities. Hence, people leave behind their rural lifestyle in order to grow and keep pace with the changing times and technological advancement. As a result of this, there is under-utilization of the resources in the source region and over use in the host region. This creates problems of pollution, SPM released in the air due to construction activities, heat island effect due to use of modern air-condoning. Furthermore, it exerts pressure on the land, civic amenities, housing, transport, medical and educational facilities in the place of inflow of migrant population.

Over a period of time, due to huge influx of people in big cities/metropolises like state capitals, port cities, industrial towns and IT hubs, the carrying capacity of the host region is disturbed and problems of population explosion, poor management of basic amenities, spread of tropical diseases, competition at workplace as well as for resources, need for learning new skills, psychological stress, higher crime rates and inflation start taking shape.

As far as rural to rural migration is concerned, they experience such complications like- heavy stress on agriculture and allied activities because employment is generally found in the primary sector. Issues of fragmented lands, disguised labor, soil salinization (Rajasthan, Punjab, Haryana, UP, MP) due to over production and overuse of chemical fertilizers, unemployment, and malnutrition plus lower living standards start emerging in these places.

Significant rise in the number of the people, falling in the category of dependent population- Children below 16 years of age and adults above 60-65 years of age are considered as dependent people. They are dependent on the working category (16-65 age group people) for fulfilment of their needs. In case of out migration the migrants are mostly in the age group of 16-65. They are youthful, more competitive, energetic and mobile. They prefer moving towards those places which are more lucrative and modern. Thus, the dependent population is left behind in the source region which increases the dependency ratio in those areas. This leads to the area's restricted growth and development. E.g. Bihar, Orissa, seven sister states of the north-east.

Shortage of workers/skilled manpower, poor infrastructure in the areas of out-migration, rural depopulation and urban sprawl (Delhi, Mumbai) rapid growth and development of the core regions and slow/stunted development of the periphery are other challenges associated with degradation and displacement.

2.7 EXERCISES

a) Fill Ups.

1. The term Ecumene refers to _____.
2. Almost 3/4th of the world's population resides in just ___ per cent of the land area of this planet.
3. In the deserts, vegetation and population is found near the _____.
4. Bangalore is an example of _____.
5. People in the _____ age group are considered to be working population.

b) Multiple Choice Questions (MCQs).

1. Under-utilization of resources has been observed in this Himalayan state.

a) Uttar Pradesh

b) Punjab

c) Uttarakhand

d) Tamil Nadu

2. Issue of soil salinization has been mainly found in this Indian state

a) Kashmir

b) Chhattisgarh

c) Manipur

d) Punjab

3. The model Limits to Growth was developed by:

a) Forrester and Meadows

b) T.R. Malthus

c) G.K. Zipf

d) W.W. Rostow

4. One of the following is a cold desert. Identify.

a) Thar

b) Sahara

c) Kalahari

d) Gobi

5. One of the following has a high density of population

a) Saudi Arabia

b) Bahrain

c) Mongolia

d) United Kingdom

2.7.1 Answers to Exercises:

a) Fill Ups.

1) Inhabited regions

2) 15%

3) Oasis

4) I.T. Hub

5) 16-65

a) MCQs.

1) Uttarakhand

2) Punjab

3) Forrester and Meadows

4) Gobi

5) Bahrain

2.7.2 Task: Long Answer Questions

Try to attempt the questions given below.

a) Explain the meaning of the term Population Density. Give a detailed account of Climatic & Geographical Influences on Density Variation in rural and urban dimensions.

b) Describe the concepts of degradation, displacement and placelessness. Elaborate the challenges faced by the source and destination areas as a result of migration.

2.8 SUMMARY

After gaining a thorough understanding of this unit, the students will now become fluent with the concepts that have been systematically elaborated under the various headings of this study material and will be able to reflect upon the meanings of population density, distribution, optimum population, carrying capacity and migration of population. Students will be able to identify the influence that climate and physiography exert on the concentration of people in any given region along with the role of environment, technology and environment in shaping the livelihood responses of the people. The issues of degradation, displacement and placelessness and the challenges that are posed by them, have been

elaborated in the text for the purpose of creating a better understanding among the students.

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3

POPULATION AND SOCIAL RELATIONS

Unit Structure :

3.1 OBJECTIVES

- To understand the meaning of people, society and their culture.
- To study the nature of early migrations and evolution of cultural hearths.
- To learn about the people as social groups with reference to their Ethnicity, race, caste, religion and language identity issue.
- To study various dimension of gender and related aspects with relevant examples
- To study the various aspects of people and their economy- Population as a resource- Economic and occupational characteristics-their Spatial patterns- Changing status of labour -Recent trends.

3.2 INTRODUCTION

Social relations are a primary feature of human life. These social relations at individual level can be observed for various age-groups based on gender within family, in the society, at work place in institutions/organisations and between various regions. These social relations at individual level and group level are influenced by internal as well as external factors. This influence may be in the positive form of support system, building healthy relationship, giving satisfaction etc. or may be negative that may affect health and happiness for individual or society through conflict, barrier, abuse, threat, war etc.

3.3 PEOPLE, SOCIETY AND CULTURE - EARLY MIGRATION AND EVOLUTION OF CULTURAL HEARTHS

3.3.1. People, society and culture:

Society passes through various stages and undergoes enormous changes. Historians and other social scientists have defined several stages of societal development. It has been roughly estimated by historians that human society evolved over 6 million years of the hominid revolution. However, they seem to acknowledge that the two greatest revolutions in human history are the first agricultural revolution and the second industrial revolution; which had the greatest impact on human states of living or peoples' cultures, economic and social conditions. Nevertheless, it has been suggested that the era of information and communications in the 20th and 21st centuries represents another great revolution that transformed the people's ways of living and their economic, political, social, and cultural interactions. The roots of civilization came into existence probably 20,000 years before the advent of the agricultural age and the establishment of permanent human settlements. Referred to as hunter-gatherers, these prehistoric nomadic groups harnessed the use of fire, developed an intricate knowledge. of plant life, and refined technology for hunting and domestic purposes as they spread from Africa to Asia, Europe, and beyond. With favorable conditions supporting permanent communities in areas such as the Middle East's Fertile Crescent and the domestication of plants and animals, the agriculture-based Neolithic Revolution began approximately 12,000 years ago. As man started living a settled life in groups with cultivation of crops near river banks due to its fertile soil and abundant water fresh water supplies it gave rise to agriculture that provided with certain and secured food supplies. This helped to develop permanent settlements in habitable climatic zones that produced a certain lifestyle based on its surrounding natural landscape and resources. Over a period of time it developed into a culture. Cultural Hearths are the centers of origin of ancient civilizations and they still persist to aspire and influence the modern societies in this global world.

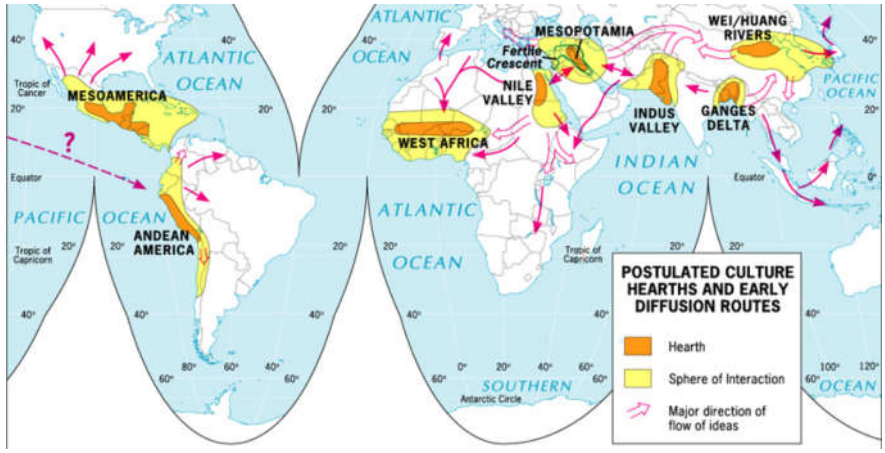
Natural barriers in the form of deserts (hot/cold) large water bodies (rivers, seas and oceans), marshy lands (equatorial forest) and lofty mountains prevented mobility and so many of these settlements for centuries remained isolated from each other. As a result different societies with their culture evolved. Inventions from these civilizations got diffused with early migration period giving rise to evolution of cultural hearths.

3.3.2. Early migrations and Evolution of Cultural Hearth :

A particular culture evolves depending on its surrounding environment with advent of knowledge and skills adopted over a period of time. This culture of a particular group in a region is easily noticed and broadly understood with reference to their food habits, clothing style, shelter (layout of house type), religious belief and practices of custom, language of communication. All these spatial aspects are observed by a geographer and mapped to represent the origin of cultural regions and its spatial distribution and in the world. This evolution of cultural region is largely an outcome of earlier physical barriers that prevented mobility of people across the oceans or mountains or rivers. Secondly the origin of various inventions with reference firstly the fire, tools and implements, agriculture, medicine, transport, processing and manufacturing with different skills and later further advancement in science, technology led to differences in identifying and locating these cultural regions. Movement and migration of people with improvement in transport facilitated spread and diffusion of culture to other areas. With routes of trade; developing their colonies and later by conquering the region. However dominance of any religion and language in a region forms the main components of identifying cultural regions in the world. This observation by a geographer forms the base for spatial analysis and mapping the location and distribution of cultural regions in the world. Concentration and number of religious structures, main language of communication, food habits, dressing style, and layout of houses provides a key to differentiate between different cultural regions across the world.

Thus the word “culture” refers to a particular way of life of a specific group. Cultural hearths are thus the areas of origin of a culture. These represent origin of ancient civilizations of the world. In the ancient past, major cultures began in an area called a cultural hearth. From these areas, cultures spread (diffused) outward, carried by people involved in trade, travel, conquest or immigration.Thus the term cultural hearth is used to describe centers of innovation and invention from which key cultural traits moved to influence surrounding regions. These are the foundations of major cultures.

Geographers and historians believe that there were several cultural hearths in the ancient world. They are shown on the map below.



In seven places known today, ancient people "invented" cultures, and these cultures still influence the way people live today. The seven original cultural hearths are located in: Mesopotamia, Nile Valley and the Indus Valley, Wei-Huang Valley, Ganges Valley, Mesoamerica, West Africa, Andean America.

Mesopotamia :

Mesopotamian culture dates back to 5500 B.C. Mesopotamia is the oldest ancient cultural hearths with emergence of agriculture in its fertile soils. Jericho city was one of the early settlements having longest history of human habitation. Later unified Egypt became a powerful cluster of culture and commerce in the lower reaches of the Nile River. This area in recent times was settled by Arabs belonging mainly to Islamic religion. This culture got diffused to Nile River Valley and to the Indus River Valley.

The Nile Valley: The Nile Valley is the second great cultural hearth that was formed on the banks of upper Nile river in Africa. Deposition of fertile soils after regular seasonal floods yielded rich harvest of millet and rye. Availability of abundance of food grains provided food security leading to growth in population. This led to a formation of hierarchy and practice of knowledge accumulation through hieroglyph memos on tablets of wood or clay. Observation of the moon and sun rotation cycles in the solar system by ancient Egyptians to develop a pattern of time and calendar. Nile river valley is thus the birthplace of Egyptian culture. The Nile Valley Culture was born on 3300 B.C. The Nile Valley culture was influenced by the Mesopotamian culture. This culture later diffused to West Africa and sub-Saharan Africa.

The Indus and Ganga Valleys : The Indus and Ganga river valley civilization was the birthplace of a culture that began around 2300 B.C. Fertile soils with moisture in the flood plain of the Indus river promoted crop cultivation using primitive wooden tools leading to a settled lifestyle. Later processing of cotton and development of earliest textiles became the first trading commodity with its nearest civilization located on the same latitude. Thus the Aryan migration to India around 1500 BC developed its cultural influence to coincide with the flourishing Ganga River Valley

civilization. The literature reveals social organization and cattle breeding as major source of livelihood with large size of families in the valley of the Ganga River. The literature of that period boasts the names of certain clans and their achievements.

The Wei- Huang Valley : Cultivation of crops in the fertile soils of Wei-Huang valley is dated at about 5000 BC. As a result population grew and numerous small settlements evolved upto 3000 BC in Wei-Huang valley. As trade started growing regulatory measures were needed that formed the opening up of the formation of hereditary monarchies such as Xia (ca. 2200-1750), Shang (ca. 1750-1100), Xia (about 2200-1750) and the Shang (about 1750-1100). Later the empire came into influence of Indo-European culture wherein bronze and chariots got introduced to yellow river people, as well as objects of invention from Mesopotamia. Zhou Dynasty (1122-256) is connected with the beginning of Chinese classical civilization. This culture diffused into Southeast Asia into Indonesia and then across Indian Ocean to the island of Sri Lanka.

Southeast Asian Culture: Diffusion was less of Southeast Asian Culture. This culture evolved independently around 1500 B.C in the southern end of IndoChinese Peninsula. It is closely related with trade routes that shaped its cultures and religions. Trade with Roman and Chinese empires by the countries of Indonesia, Malaysia, Thailand , Vietnam and Laos got exposed to new cultures of east and west. Hinduism and Buddhism were dominant religions of in India that have their strong legacy in the form of art and architecture in these societies. Brahmins and Monks had crucial place in the society. Buddhism spread to the east through monks. Monuments and shrines got erected in the honor of the Buddha. The Stupa is widely represented throughout Asia, built for corporal relics or as Nirvana.

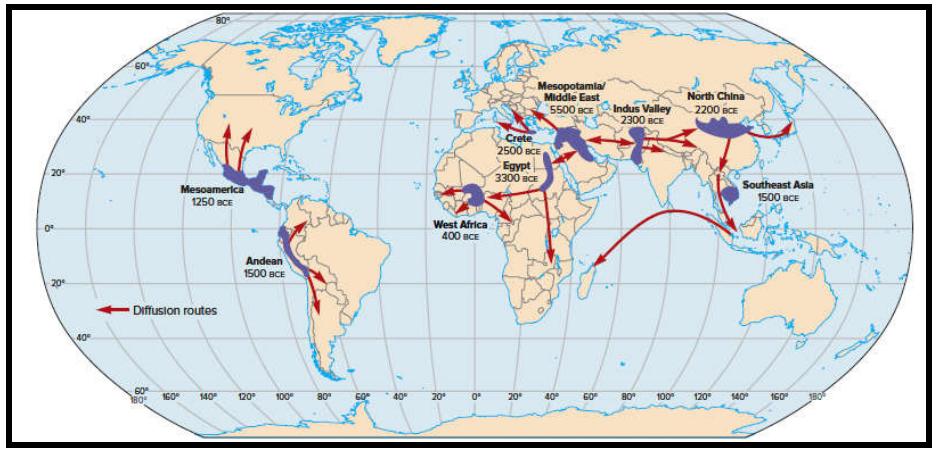
Mesoamerica : The Mayan or the Mesoamerican culture developed around 1250 B.C in the present day Mexico and North Central America. It emerged due to the movement of tribes in search of fertile land. Signs of early agriculture and civilization began around 7000 BCE and that of maize cultivation during 4000 BC. Tilling of soil was done manually due to lack of domestic animals in Mesoamerica. Signs of typical civilization merged around 1200 BC by Olmec rulers .

Andean : The Andean culture started to develop around 1500 BC and eventually prospered as the Incas. This diffused further into South America.

West Africa : The West African culture was established around 400BC. Beginning with nomadic pastoralism, domestication of cattle in eastern Sudan took place around 8500 BC. Later this culture was diffused into Sub- Saharan Africa. This culture was influenced by Nile River Valley culture.These regions are considered culture hearths because such key cultural practices as religion, the use of iron tools and weapons, highly organized social structures, and the development of agriculture started and spread from these areas. In terms of religion, for example, the area

around Mecca is considered the culture hearth for the Islamic religion and the area from which Muslims initially traveled to convert people to Islam. The spread of tools, social structures, and agriculture spread in a similar manner from each of the culture hearths.

Evolution of Cultural Hearths and ancient routes of migration



Source: Human Geography, Landscapes of Human Activity

The Before the Common Era (BCE) dates refers to the approximate times when the hearths developed their complex social, intellectual, and technological bases and served as cultural diffusion centers.

Physical barriers in the form of deserts, mountain ranges, and water bodies prevented ancient people's migrations. Migration of people was generally found to the areas that had more similar environment of their place of origin. Thus, from similar origins, but through separateadaptations and independent innovations, distinctive cultures emerged both in the old and new hearths. In some cases, cultural innovations are passed on along trade routes and through diffusion.

There are three types of cultural diffusion.

a) **Direct Diffusion:** The first is called direct diffusion and occurs when two distinct cultures are very close together. Over time, direct contact between the two leads to an intermingling of the cultures. Historically this occurred through trade, intermarriage, and sometimes warfare because members of the various cultures interacted with each other for long periods. An example today would be the similar interest in soccer in some areas of the United States and Mexico.

b) **Forced diffusion or expansion diffusion:** is the second method of cultural diffusion and takes place when one culture defeats another and forces its beliefs and customs onto the conquered people. An example of this would be when the Spanish took over lands in the Americas and later forced the original inhabitants to convert to Roman Catholicism in the 16th and 17th Centuries.The term "ethnocentrism" is often related to forced diffusion. Ethnocentrism refers to the idea of looking at the world only from one's own cultural vantage point. As a result, people participating in this form of diffusion often believe that their

cultural beliefs are superior to those of other groups and, in turn, force their ideas upon those they conquer.Cultural imperialism normally occurs within forced diffusion because it frequently happens through military or economic force.

c) **Indirect Diffusion**: The final form of cultural diffusion is indirect diffusion. This type of diffusion happens when cultural ideas are spread through a middleman or even another culture. An example here would be the popularity of Italian food throughout North America. Technology, mass media, and the internet are all playing a huge role in promoting this type of cultural diffusion around the world today.

Thus each of these cultural hearths has produced a special quality in terms of food habits, type of shelter, dressing style, language of communication, religious practices, representing a respect for ancestors, art of writing and a family bonding of living together etc. The origin and spread of these cultural hearths can easily be noted in the form of form of four component of their influence. These are:

- **The Core:** It is the heart or central part of control of the area expressed with its strong cultural traits in the form of religious structure, administrative centre, market area, community hall etc as major landmarks.
- **The Domain**: This is the area surrounding the Core with residences and functions having its own cultural values strongly influenced by the Core.
- **The Sphere**: is the area that surrounds the Domain: Where the density of population and cultural influence of core is in moderate form.
- **The Outlier area**: Is the one that surrounds the Sphere where largely new settlers or growing population exists with similar cultural traits to some extent of the core.

Thus by observing the lifestyle, race, religion, language, eating habits, dressing style one can easily identify to which of the original cultural the people belong to.

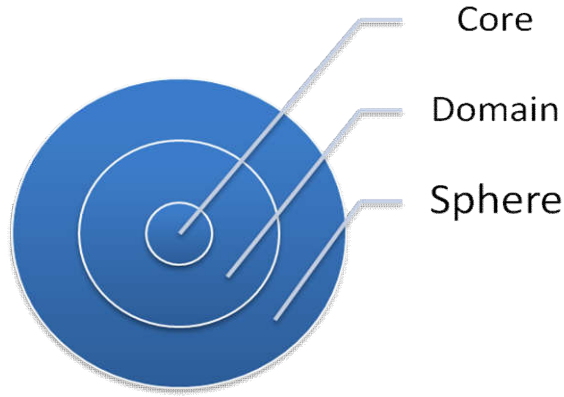


Figure 2.

3.3.3. Modern Culture Hearths and Cultural Diffusion

Modern culture hearths are identified as new dominant areas with their cultural dominance such as places of Los Angeles, California, and Vancouver, British Columbia in United States and that of European countries of France, London city of Britain and Germany, Tokyo of Japan, Moscow of Russia etc. Economic and military power Is largely responsible for this dominance facilitated by easy movement due to transport efficiency. Internet and mass media impacted great for widespread cultural diffusion of the west even in the remotest areas of mountainous regions. For example penetration of coca-cola and jean pants.Thus cultural diffusion is a continuous process throughout human history. It will continue to do so as new areas emerge in power and pass on their cultural traits to the world. The ease of travel and communication with modern technology and GIS has aided in speeding up the process of modern cultural diffusion to wider areas.

Figure 3.
Source: Christopher Corr/Ikon Images/

3.4 PEOPLE AS SOCIAL GROUPS- ETHNICITY, RACE, CASTE, RELIGION AND LANGUAGE IDENTITY ISSUE

3.4.1. People as social groups :

Man is a social animal and lives in groups from the advent of fire and agriculture by forming his society that is governed by a particular lifestyle suited to his natural environment referred to as his culture. Culture is a particular way of social life practiced by certain groups distinguished on the basis of race, ethnicity, moral values, language of communication, religious practices, type of clothing and dressing styles, dietary pattern and social customs. Though many distinct cultures are prevalent around the world today, those that are the most dominant have origins in one of a few

areas called "culture hearths." These are the heartlands of large river basins with fertile soils and abundant fresh water supplies. Cultivation of crops with security of food supplies promoted agriculture and settled life to develop civilizations reflecting their cultures. Historically the dominant cultural ideas have thus spread out through the cultural hearths of the Nile, the Indus, The Wei-Huang ,the Ganga river valley; the Mesopotamia, the West Africa and the Mesoamerica. All these early cultural hearths are known for their race, language, religion, ethnicity, knowledge of cultivation of crops, domestication of animals, bronze objects, transport means, travel and trade, highly organized social organization with regulations and monarchy for smooth functioning of functions and society. Each of the cultural hearths had its own culture of religion and faith. The spread of tools, social structures, agriculture and trading routes and type of goods and services got spread to other areas in a similar manner from the culture hearths.

3.4.2. Race:

Race is a classification system used to categorize humans into large and distinct populationgroups by heritable phenotypic characteristics, geographic ancestry, physical appearance, ethnicity, and social status. Human Race is classified with the help of various parameters: These are:

i) Genetic (inherited) and Biological character,
ii) Language (communication)
iii) Socio-cultural traditions and practices(rituals, religious beliefs and practices, dietary pattern and dressing style, house-type etc.)

The basic parameter for racial classification, however, remains genetic composition which manifests externally as one's anatomical appearance. The four basic races are 1. Caucasoid; 2.Mongoloid; 3.Negroid, and 4.Australoid.These four basic races further have various sub-races (as a result of biological interaction of people belonging to different races) as revealed from the present facts on the Earth. These are explained as under:

1. **Caucasoid:** Caucasians trace their ethnic origins to the Caucasus mountain mainly along the North and South of Caucasus region. The Caucasoid are further classified into various sub races:

i) Aryans (including some Indo-European populations) ii) Semitic (Arabs, Hebrew speaking people), iii) Hamitic (Berber-Cushitic-Egyptian native races), iv) Nordic, v) Mediterranean, vi) Dinaric, vii) Alpine, viii) Arabid, ix) East Baltic, x) Turanid, xi) Iranid and xii) Armenoid.

These sub races are primarily based upon geographic location and language. The Caucasian race and all its sub races are characterized by light skin color ranging from white to dark wheatish, straight to wavy hair with color ranging from flaxen to brownish to dark ebony, prominent eyes, pronounced and well-shaped nose and sharp features, medium built and average to stocky musculature.

Owing to the very cold conditions of the place of its origin, the Caucasian race has light and sparse skin pigmentation, as a result, they are not very well suited to living in very hot equatorial climates and are ill-suited to remain exposed to strong sunlight for long.

2. Negroid: The Negro race is subdivided into sub races such as:i) Aborigines, ii) Melanesians, iii) Negritos, iv) Papuans, v) Dravidians, etc.People belonging to the Negroid race are physically characterized by dark skin due to dense pigmentation, coarse black and wooly hair, wide noses and foreheads, broad, often thick lips, large built and broad skeletal structure. The Negro race people are known for their stamina and ability to survive in very adverse environmental conditions, especially extreme heat. The dense pigmentation of their skin equips them to face the intense heat and strong sun of the equatorial belt of the earth, which is where this race is believed to have originated. Even today, the maximum number of Negroid race people can be found in the equatorial regions such as Africa, Southern India, etc. Negroid sub-races also include:- i) The Nilotic peoples, ii) The Bantu race, iii) The Sudanic race, iv) The Pygmy peoples, v) The Khoisan peoples.

3. Mongoloid: This race covers vast and diverse geographical distribution. Mongoloid race include all those people who are classified with the sub races:i) East Asian, ii) North Asian and iii) Native American. Mongoloids are characterized by yellowish or light Whitish skin, extremely straight and black hair, very less hair growth upon their bodies, small, almond-shaped eyes, slight built and very lean musculature. The facial features are usually small but clear. The regions of the world that are regarded as the homelands of Mongoloid race people are the far Orients, Northeastern India, certain American countries where Native American people can still be found, etc.

The Mongoloid race can be classified into the following two broad sub-races:-

i) Neo-Mongoloids: which include ethic groups like Eskimos, Buryats, Chinese and Chukchis. These groups have physical features that are extremely Mongoloid in appearance and are typically found in Mongoloid populations that have adapted to living in extremely low temperatures and cold climatic conditions
ii) Paleo-Mongoloids: which include ethnic groups such as Polynesians, Filipinos, Burmese, certain Native American peoples, Jōmons, etc. The physical features of these ethnic and genetic groups are less Mongoloid in appearance and such features are usually found in Mongolian populations whose lifestyles are adapted for living in warm to temperate climatic conditions over several generations.

4. **Australoid**: According to the 'Out of Africa Theory', Proto-Australoid (believed to be ancestors of the Australoid races) are thought to have migrated from the African continent and moved along the Southeast Asian coast towards the Australian landmass. Other possibility is due to the drifting of the continents as per continental drift theory the land mass of

Australia got separated and drifted away from Africa to form proto-australoid races. The Aborigines, Melanesians, Papuans and Negritos come under the Australoid race. Most anthropologists debate the distinctiveness of this race as they believe that sub races like Aborigines, Negritos, etc. are, genetically and physiologically very close to the Negroid race. This belief conforms to the Out of Africa theory. This could be the reason behind the racial similarities between the Australian aborigines and the native inhabitants of the Andaman and Nicobar Islands in the Indian Ocean. Hence, many anthropologists and genetic biologists believe that these should be categorized as sub races of the Negroid race. Therefore, it is believed that the Australoid race is a classification of humanity which is based upon geographical location and regional culture rather than genetic and biological traits. However, it is really not possible to accurately determine all the infinitely distant sub-races of a particular major race. This is, especially, the case in modern times, when inter-racial interactions, and resultant diversity in the permutations and combinations of interbreeding, has made it really difficult to trace a mixed-race person's genetic heritage to any one of the four major races. The most prominent example of such a perpetual scientific debate is the theory of Aryan invasion of India, which claimed that the Dravidians were the original natives of the Indian landmass. The invading Aryans took over the Northern regions and pushed them towards the South, where they have settled since.

3.4.3. Ethnicity:

Relates to the culture and lifestyle of a particular group linked by birth which varies from one cultural region to other associated with its geographical environment. The word ‘ethnic’ comes from the Greek word ‘ethnos’ meaning people or nation. According to geographer Stuart Hall the idea of ethnicity as an identity is “historically constructed like all cultural identities” and is often natural as it implies ancient relations among a people in a certain place over time. Historical processes explain many deeply embedded notions of ethnic and racial superiority leading to ethnic conflicts and racism. Racism refers to the practice of enforcing difference and relies on the power relations between differentgroups understood as belonging to different races.

3.4.4. Related Issues:

The emergence of ethnic and racial issues is marked from mid-1960 onwards in the western society where the African-Americans were discriminated by the ‘Whites’. This discrimination drew attention of Geographers to address social issues such as systematic segregation of African-Americans, riots and the creation of Ghettos. The formation of ghettos was a combination of two factors – internal motivations and external constraints. The desire to be near one’s ethnic group was the internal motivation while economic and political discrimination against the minority population formal or informal prohibitions against employment and the purchase of housing were the external constraints An example of legally enforced segregation in South Africa was apartheid.

Ghettos have taken a variety of ethnic forms in the United States.Suburbanization and deindustrialization changed the nature of American ghettos decisively. During the 1920s, Jew immigrants from Eastern Europe and Germany established a large ghetto in southern Manhattan that centered on the garment industry. The arrival of Chinese immigrants generated the first Chinatowns in New York and many West Coast cities. Ghettos, e.g., Harlem, became the center of rich artistic and political movements. The growth of the Hispanic or Latino population has generated the formation of Spanish-speaking barrios in cities such as Los Angeles.Almost same social segregation was also noticed in Indian cities where certain areas were known by specific cultural group as noted by the names of the places. For example, khumbarwada, sutarali, maliali, loharali, sonarali, brahmanali, Marathas etc.

3.4.5. Language

Language is known to be a means of communication to express one's thoughts, physical or social or economic or other phenomenon with its counterpart. It also forms as a cultural expression that has evolved due to geographic isolation in the ancient era restricting physical mobility due to physical barriers. As a consequence many languages to each geographic region became prominent mode of communication in their society. We can therefore identify these groups of societies as language families. However within these language families we also notice subfamilies where different dialects are used in their language. Among all the language families, the Indo-European family is the widest. Indo-Europeans (i.e. the Aryans in 1500-2000 BC) whose homeland was traced near the Caucuses Mountains moved in two directions - one towards the east into northern India and the others in the Middle East. The sub-families of Indo-European language are as follows:

- Indic languages (Sanskrit-based)- Hindi, Bengali, Urdu, Gujarati, Bihari, Marathi, and Nepali.
- Iranic languages (Middle East) - Farsi (formerly Persian), Kurdish, Armenian, and Pashto (in Afghanistan).
- Modern Romance languages (corresponds to boundaries of countries) - Italian, Spanish, Portuguese, French, and Romanian
- Germanic languages (Europe) – English (west), German, Dutch, and the Scandinavian (northern Europe - Danish, Swedish, Norwegian and Icelandic.
- Celtic languages - Scottish, Irish, and Welsh
- Balto-Slavic branch (Eastern Europe and Russia)- Russian and Ukrainian in East Slavic; Czech, Slovak, Bulgarian, Polish in West and South Slavic.
- Afro-Asiatic: (Middle East & N. Africa): Semitic (Arabic and Hebrew)
- Ural-Altaic: (Eurasia): Finish and Estonian; Turkic (Turkish, Uzbeck, Azerbaijani. Kyrgyz, and Uighur in wester n China.
- Afro-Asiatic(Africa) In north Arabic and Berber, Somali; Bantu or Niger, Mande in west Africa, Kikuyun in Kenya; Tswana, Zulu in Southern Africa, Swahili in Eastern Africa.

- Sino-Tibetan: in East Asia Chinese, Mandarin in northern China, Cantonese in South-eastern China. In Southeast Asia- Malayo-Polynesian in Hawaiian and Maori in New Zealand, Malay of Malyasia and Indonesia. In India just 1 % population speak this language in three regions such as Tibeto-Himalayan (Ladakhi, Sherpa, Lepcha, etc.); North Assam (Abor, Miri, Aka, Mishmi, etc.); Assam-Burmese (Boda, Naga, etc.)
- Others - Albanian and Greek; in Southern India by Dravidians such as Tamil, Telugu, Kannada and Malayalam. In Indi-Chinese Peninsula two distinct language groups are found Austro-Asiatic (Vietnamese, Cambodian) and Thai-Kadai (Thai, Lao).

In Australia and Papua New Guinea of Indo-Pacific are the Aboriginal peoples who constitute 1% of the world's population, speak 20% of the world's languages under this enormously diverse group. In North America Iroquoian, Siouan, Salishan, Mayan while in South America-Andean, Chibchan, Macro-Carib.

Geographical diversity and physical barriers over space and time resulted in emergence of various languages. However routes of ancient migration followed by trade in the initial period and later with agricultural, industrial and technological revolutions resulted in continued flow of migration of people in groups that made language to diffuse of people who produced larger impact/control on the host region. For example, due to colonialism, the Americas are dominated by Indo-European languages; the island of New Guinea has the world's greatest concentration of linguistic diversity with around 900 languages among different tribal groups. With the expansion of French, Spanish, Portuguese, and British colonialism, Indo-European language speakers encircled the world, making it dominant even in Australia and New Zealand. Amongst all, English is the most widely spoken Indo-European language in the world.

Currently, there has been a steady decline in different languages for centuries. The process of language extinction accelerated during the era of colonialism (18th and 19th century) followed by the rise of the nation-state causing deliberate homogenization of social groups, cultures, and dialects, due to globalization in the 20th century. This decline represents a crisis in cultural diversity that deprives humanity of the rich ways of viewing the world inherent in the multiple different languages. Dozens of native tongues across the globe have been replaced by English and French. It is believed that nearly 500 languages are in danger of being lost forever. The countries in which more than one language is spoken are known as multilingual states.

3.4.6.Religion

Religion is often typified as the geography of difference as it appears as an aspect of nationality, ethnicity, or a political faction. Robert Stoddard defined religion as a "system of beliefs and practices that attempts to order life in terms of culturally perceived ultimate priorities." Religion exists in all known societies, although religious beliefs and practices vary from

culture to culture. Throughout much of human history, all religions were either animistic (inanimate objects possess spirits), polytheistic (religious believers worship more than one deity),or monotheistic (religious believers worship more than a single deity). By 500 BC, 4 major hearths of philosophy and religion developed across the world –

- Along the northern shores of the Mediterranean sea developed the hearth of Greek philosophy
- Along the Indus river emerged Hinduism from a hearth of South Asia
- Judaism emerged from a hearth on the Eastern Mediterranean
- Chinese philosophers emerged from a hearth on the Huang He river valley in China.

These early established religions and their philosophies later profoundly impacted other religions, as they diffused from their hearths, thus influencing newer religions. Christianity and Islam were both influenced by Judaism and Greek philosophy. The religions of the world may be grouped into 3 categories –

- Leading Religions – Hinduism, Christianity, Islam, Buddhism, etc.
- Lesser Religion – Includes Judaism in Palestine, Zoroastrianism of Persia, Taoism of China, Sikhism and Jainism in India, etc.
- Primitive Religion – There are thousands of primitive religions in the world and are found in small communities. They are mainly found among the aboriginal tribes of Australia, Indonesia, Africa, Southeast Asia, etc.

Almost every religious addition to the landscape like the church, temple, mosque, cemetery – the shrine is sacred. Most religions recognize a holy land like - Israel for Jews, all of India for some Hindu fundamentalists, western Arabia (including Mecca and Medina) for Muslims, and the larger Palestine area for Christians as the foundation and development of faith. Also, many religions ascribe a special status to certain features of the physical environment. Rivers and mountains including the Ganges for Hindus, the Jordan for Christians, and Mount Fuji in Shintoism, are often considered sacred places. Human environments may also achieve sacred status, including Mecca for Islam, Varanasi for Hinduism, and the Vatican for Catholicism. Some sites attract diverse visitors: the Golden Temple at Amritsar, India, is sacred to Sikhs but also attracts many others, as do Lourdes in France and Westminster Abbey in London.

The preceding account of the origins, spread, and growth of major religious groups has highlighted an important general fact about religious identity, religious territory, and conflict between religious groups. Religions have competed directly or indirectly with each other and at times with different versions of the same religion, as they have spread from source areas and become established in particular places. Indeed, such competition has sometimes resulted in conflict and tension.

However how many different societies, cultures, and ethnic groups make up the world's population is not certain. This is due, in part, to the fact that these social entities are not always distinct enough to clearly warrant their being considered as separate groups.

3.4.7. Cultural Change in Human History:

Contributing to the problem of counting the number of societies, cultures, and ethnic groups is due to overlapping nature of many of these groups as well as the fact that they are now changing rapidly as mass media and relatively cheaper and efficient long distance travel increasingly reduce the intensity of cultural differences.

Cultural differences continue to exist stronger only with the societies who still largely remained isolated from the modernized world or who take efforts to retain their cultural identity. This is easily noticeable thorough their communication where local dialect as language of is a culturally dominant feature. Thus people who are unable to readily communicate because of language differences are more likely to maintain cultural differences as well. Similarly it gets depicted through their cultural traditions, fairs and festivals.

According to estimates given by linguistics scholars we have nearly 5000-6000 languages in the world spoken by people. The most common "native" languages spoken by large number of people is obviously by the countries who have huge population or those who had colonial impact for centuries. These native languages spoken in large number are Mandarin Chinese, Hindi, English, Spanish, Bengali, Portuguese, Russian, Japanese, German and Korean. However English is largely the second most language known by people in the world.

With impact of globalization over a long period and English becoming more popular as a language of communication at workplace and society the process of cultural diffusion has accelerated. As a consequence many of the languages of smaller ethnic groups are on the verge of getting vanished such as ‘Sindhi’ and ‘Gujarati’ languages. It is heartening to know that nearly 50 per cent of the languages in the world are no longer spoken by children in their families. This is really a disheartening phenomenon as we will be losing a great ancient treasure of language type forever. It is mainly because these children feel awkward for their social and economic status in peer group. The culture homogenizing effect of mass media should not be underestimated either. Much of the television programming viewed around the world originated in Western Nations. These are the main facts of extinction of language and cultural practices.

However in recent times with more migrants from Asian countries to Europe and America has changed their life by becoming more diverse. It can be seen in terms of food preferences and religious practices, celebrations in urban areas.Countering these rapid globalization trends in the late 20th and early 21st centuries has been the dramatic resurgence

(revival) of tribalism. While many small indigenous societies are disappearing into national societies, many larger ethnic groups are violently reasserting their presence and even independence from the nations that they have been integral parts of until now. The breakup of Yugoslavia into ethnically "purified" areas in the 1990's is a prime example. Similar "tribal" re-emergences have occurred throughout Eastern Europe and the former Soviet Union. Tribalism also recently has spawned genocidal conflicts in Africa, especially in Sudan, Somalia, Rwanda, and Congo.

3.5 DIMENSION OF GENDER AND RELATED ASPECTS WITH RELEVANT EXAMPLES

3.5.1. Introduction:

Dimension of gender can be noted with two perspectives. First the biological difference with reference to 'sex differences' to distinguish between men, women and transgender. This biological character is permanent for all individuals everywhere in the world. Secondly in terms of social aspects it is viewed as 'gender differences'. Social aspects refer to the social relations throughout the history that has undergone change with reference to economic status of men and women. Thus Gender refers to the different roles, rights, and responsibilities of men and women and the relations between them. It also refers to the way their qualities, behaviours, and identities are determined through the process of socialization. Differences in gender relations often depend upon the society's perception whereby specific norms are laid for governing the functions and responsibilities of each sex. It is reflected in terms of gender differences in levels of education, health standards, economic power and opportunities, policy decisions and planning, freedom in various terms etc.

3.5.2. Gender related issues:

Historically, women have been excluded from political life and decision-making processes. Women's campaign for participation in the public and political arena date back to the nineteenth and twentieth century's and continue today. At the time of the First World War, few parliamentary democracies recognized women's right to vote. In 1945, when the United Nations was established, more than half of the 51 nations that ratified the Charter still did not allow women to vote or gave them only restricted voting rights. According to the Universal Declaration of Human Rights, everyone has the right to take part in the government of his or her country. One of the first tasks of the Commission on the Status of Women was to write the 1952 Convention on the Political Rights of Women. The Convention on the Elimination of All Forms of Discrimination against Women builds on previous conventions and its article 7 concerns women's access to decision-making in political and public life. The United Nations adopted the Universal Declaration of Human rights on 10 December 1948 which proclaims that all human beings are born free and have equal right to dignity .Similarly Indian Constitution guarantees several rights such as the right to equality in Article 14, right to life and personal liberty under

Article 21 of Constitution to all its citizens irrespective of gender. It is commonly observed that those countries with low levels of economic development often have gender disparity where the differences between men and women are high in every aspect. It may be in the upbringing of the newborn baby and child where boys are given due care and attention in terms of feeding and medical attention while girl child is most neglected on these fronts. Same is true in terms of providing higher education and training, social freedom etc. The entire burden of consistent poverty is on women and she has to struggle to support the family by all means. These inequalities and inadequacies with unequal access to education, health care and related services, and violence against women has urged various governments and development agencies to deal with top priority the issues related to gender-gap in these aspects. It has become increasingly accepted that women should play an important role in management that needs to be enhanced through the strategy of gender mainstreaming.

3.5.3. Gender on the International Agenda:

As a consequence of above mentioned reasons the main agenda in recent international meetings has been on provision of gender equity in terms of access and allocation of all types of resources as well as opportunities for social and economic advancement. This move is definitely a broader step towards achieving socio-economic growth with sustainable development. It therefore calls for specific mechanism and objectives with international cooperation for protecting women and providing them to live a dignified life. Action is this direction at international level can be noted as under:

Table 3.1 International Agenda on Gender

SN	Year	Conference & Place	Agenda
1	1992	UN Conference on Environment and Development (UNCED) in Rio de Janeiro (known as the "Earth Summit")	gender issues in Agenda 21
2	1993	The World Conference on Human Rights, in Vienna	made significant progress in recognizing the rights of women and girl-children as an inalienable, integral and indivisible part of universal human rights
3	1994	International Conference on Population and Development, in	is focused on gender issues, stressing the empowerment of women for equitable development. the objective is to promote gender

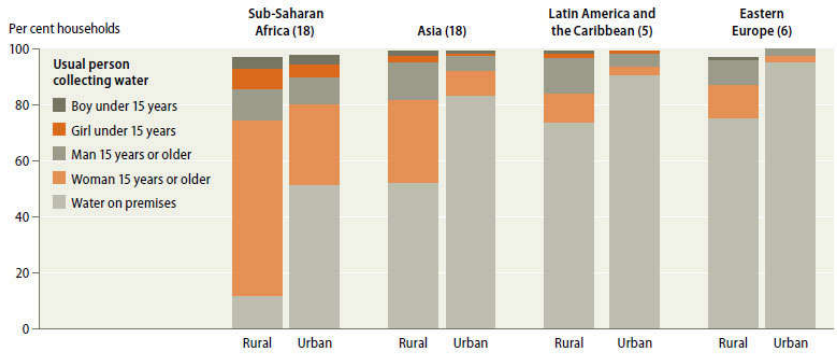
		Cairo	equality in all spheres of life, including family and community life, and to encourage and enable men to take responsibility for their sexual and reproductive behaviour and their social and family roles
4	1995	The World Summit for Social Development in Copenhagen	It took gender equity as the core strategy for social and economic development and environmental protection.
5	1995	Fourth World Conference on Women in Beijing	It reiterated the importance of drawing up an agenda to strengthen the status of women and adopting a declaration and platform for action aimed at overcoming the barriers to gender equity and guaranteeing women's active participation in all spheres of life.

Governments, the international community and civil society, including NGOs and the private sector, were called upon to take strategic action on the critical areas of concern towards women such as continual and increasing burden of poverty, inequality, inadequacies and unequal access to socio-economic and political resources, violence against women, occupational harassment on foreign lands, ownership of ancestral property rights, inclusive role in family planning and other policy decisions, self-respect, freedom in participation and communication, gender equity in management of natural resources and conservation of environment, and most importantly care, safety and rights towards girl child.

3.5.4. Relevant examples on gender disparity:

In the recent era of water scarcity, gender differences are well exemplified in terms of water resources management. Gender inequities in collecting water for the households by region in both rural and areas is depicted in figure 3

Distribution of households by person responsible for water collection, by region and urban/rural areas, 2005–2007 (*latest available*)



Source: (The) World's Women 2010. Trends and Statistics. UNDESA, 2010

https://www.un.org/waterforlifedecade/gender.shtml

Efficiency in integrated water resources management project is best achieved when both men and women are involved by sharing their responsibilities and providing them with socio-economic benefits. This will help in gender mainstreaming.

- **Fetching water is part of the gender inequality:**

In rural Benin, girls ages 6-14 spend an average of one hour a day collecting water compared with 25 minutes for their brothers.In Malawi, there are large variations in the amount of time allocated for water collection based on seasonal factors, but women consistently spend four to five times longer than men on this task.In Tanzania, a survey found school attendance to be 12 per cent higher for girls in homes located 15 minutes or less from a water source than in homes one hour or more away. Attendance rates for boys appeared to be far less affected by distance from water sources.In Africa, 90% of the work of gathering water and wood, for the household and for food preparation, is done by women.Thus provision of access to clean water close to the home can dramatically reduce women's workloads, and free up time for other economic activities. For their daughters, this time can be used to attend school.

- **Sanitation is one of the major challenges faced in overcoming gender inequalities:**

Inadequate access to safe, hygienic and private sanitation facilities is a source of shame, physical discomfort and insecurity for millions of women across the world. Cultural norms frequently make it unacceptable for women to be seen defecating—forcing many women to leave home before dawn or after nightfall to maintain privacy. So, women often tend to drink less water during the day time leading to health issues such as urinary tract infections. Similarly separate facilities in toilet for girls in schools are lacking resulting in absenteeism or dropouts of the girls attaining menstruating age.

3.5.5. Indian scenario:

In 2016, India ranked 130 out of 146 in the Gender Inequality Index released by the UNDP. Crimes against women have doubled in the period between 1991 and 2011. NFHS data reports that 40 per cent of married women have experienced physical, sexual or emotional violence by a spouse. In terms of political voting scene the number of female candidates fielded by parties has not increased. Every fifth suicide in India is that of a housewife (18 per cent overall). Largest rate of female deaths in the country is due to 'intentional violence'. Research work on childhood violence shows that girls are twice more likely to face sexual violence than boys before the age of 18. However, larger the population of educated females in the country, lesser is the incidence of childhood violence at home.

* **Constitutional Rights**: A number of rights to safeguard women in India are provided constitutionally under different articles such as state not discriminate against any citizen of India on the ground of sex, state is empowered to make any special provision for women with affirmative decision, state to secure equal pay for equal work for both Indian men and women, state to ensure that the health and strength of women workers are not abused and that they are not forced by economic necessity to enter avocations unsuited to their strength, necessary provision for securing just and humane conditions of work and maternity relief by state, It shall be the duty of every citizen of India to renounce practices derogatory to the dignity of women, One-third of the total number of seats to be filled and reserved for women in all government sectors.

* **Legal Rights**: Various legislation's contained several rights and safeguards for women in India such as Protection of Women from Domestic Violence Act, Immoral Traffic (Prevention) Act where trafficking for commercial sexual exploitation is prevented, Indecent Representation of Women (Prohibition) Act prohibits indecent representation of women through advertisements or in publications, writings, paintings, figures or in any other manner, Commission of Sati (Prevention) Act provides for the more effective prevention of the commission of sati and its glorification on women, Dowry Prohibition Act, prohibits the giving or taking of dowry at or before or any time after the marriage from women, Maternity Benefit Act regulates the employment of women in certain establishments for certain period before and after child-birth and provides for maternity benefit and certain other benefits, Medical Termination of Pregnancy Act provides for the termination of certain pregnancies by registered medical practitioners on humanitarian and medical grounds, Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act that prohibits sex selection before or after conception and prevents the misuse of pre-natal diagnostic techniques for sex determination leading to female feticides, Equal Remuneration Act that provides for payment of equal remuneration to both men and women workers for same work or work of a similar nature. It also prevents discrimination on the ground of sex, against women in recruitment and service conditions, Dissolution of Muslim

Marriages Act that grants a Muslim wife the right to seek the dissolution of her marriage, Muslim Women (Protection of Rights on Divorce) Act which protects the rights of Muslim women who have been divorced by or have obtained divorce from their husbands'Family Courts Act provides for the establishment of Family Courts for speedy settlement of family disputes', Indian Penal Code contains provisions to protect Indian women from dowry death, rape, kidnapping, cruelty and other offences, Code of Criminal Procedure has certain safeguards for women like obligation of a person to maintain his wife, arrest of woman by female police and so on, Indian Christian Marriage Act contain provisions relating to marriage and divorce among the Christian community, Legal Services Authorities Act provides for free legal services to Indian women, Hindu Marriage Act introduced monogamy and allowed divorce on certain specified grounds. It provided equal rights to Indian man and woman in respect of marriage and divorce, Hindu Succession Act recognizes the right of women to inherit parental property equally with men, Minimum Wages Act does not allow discrimination between male and female workers or different minimum wages for them, Mines Act and Factories Act that prohibits the employment of women between 7 P.M. to 6 A.M. in mines and factories and provides for their safety and welfare. National Commission for Women Act provided for the establishment of a National Commission for Women to study and monitor all matters relating to the constitutional and legal rights and safeguards of women. Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act provides protection to women from sexual harassment at all workplaces both in public and private sector, whether organised or unorganized.

3.5.6 Outcomes of Initiatives by Government of India to bridge the gender gap:

- **Political front:** Introduction of Electronic Voting Machines (EVMs) has provided vulnerable women section with more freedom of choice in their vote. Besides, poll related incidents of violence against women have significantly reduced since the phased introduction of EVMs across multi-level elections in India.
- **Economic front**: The JAM trinity – Jan DhanYojana, Aadhar, Mobile – can be used to improve financial inclusion from a gender perspective as well. The metrics to consider would be the number of Jan Dhan accounts held by women, percentage of women holding Aadhar cards and access to mobile connectivity for women.
- **Health front**: Introduction of the Janani Suraksha Yojana (JSY) and National Health Mission are vital to the policy landscape. The JSY has improved maternal healthcare in India through the emphasis on institutional deliveries with increase of 22 per cent in deliveries in government hospitals. The National Health Mission's ASHA led to greater awareness and education of pregnant women as well as an increase in institutional maternal and neonatal healthcare. Improved infrastructure for maternal and neo-natal has been observed in community hospitals, in addition to the introduction of ambulance services.

3.6 PEOPLE AND ECONOMY- POPULATION AS RESOURCE- ECONOMIC AND OCCUPATIONAL CHARACTERISTICS WITH SPATIAL PATTERNS- CHANGING STATUS OF LABOUR -RECENT TRENDS

3.6.1. People and Economy:

The complete transition from hunting and gathering economy was due to the advent of agriculture in the fertile soils of river valleys. The development of agriculture initiated the most important revolution in human history that transformed greatly social cultural life and the organization of economic and political conditions practising agriculture. Ancient agrarian societies were associated with the production and consumption of food that continued to be the focal point of exchange of economic goods and social life. Society transformed the relationships of people with their physical and social environments by bringing in a new civilization with its society, economy, culture, social structure, and political organization. As agriculture supported a subsistence living, people began to settle down permanently and form communities which gave rise to new social structures and forms of human societal organization. Thus, in agricultural dominant areas, permanent human settlements began to appear and grow in size and people began to build houses in the form of scattered hamlets. The ancient Egyptian civilization, Indian civilization, Chinese civilization, and Mayan civilization were all agrarian.In the second half of the 18th century, the production of manufactured goods emerged in England as the most important economic activity and announced the advent of a new age –the industrial age, and the dawn of rapid socio-economic, socio-political and socio-cultural change. Agricultural societies were soon transformed into urban industrial societies within the space of perhaps a hundred years. Rural village life got transformed to the factory system of the city. Workers got shifted from field to factory turning rural settlements to urban form. However this industrial development was highly uneven due to its concentration along the water ports favouring transport and trade for carrying raw-materials, finished goods and labor. Different waves in industrial revolution came up such as the first wave of the Industrial Revolution (the 1770s–1820s) was centered on the textile industry that started in Britain and later to the rest of Europe, North America, Japan, and the present developing countries. The second wave, from the 1820s to the 1880s, was a period dominated by heavy industries such as shipbuilding, railroads, and iron and steel plants. These types of firms differed from the textile industry as they were large-scale and capital-intensive industries. The third wave of industrialization, from the 1880s to the 1930s, saw the growth of numerous heavy industries including steel, glass, and automobiles. Third wave of industrial revolution was a period of massive technological change, including capital intensification and automation of work, consequently leading to economic changes as local markets gave way to national markets. The fourth wave of industrialization of 1930s, witnessed the primary growth of the petrochemicals and automobiles sectors. This era was associated with the Fordist systems of mass production that saw the domination of the world

system by the United States. The U.S. in the 1950s produced 2/3rd of the world's steel and 60% of its automobiles.

Within a century of its inception, industrialization transformed a series of rural, poverty-stricken societies into relatively prosperous, urbanized ones. It essentially created the first modern working class, where large number of workers labored together using machines for the first time in human history. Industrialization gave rise to organized labor markets in which workers were paid by the week, day or hour. Migration became a continuous phenomenon from the country side to towns and cities as employment opportunities were available with higher income and better working conditions than that as agricultural labor. Within 300 years of the industrial revolution, life and things started changing phenomenally in the industrial society. The fifth wave of industrialization introduced the electronics industry, accompanied by the microelectronics revolution and by the explosive growth of producer services that radically transformed the socio-economic life of people in the 20th century. Amazing developments in the research of science and technology by intellectual group of scientists, engineers and other scholars enhanced material growth in organized form and its worldwide dissemination through information and communication technology as created a knowledge bank. A large shift of workers from secondary to service industry evolved. Knowledge capital became the driver of the national economic policies to attain economic growth. A large number of population migrated to this capital world to work in the IT sector giving rise to formation of the multicultural communities. This is prominently seen in the developed countries of the north.

3.6.2. Population as Resource:

It is important to note that the nature provides us natural stuffs as raw materials. However it is human population with his skill, knowledge and strength has converted them to resources for his use. Thus the production various tools, implements, goods and services has undergone tremendous change in various periods of revolutions from the nomadic life of uncertainty with struggle and fear of survival to a civilized life of permanent settlements as countryside, towns and cities with increasing comforts and luxuries of life with stability. This dynamism in resource creation has been changing with time. In the early period of human evolution nature influenced human activities, but with time and man's ideas and skills has transformed natural surroundings to suit his requirements. It has slowly transformed and revolutionized the world economy from Hunting, gathering, agriculture, industry, trade, transport and communication to a global village with space technology in different stages of human civilization reflecting his social and cultural advancement. However this resource creation and utilization is highly unevenly distributed in the world as the cradles of inventions are relatively more developed while those countries that depend on borrowing technique and machinery are relatively less developed. For example many of the African countries are rich in natural stuffs but are still less developed economically. This is because their human population is not resourceful in

terms of technological skills and knowledge. Whereas Japan is a country with less natural Thus Labor entrepreneurial skills, capital funds, innovative technology, culture forms the human component and geographical component forms the natural stuff as nature gift (climate, landforms, natural vegetation and associated living kingdom, minerals and soils and water resources). Optimum and wise use of these both components over the period influences the levels of socio-economic development of any country. Since both these components are changing with time, the levels of development are also changing in the world economy.

3.6.3 Economic and occupational characteristics with spatial patterns:

Spatial pattern of economic activities is largely influenced by the geographical factors of a country or a region which influences the nature of production and occupational characteristics with reference to proportion of workers engaged in primary, secondary, tertiary and quarternaryis influenced by the level of social, scientific and technological advancement. Since both are interrelated with each other and are highly varying in their distribution, the degree of their influence determines the pattern and spatial distribution of economic and occupational characteristics. Earlier human settlements confined with fertile river valleys and agriculture as main economic activity became centres of trade and growing concentration of population forming other necessary services to be provided in the settlement. This led agricultural centres of river valleys to become towns and centers. However, with introduction of shipping transport offering relatively cheaper transport costs, new centres of trading ports emerged near coastal areas giving rise to a process of industrialisation and urbanization. This location of urban and industrial centres of production was highly localized at places having navigable rivers that were meeting the points of natural harbours. These are London, Cape town, Mumbai (Bombay), Kolkata(Calcutta), Chennai(Madras) etc. Thus these first centres of trade reap the benefits of development that continues.

Table 3.2: Growth of World Output and Gross Domestic Product

Annual percentage change	2017	2018	2019[a]	2020[b]	2021[b]
World	3.2	3.0	2.3	2.5	2.7
Developed Economies	2.4	2.2	1.7	1.5	1.7
Economies in Transition	2.2	2.7	1.9	2.3	2.5
Developing Economies	4.5	4.2	3.4	4.0	4.3
China	***6.8***	***6.6***	***6.1***	***6.0***	***5.9***
India	***7.2***	***6.8***	***5.7***	***6.6***	***6.3***
Brazil					
Least Developed Countries	4.5	4.6	4.9	5.1	5.4
World Trade (goods & Services)	5.7	3.9	0.3	2.3	3.2

Source: UN DESA. [a]:Partly estimated [b]:Forecast.

Pl.note: Developed economies are of USA, Japan, European Union and other developed countries; Economies in transition are the countries of south-eastern Europe, C.I.S (Commonwealth of Independent States) and Georgia; Developing economies are countries from South America, Africa and Asia (Brazil, China, India, Mexico, Caribbean etc)

The economic growth slowed down due to in the world during this period from 2017-18 in developing and transition economies largely due to financial fragilities and supply disruptions, internal disturbances in their countries and political instability, inflation, fiscal policies, export regulations and external challenging pressures.

3.6.4.Changing status of labour- Recent Trends:

Global economic slowdown has resulted in increased rate of unemployment. Further the proportion of young population in the working age-group is relatively more in the developing economies, economies in transition and least developed countries making the issue to unemployment more severe. Labor is largely employed in informal sector in these economies that are paid relatively low and so are poverty-stricken. Employment is largely found in the construction activity, marketing services and hospitality services that are of low quality, temporary and more often accepted involuntarily as a means of livelihood. In East Asia, vulnerable employment still accounts for around half of total employment in Cambodia, Indonesia, Myanmar and Thailand. Informal employment is also noticed in the agricultural sector which is low paid, highly insecure, lacks social protection in the economies of Latin America and the Caribbean, Eastern Europe, Asia, sub-Saharan Africa. Globally, around 700 million workers are estimated to live inextreme or moderate poverty. However, a significant share of the population remains outside of the labour force altogether and young people have seen their share continue to increase, with a sizeable proportion not in education, employment or training for example in South Asia, a third of the youth in Afghanistan, Bangladesh, Pakistan and Sri Lanka are not in education, employment or training and in India the rate is over 40 per cent.

With upcoming and expansion of the digital economy the nature of working conditions for the labor has changed. Many of these jobs are of self-employment posing further challenges in working conditions as the daily schedule depends upon the demand from the countries of the developed economies. In the recent past the structural changes in the economy of many countries are so advanced that the present available labor force is not suitable giving rise to unemployment or those in jobs and in higher age groups are opting for voluntary retirement from services (VRS). This is resulting a large number of ageing workforce to increase the unemployment scenario in developing economies. Besides, though productivity is rising the rise in wages are absent as well as there are hardly any promotions or upward mobility. As a consequence many of the youths keep changing their jobs and so are hardly able to settle in their

life. At times it causes stress, family pressures and frustration. This is more relevant in the corporate sectors and I.C.T. industries. However, this fourth industrial revolution in the form of digital economy is providing more challenging employment opportunities that need to be tapped by the youth of these countries. The recent changes in the labor market of the world are reshaped by the aspects of demographic changes, personal choice, continual technological advances and increasing job specialization as discussed here.

1. **Changing Demography:** Most of the developed countries are now having large proportion of their population in the aged group due to declining birth rate and large workforce entering into the category of senior citizens. This trend is noticed in USA, Canada, Western European Countries, Germany, France, Scandinavian countries, Russia, Australia etc. Therefore they are now offering scholarships for higher education to children from developing and least developed countries. Most of these children are provided with apprentice that fetches them pocket money for expenses and these countries are able to use their infrastructure that was otherwise going to be wasted or underutilized, besides getting these students to work as labor in their service sectors. Later most of these students continue to stay there even after completion of their education as they get employed with better packages compared to their native country. Thus the threat of scarcity of labor due to ageing population is wisely solved by developed countries simplifying the immigration policies which were very stringent till 1980's. It is also important to note that due to these labor shortages in their economy, the working age has been increased from 60 to 75 years providing their skills and expertise in various sectors of the economy. Besides these countries are searching talents by organizing various scientific, educational, cultural, and technological competitions in the economies of developing and less developed countries. They are training young generation by offering lucrative careers even to those located in the remote areas. Policies are also framed to absorb youth with physical disabilities by imparting training. Various measures are undertaken by these developed countries to overcome their labor shortage issue.

2. **Personal Choice of job has increased:** Flexibility in working conditions as well as in educational choices due to distance education present youth undertakes multitasking. As a result he has more skills and so more choices of job posting. This is facilitated by just a button click where millions of jobs are available. Besides, they keep changing their jobs to acquire more knowledge and so do the packages and incentives with higher mobility or postings in job. Many others prefer self-employment facilitated by fourth industrial revolution of digital economy due to internet services, geographical information system (GIS), geographical positioning system (GPS), computers, satellite Imagery. This is because of our space research stations and observatories that have launched various space satellites into our earth's orbit.

3. **Technological Revolution:** Advances in technology in all the sectors of the economy such as production, processing, manufacturing, transport and distribution, marketing, finance-insurance and banking, medical and medicines, infrastructure, construction and engineering, water and energy, artificial intelligence and defense sector has increased global competition making world a global village. Most of these jobs are highly computerized demanding skilled labor force.

4. **Job specialization:** With increased global production and competition for all industries the trend is optimize their profits by capturing the world markets. Therefore demand for actuarial science has increased that provides specialized analysts with their consultancy services. Same is also true in all other fields of the production economy where specialized services are required. Therefore now the trend in education has shifted from general studies to specialized studies offering job specific employment opportunities. It may be in the field of engineering, medical, pharmacy, agriculture, forestry, mining, fishing, manufacturing, automobile, aviation, marketing, legal etc.

3.7 SUMMARY

Study of population reveals the nature of changes that have developed over the period of time from primitive stage to the modern stage in different centuries. This has been observed through the evolution of different cultural hearths in different periods of the world. Over the period social groups developed with different characteristics that got identified and distinguished based on their ethnicity, race, caste, religion and language etc. Migration of people made it to diffuse and become diverse with changing time and technology. Dimension of gender is related with the physiological aspect as well as the role they play in the society and economy. Besides the differences within them and gender related issues is also exemplified. Manpower forms the significant factor of any economy as in transforming the nature to produce various goods and services. The change in the production system and occupational characteristics over the period of human evolution in the form of different revolutions and its resultant impact of changing status of labor and recent trends in the world is discussed here.

3.8 CHECK YOUR PROGRESS/ EXERCISE:

1. Answer the following Questions (Multiple Choice Questions)

i. The region which saw the rise of agricultural communities in the Middle East is known as the _____.
   a. Fertile Crescent
   b. Great Bowl
   c. Wheat Granary
   d. Rice Bowl

ii. The Egyptian civilization emerged on the banks of upper _____ river in Africa.
   a. Ganga
   b. Nile
   c. Amazon
   d. Thames

iii. The term _____ is often related to forced diffusion.
   a. Biocentrism
   b. Technocentrism
   c. Anthropocentrism
   d. ethnocentrism

iv. Aryan, Semitic, Nordic, Alpine etc. are subraces of the _____ race.
   a. Mongoloid
   b. Dravidian
   c. Caucasoid
   d. Negroid

v. The Janani Suraksha Yojana has improved the _____ healthcare in India
   a. maternal
   b. elderly people
   c. children
   d. teenagers

2. True or False

i. Historically direct diffusion of culture occurred through trade, intermarriage, and sometimes warfare.
ii. Sphere is the area that surrounds the core of the cultural hearth.
iii. Racial classification is mostly based on genetic composition.
iv. Dravidians belong to the Mongoloid race type.
v. Judaism emerged from a hearth on the Eastern Mediterranean.
vi. Primitive religions in the world are mainly found among the aboriginal tribes.

3. Fill in the blanks:

i. The Southeast Asian culture evolved independently in the southern end of _____ Peninsula
ii. In present times technology plays an important role in the _____ diffusion of cultural ideas.
iii. People belonging to the _____ race are physically characterized by dark skin.
iv. Hindi, Bengali, Urdu, Gujarati, Bihari, Marathi belong to the _____ language family.
v. _____ refers to the different roles, rights, and responsibilities of men and women and the relations between them.

Answers To Above Exercise

Multiple Choice Questions :
i. Fertile Crescent ii. Nile iii. Ethnocentrism iv. Caucasoid v. maternal
True or False:
i. True
ii. False
iii. True
iv. False
v. True
vi. True

Fill in the Blanks:
i. IndoChinese, ii. indirect, iii. Negroid, iv. Indic, v. Gender.

Answer The Following Questions

- Discuss the various cultural hearths of the world.
- Compare and Contrast the issues of gender disparity at world level and India.
- Write a note on changing patterns of economy and its impact on population.

3.9 TECHNICAL WORDS AND THEIR MEANING

- **Place:** Place has numerous definitions, from the simple "a space or location with meaning" to the more complex "an area having unique physical and human characteristics interconnected with other places."
- **Landscape:** Landscape meant an "area"or a "region" that was a product ofnatural attributes of climate, soiland plant and animal life and ofcultural attributes of population,housing, economics, and communication.
- **Hearth** - The area where an idea or cultural trait originates.
- **Society:** people in general thought of as living together in organized communities with shared laws, traditions, and values
- **Trade:** Transfer of goods and services from one area of selling to another of buying in exchange for agreed terms of trade.
- **Migration:** movement of people from one residential area to another either voluntarily or involuntarily.
- **Agricultural revolution -** The slow transition, beginning about 12,000 years ago, from foraging to food production through plant and animal domestication.
- **Fertile Crescent**- Crescent-shaped zone of productive lands extending from near the south-eastern Mediterranean coast through Lebanon and Syria to the alluvial lowlands of Mesopotamia (in Iraq). Once more fertile than today, this is one of the world's great source areas of agricultural and other innovations.

- **Core regions -**A central region in an economy, with good communications and high population density and prosperity.
- **Periphery regions** - The regions that are less developed. These countries usually depict a disproportionately small share of global wealth.
- **Fordist** - A highly organized and specialized system for organizing industrial production and labor. Named after automobile producer Henry Ford, Fordist production features assembly-line production of standardized components for mass consumption

3.10 TASK

- ❖ Locate the cultural hearths on the world map and show its diffusion.
- ❖ Prepare a infographics using world map to highlight the gender disparity.

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4

MIGRATION AND MOBILITY

Unit Structure :

4.1 OBJECTIVES

- To understand the meaning and types of migration
- To learn about population dynamics and development processes
- To study about migration with the help of a micro region approach

4.2 INTRODUCTION

Migration is the movement of people from one place to another. It is a phenomenon which is prevalent in the society from inception. During the earlier times before the industrialization and advancement in the technology, people used to travel from one place to another in search of better economic and social opportunities. The same was observed during the time of Stone Age also. Throughout history, migration was either for the purpose of livelihood or for better access to resources which were necessary for livelihood and lifestyle. Migration can be seasonal, temporary, or permanent. It can be for a range of reasons. These include

economic, social, political, or environmental.Migration can either be classified as internal migration or international migration.

According to the Demographic Dictionary of United Nations, "Migration is such an event in which people move from one geographical area to another geographical area. When people leaving their place of residence go to live permanently in another area then this is called migration."

The International Organization for Migration (IOM) defines migration as "a process of moving, either across an international border or within a State. It is a population movement, encompassing any kind of movement of people. Whatever is its length, composition, and causes, it includes migration of refugees, displaced person, uprooted people and economic migrants".

4.3 SUBJECT DISCUSSION

Migration is an important aspect in the modern times. It alters ecosystems, makes way for transportation, and leads to development and environmental degradation too. Hence, migration brings out mixed effects on the surroundings. This is why it is important to study migration and its related aspects.

4.4 FACTORS, PROCESSES AND TYPOLOGY, CONTEMPORARY TRENDS IN DEVELOPED AND DEVELOPING COUNTRIES, RURAL AND URBAN DIMENSIONS

4.4.1. Factors, Processes and Typology of Migration :

Migration is one of the most important aspects of demography. Migration is the movement of people from one place to another place. The movement often occurs over long distances and from one country to another.

4.4.1.1. Factors of Migration :

There are many economic, social, and physical reasons why people migrate from one place to another place. There are two main factors of migration a) Pull factors and b) Push factors.

- Pull factors

A pull factor is a motivating aspect that attracts a person to migrate to another region or country. The pull factors include:

- Employment opportunities
- Higher income
- Better working conditions and facilities
- Educational opportunities
- Higher living standards
- Better public services

- Religious freedom
- Freedom of expression
- Political freedom

Pull factors can generally be grouped into the following categories:

- Economic migration- economic migration is to find better employment, job opportunities and better standard of living
- Social migration- social migration is moving closer to the family or to live in an area with better public resources like education and healthcare
- Environment migration- movement to an environmentally safer area.

➢ Push factors

A push factor is a demotivating cause that forces a person to migrate to another region or country. The push factors include:

- Low income
- Shortage of land
- Lack of modern facilities
- Lack of education and training facilities
- Overpopulation
- Few jobs
- Low wages

People who lack economic opportunities are more likely to look for work outside of their home country. One example is the migration of Mexicans and people from other Central American countries to the United States, where they frequently work for low wages in long-hour jobs in farming, construction, and domestic labour.

4.4.1.2. Types of Migration :

➢ Seasonal Migration- Seasonal migration means the process of moving for a small period in response to changes in climate conditions
➢ Internal Migration- Internal migration takes place within the country. Hence, it can be inter-district and inter-state.
➢ International Migration- International Migration takes place outside the boundaries of a country
➢ Emigration- when people migrate from one country to another country it is called emigration
➢ Immigration- when people migrate from one country to another country permanently, it is called immigration and people are called immigrants.

4.4.1.3. Migration Laws and Principles :

➢ Ravenstein's Laws of Migration

In his theory,Ravenstein has explained 'Laws of Migration'that were developed during the second half of the nineteenth century. He said that migration takes place because of the changing pattern of population

growth. His research focused on three key aspects of the migration process as follows:

- The relative importance of rural-urban migration and inter-urban migration
- The relative mobility of males and females
- The impact of technological developments (especially in transport network) on the number of people able to migrate between places.

Ravenstein took into account the following two crucial factors:

- The relative size of the migration source and destination centres
- The travelling distance between both of these centres.

Ravenstein's Laws of migration are summarised below:

- Law 1- most migrants travel short distances. This is due to limited technology in transport and communication.
- Law 2- migration usually takes place in waves. This means that migration often takes place in stages, starting with a move from a rural area to small town, then larger town and finally to a city.
- Law 3- most migrants travel long distances only when they intend to go to a larger commercial or industrial centre.
- Law 4- town's people tend to be less migratory than those living in rural areas. This is because the greater opportunities in urban areas encourage their populations to remain there.
- Law 5- the major direction of migration is from agricultural areas to the centres of industry and commerce.

➢ Zelinsky's Transition Model

In his model, Zelinsky has explained the intensity of migration pattern based on the socio-economic development achieved by countries. Following are the characteristics of Zelinsky's model:

- Phase 1- there is little genuine residential migration, localised circulation takes place between neighbouring villages purely to meet local communities, agricultural trading and social needs.
- Phase 2- mass migration takes place, involving large numberof people who move from rural regions to expanding urban settlements within the same country. There is a significant growth in various kinds of internal population circulation.
- Phase 3- overall residential mobility tends to level off, but may continue at a higher level between particular regions, significant movements of migrants often occurs but between cities and within major urban areas, pioneer emigration may now be stagnant or even reversed in flow, there is significant net immigration of unskilled and semi-skilledworkers from less developed countries.
- Phase 4- there may be a decline in the level of residential migration as well as in some forms of circulation due to improved communication technology, almost all residential migration may be of the inter-urban

and intra-urban types, some further immigration of relatively unskilled labour from less developed areas.

4.4.2. Contemporary Trends in Developed and Developing Countries :

A population is defined as a group of individuals of the same species living in the same area and interbreeding. Members of a population frequently rely on the same resources, face similar environmental constraints, and rely on the availability of other members to survive.

It is assumed that societal development or growth can be traced by looking at its population growth and change, income per capita, growth of per capita gross domestic product and change in the metropolitan/urbanization rate.

4.4.2.1. Status of Population in Developed Countries :

A developed country is a sovereign state with a mature economy and technologically advanced infrastructure in comparison to other nations. Several factors influence whether or not a country is developed, including political stability, GDP, level of industrialization, social welfare programmes, infrastructure, and the freedoms enjoyed by its citizens. The main factor in developed countries is a high birth rate and a low death rate.

- **United States**

The current population of the United States of America is approximately 334,659,970 people. The population of the United States is equal to 4.25 percent of the total world population. The United States of America is ranked third in terms of population among countries (and dependencies). The population density in the United States is 36 people per square kilometre (94 people per mi2). The total land area is 9,147,420 square kilometres (3,531,837 sq. miles). 82.8 percent of the population lives in cities (273,975,139 people in 2020). In the United States, the median age is 38.3 years.

- **Canada**

Canada's current population is estimated to be 38,365,690 people. The population of Canada is equal to 0.48 percent of the total world population. Canada is ranked 39th in terms of population among countries (and dependencies). Canada has a population density of 4 people per square kilometre (11 people per mi2). The total land area is 9,093,510 square kilometres (3,511,022 sq. miles). 81.3 percent of the population lives in cities (30,670,064 people in 2020). In Canada, the median age is 41.1 years.

- **Australia**

Australia's current population is estimated to be 26,057,364. The population of Australia is 0.33 percent of the total world population. Australia is ranked 55th in terms of population among countries (and dependencies). Australia has a population density of 3 people per square

kilometre (9 people per mi2). The total land area is 7,682,300 square kilometres (2,966,151 sq. miles). 85.9 percent of the population lives in cities (21,903,705 people in 2020). In Australia, the median age is 37.9 years.

4.4.2.2. Status of Population in Developing Countries :

The population of the developing countries has experienced an exceptional growth over the last four to five decades. This high demographic growth is one of the main factors in the multiple transformations. In comparison to other countries, a developing country is a sovereign state with a less developed industrial base and a lower Human Development Index (HDI). This definition, however, is not universally accepted. There is also no consensus on which countries fall into this category. The terms low and middle-income country (LMIC) are frequently used interchangeably, but only refer to the economies of the countries. Countries at the other end of the spectrum are commonly referred to as high-income or developed countries.

- **India**

India's current population is estimated to be 1,405,569,356 people. India's population is 17.7 percent of the total world population. India is ranked second in terms of population among countries (and dependencies). India has a population density of 464 people per square kilometre (1,202 people per mi2). The total land area is 2,973,190 square kilometres (1,147,955 sq. miles). 35.0 percent of the population lives in cities (483,098,640 people in 2020). In India, the median age is 28.4 years.

- **China**

China's current population is estimated to be 1,449,796,348 people. The population of China is equal to 18.47 percent of the total world population. China is the most populous country (and dependency) on the planet. China has a population density of 153 people per square kilometre (397 people per mi2). The total land area is 9,388,211 square kilometres (3,624,807 sq. miles). 60.8 percent of the population lives in cities (875,075,919 people in 2020). China's median age is 38.4 years.

- **Brazil**

Brazil's current population is estimated to be 215,406,479 people. Brazil's population is 2.73 percent of the total world population. Brazil is ranked sixth in terms of population among countries (and dependencies). Brazil has a population density of 25 people per square kilometre (66 people per mi2). The total land area is 8,358,140 square kilometres (3,227,095 sq. miles). The urban population accounts for 87.6 percent of the total (186,217,070 people in 2020). Brazil's median age is 33.5 years.

4.4.3. Rural and Urban Dimensions :

Internal migration is defined as a shift in residence within national borders, such as between states, provinces, cities, or municipalities.

Internal migrants are people who relocate to a different administrative territory.

Internal migration is classified into four categories based on the direction of movement within and between rural and urban areas, which are as follows:

- Rural to Rural migration: It is the movement from one rural area to other rural area.
- Rural to Urban migration: It is the movement from a rural area to an urban area.
- Urban to Rural migration: It is the movement from an urban area to a rural area.
- Urban to Urban migration: It is the movement from one urban area to other urban area.

The most significant of these streams is rural-to-urban migration. Migration from rural to urban areas is a response to varying economic opportunities across space. Income disparities between the two areas are one of the main reasons for this type of migration, as agriculture alone cannot sustain rural livelihoods in developing economies like India.

The concentration of population in large towns and cities is also related to urban-to-urban migration. This could be due to a gradual migration from rural areas to small towns, and then from small towns to large cities. However, in many developing countries, such as India, rural to rural migration is significant, particularly among women who move for marriage or familial reasons.

Migration of people has consequences on both rural and urban areas. Due to the movement of people from the rural areas to urban areas the population in the rural area decreases and it increases in the urban areas. This adds pressure to the limited land availability and resources.

The consequences for urban areas are as follows:

1. Source of Labour – When people from rural areas migrate to urban area, they provide labour force to the urban area. The construction industry is where the demands of the skilled and unskilled labour is more.

2. Rise in Slums and Squatter Settlements – The migrants from the rural areas are usually low-income group people who migrate for the purpose of better employment opportunities. As they move to the urban areas which are highly developed, they cannot afford to live in buildings and apartments due to the high prices of lands. Therefore, they prefer to live in chawls and slums which they can afford to live in. This causes increase in the slums and squatter settlements in the urban areas. This further affects the sanitation of the area.

3. Stress on Urban Infrastructure – Urban infrastructure such as railways, roadways, sewerage comes under immense stress due to the rising population. In many places the infrastructure has reached to its

maximum limits and beyond therefore no further extension can take place. This has led to overcrowded buses, trains, water shortages, lack of sewerage, pollution, environmental stress, etc.

Consequences for rural areas are as follows:

The migration from rural to urban areas are beneficial for people who stay behind at the rural areas.

i) **Boost to Rural Economy –** The people who move from rural areas to urban areas for employment opportunities send remittances to their family. This results in the increase of purchasing power and more capital for the investment in agriculture. These remittances support the family in the rural areas. This helps in the development of the rural areas.

ii) **Strengthening of Rural-Urban Linkages –** The rural and urban areas are linked to one another in many terms. They are often viewed through the prism of rural-urban divide. This emphasizes that there is a social difference between the two sectors. However, their linkage dimensions can be seen in a number of aspects such as movement of people, trade of goods and services, flow of money, their interdependence on agriculture and industry etc.

iii) **Technological advancement** in communication and transportation have facilitated rural and urban migration on a large scale in the recent years. In India, about 2 million people migrate temporarily every year out of which 60% of the migration is from rural to rural migration. The migration from rural to urban area is also increasing at a very large scale.

4.5 POPULATION, SOCIAL ORGANIZATION AND GOVERNANCE, PEOPLE AS COMMUNITIES AND CITIZENS, PEOPLE'S RIGHTS AND PROTECTION IN CONTEMPORARY SOCIETIES

4.5.1. Social Organization of Population

Social organization is a pattern of relationships between and among individuals and social group.

According to Lapiere, "social organization consists of all the ways by which men live and work together, more especially of all the programmed, ordered and coordinated relations of the members of the society." Social organisations at different levels organize and give expression to collective behaviour. They coordinate and crystallize numerous interests of individuals and groups.

4.5.1.1. Types of Social Organization

Social organisations or institutions emerge from members' social needs and situations. These organisations are the means by which people adapt their behaviour to changing environmental conditions.

Social organisations are classified into two types: those formed through kinship and those formed through the free and voluntary association of members. A brief examination of a few such organisations is provided below:

- **Clan**

Clan members are thought to be the descendants of common ancestors. They typically have a common surname. They are typically found among primitive people, and members act under the supervision of a chieftain. They are linked by common social, religious, and cultural rituals. Members practise exogamy, which means they do not marry someone from the same clan. All members worship a totem or a symbolic object such as a cow, bull, or bird.

- **Tribe:**

A tribe is a larger social organisation than a clan and has been defined as "a simple social group whose members speak a common dialect, have a common government, and act together for such common purpose as welfare." A tribe is typically formed when a stronger clan subjugates a weaker one. The tribal government is led by a tribal chief. It is a military organisation with a common dialect and language. A tribe maintains solidarity among its members despite the absence of blood relationships.

- **Community:**

Individuals can be organised along secular lines by forming communities and associations. The definition of a community is "the total organisation of social life within a limited area." A community is a self-sufficient group based on shared interests. A community's boundaries can range from very narrow to very broad (even global).

- **Association:**

According to MacIver, an association is "a group organised for the pursuit of a common interest or group of interests." Kinship, religious, cultural, recreational, philanthropic, vocational, and political organisations are all examples of associations. Society is primarily comprised of political organisations such as the state and its coercive agency, the government.

- Social group

Man is a social being. He doesn't live in seclusion. His daily routine consists primarily of group activities. As a result, men everywhere live in groups such as family, clan, tribe, community, and so on. Aside from that, people form groups consciously to meet a variety of needs. As a result, they live in groups, both natural and artificial. In short, a social group is an aggregation of individuals in which:

a) Definite relations exist between the individuals who make up the group; and

b) Each individual is aware of the group and its symbols. Family, village, school, nation, political party or trade union, and so on are examples of groups.

4.5.1.2. Social Organization in India :

India is a highly structured society. Whether in north or south India, Hindu or Muslim, urban or rural, almost everything, people, and social groups are ranked based on various essential qualities. Despite the fact that India is a political democracy, notions of complete equality are rarely seen in daily life.

In almost every aspect of social life, India provides astounding variety. Diverse ethnic, linguistic, regional, economic, religious, class, and caste groups crisscross Indian society, which is also characterized by significant urban-rural divides and gender disparities.

The characteristics of Indian society are as follows:

- Nuclear and Joint family co-exist
- Castes are ranked
- Village structure is dominant
- Urban areas are very large to very small
- There exists a large number of tribal communities

4.5.2. Human Rights and Protection :

Human rights are the fundamental rights and liberties that every person in the world has from birth to death. They are applicable regardless of where you are from, what you believe, or how you live your life. They can never be taken away, but they can be limited in certain circumstances, such as when a person violates the law or in the interests of national security. These fundamental rights are founded on common values such as dignity, fairness, equality, respect, and independence. These values are legally defined and protected. The following are the ten basic human rights that every individual has:

i) **The right to life:** Every individual has the right to live, which means it is the government's responsibility to protect human rights and safeguard human life.
ii) **The right to freedom from torture:** This right means no one should be subject to torture or should be treated with cruelty, inhuman, or degrading treatment or punishment
iii) **The right to equal treatment:** Irrespective of one's colour, caste, religion, and gender, every human being must be treated equally and this right reminds them of it.
iv) **The right to privacy:** This right protects citizens from government or corporate overreach and surveillance.

v) **The right to asylum:** The right to asylum is an old right that dated back to ancient times when churches were allowed to protect anyone including criminals who sought refuge in a church.
vi) **The right to marry:** Every individual of legal age has the right to choose their life partners and marry them to start a family.
vii) **The right to freedom of thought, opinion and expression:** Every person has the right to hold opinions, follow a religion they want and change their beliefs.
viii) **The right to work:** This right encloses a variety of work-related concerns, which means everyone has the right to work but also has the right to work in favourable conditions.
ix) **The right to education**: The right to education gives one the right to get educated. The UDHR states that education must be free till elementary school. Every individual has the equal right to get themselves educated.
x) **The right to social services:** The right to social services makes sure that every human being has a certain standard of living. This includes clothing, housing, food, water, medical care, and security.

These rights ensure that everyone is able to live their lives and express their thoughts and ideas without any external constraints irrespective of their social or financial standing.

4.5.3. Protection of People's Rights in Contemporary Society :

To protect human rights is to ensure that people are treated in a decent and humane manner. Because political systems that protect human rights are thought to reduce the threat of global conflict, all nations have a stake in promoting global human rights respect. All international human rights law and refugee law protect the right to life and physical integrity while attempting to limit the state's unrestrained power. These laws seek to protect humanity by safeguarding people's health, economic well-being, social stability, and political peace. The responsibility for protecting human rights rests first and foremost with the states. In many cases, however, public authorities and government officials implement policies that violate fundamental human rights.Such abuses of power by political leaders and state officials have disastrous consequences, including crimes against humanity. Human rights are important because no one should be abused or discriminated against, and everyone should be given the opportunity to develop their talents.

4.6 POPULATION DYNAMICS AND DEVELOPMENT PROCESSES, POPULATION AS SOCIAL CAPITAL STATUS OF DEVELOPED AND DEVELOPING COUNTRIES

A population is a group of people of the same species who live in the same geographical area and can usually breed together. In other words, population refers to the number of people who live in a given region, city, or country. The total number of individuals in a habitat is represented by population size. Its characteristics help to understand it. Population

density, nationality, mortality, population growth, age distribution, and population fluctuations are the six major characteristics of a population.

4.6.1. Population Dynamics :

It is the study of the changing patterns of population size, age, and gender composition. Population dynamics studies how the population of a country, region, or even the entire world changes. It takes into account both the factors that increase and decrease population to calculate the total growth rate. The total growth rate is influenced by three major factors: fertility, migration, and mortality. At the global level, all population changes can be explained by focusing on two factors: fertility and mortality.

- **Fertility**

Fertility in demography refers to the actual production of offspring, as opposed to the physical ability to produce, which is referred to as fecundity. Demographers must know how frequently people are added to the population by being born in order to estimate how quickly a population is growing, so they measure fertility. Physical health and nutrition, sexual behaviour, culture, instant, endocrinology, timing, economics, way of life, and emotions all play a role in human fertility.

There are several approaches to measuring fertility rate such as:

- Period Measures (Temporal)

a. Crude Birth Rate (CBR) is the number of live births in a given year per 1,000 people alive at the middle of the year.
b. General Fertility Rate (GFR) is the number of births in a year divided by the number of women of childbearing age (usually 15 to 49 years old, or sometimes 15 to 44 years old). Its focus is on potential mothers only, and takes the age distribution into account.
c. Child-Women Ratio (CWR) is the ratio of the number of children under 5 to the number of women 15-49, times 1000.

- Cohort Measures (Group/ unit abased):
  a. Age-specific fertility rate (ASFR) is the number of births in a year to women in a 5-year age group, divided by the number of all women in that age group, time 1000. The usual age group are 10-14, 15-19, 20-24, etc.
  b. Total Fertility Rate (TFR) is the total number of children a women would bear during her lifetime.

- **Mortality**

The mortality rate is a measure of the number of deaths (generally or due to a specific cause) in a given population, scaled to the population's size, per unit of time. The mortality rate is typically expressed in terms of deaths per 1000 people per year. Thus, a mortality rate of 9.5 (out of 1000) in a population of 1000 would imply 9.5 deaths per year, or 0.95 percent of the total. These figures are also known as crude death rates.

Some of the more common demographic measures of mortality include:

a. Crude Death Rate (the annual number of deaths per 1000 people),
b. Infant Mortality rate or the annual number of deaths of children less than 1-year-old per thousand births, and
c. Life Expectancy, which measures number of years that an individual at a given age is expected to live, given present mortality rates.

Overall, developing countries have higher infant mortality rates, lower life expectancies, and higher mortality rates. Death causes differ from one country to the next. For example, mortality due to malnutrition is much higher in developing and underdeveloped countries, whereas people in developed countries are more likely to die of age-related diseases.

4.6.2. Population as Social Capital :

Population as a whole may not always be called social capital. At the macro national level, the determinant variables we need to take into account include – size of the country, diversity of its populace, demographic attributes, and cohesion of the regional groups into a single unit.

With the increase in size and diversity of the population, the exercise of nurturing a constructive social capital becomes more difficult. The centrifugal forces and parochial interests of various communities are big hurdles in achieving this.

Gaps in demographic attributes like literacy rate, occupational structure, dependency ratio, gender bias, etc. inhibit the various small social capitals from moving in the same direction and towards same goals.

Although even the most primitive sections of the population are social capital within themselves, with their own indigenous culture, traditional knowledge system, culture and practices, which has worked well for them for time immemorial, what is needed is ensuring them coexistence with the modern wave of development, without compromising on their value system.

Through a macro-integration of micro-level social capital, the entire population can be converted into a social capital that strives for a unidirectional towards sustainable development and well-being of each of its components.

- Advantages of population as social capital
- Social capital and health: Studies have shown that higher levels of social capital and social cohesion lead to better health outcomes. According to recent research, the lower citizens' trust, the higher the average mortality rate. Trust, in conjunction with a formal and informal social network, enables people to gain access to health education and information, design better health care diversity, work collaboratively to build and improve infrastructure, advance

prevention efforts, and address cultural norms that may be harmful to health.

- The relationship between poverty and violence is mediated positively or negatively through social institutions ranging from the family to informal local associations such as shared values and norms, which can reduce or keep the level of community violence low. People who have informal relationships with their neighbours can watch out for one another and 'police' their communities. Furthermore, their family members are stressed by factors such as poverty and unemployment.
- Social capital and education: A population's educational attainment is related to its level of economic development. Finances alone will not help to increase a population's educational levels; family, community, and state involvement will help to increase the relevance and quality of education.
- Social capital and the environment: Social capital matters because it influences rural people's ability to organise for development. Social capital enables groups to band together to address common concerns with the government and private sector.
- Social capital and water use and sanitation: Social capital promotes the exchange of sanitation information as well as the development of community infrastructure. By securing financial resources and ensuring that projects respond to community needs, collaboration between the state and civil society can improve infrastructure design and maintenance.
- Social capital and economic development: At the macro level, there is growing evidence that trust, civic norms, and other social capital factors are necessary for economic development. Social capital has implication for the effect of trade and migration, economic reform, regional integration, new technologies which affect how people interact, security and more.
- Social capital and trust can improve the efficiency of economic transactions by providing parties with more information, allowing them to coordinate activities for mutual benefit, and reducing opportunistic behaviour through repeated transactions. Social capital influences the outcomes of economic action at both the micro and macro levels.

4.7 STUDY OF ANY OF THE COMMUNITY SPACE IN MUMBAI SOCIO-CULTURAL, ECONOMIC AND POLITICAL CONTEXT

4.7.1. Socio Economic and Political Organisation of Worli-Koliwada

- Socio-Economic And Political Organisation of Worli Koliwada

Worli is small fishing town located in the Worli region of Mumbai city in the state of Maharashtra. It is a densely populated settlement and has around 40,000 residents. It is known for its fishing community i.e., the Koli Community. They are the main residents of this place. Worli

Koliwada has chawls, several small fish markets and fish restaurants.Worli experiences coastal climate throughout the year.

Worli Koliwada is one of the seven original islands of Mumbai. It is an urban village which has a rich cultural, social and historical importance. It is home to the Koli community who are the indigenous habitants of Mumbai along with the East Indians. They are tribal fisherman with authentic and old fishing techniques which is passes on from one generation to the other.

Koli people are residing here for around 800 years now. Majority of the population is Hindu and Koliwada also has good population of Christian community. They are Koli Catholics who are also engaged in fishing.

Koliwada is also home to Bhandari and Agri community, who have more or less similar culture as Kolis. All the residents of Koliwada speak Marathi irrespective of the religion. Pagdi system is prevalent inKoliwada. Most of the residents live here for hundreds of years but still live on rent in Pagdi system, paying minimal rents. There are around only 157 landlords in Koliwada while rest of the population lives on rent.

All the festivals celebrated in Koliwada are celebrated together by the residents of the place. Both Hindu and Christian Kolis celebrate Holi and Mahashivratri at a grand level in Koliwada. Holi is celebrated for three days in the Wada. Huge, beautiful rangolis are made by the residents. Traditional Marathi attire is worn on the festivals and people gather on the streets to celebrate the festivals together with great joy and faith. Kolis live in a friendly manner with each other. People from different places come to Worli Koliwada to witness the grandness of the festivals.

Worli Koliwada also has Worli Fort which was built by the Britishers in the year 1675 and now it is a heritage monument. The Koliwada has number of temples, churches, grottos, jetties, Worlikar houses and fish markets.

Worli Koliwada has Cheda Dev Temple which is of great religious significance to the residents of Koliwada. They call it Gram Dev Mandir. The Koliwada residents have deep faith in Cheda Dev. The Cheda Dev temple is located at the entrance of the Koliwada, the inhabitants believe that no evil spirit can enter the Koliwada because of the presence of the Cheda Dev at the entrance of the Koliwada. He protects them from all the evil spirits.

TheGolfa devi Temple is in the upper part of the Koliwada. It is believed that the Goddess looks after the needs of the people in the area. The residents of the Koliwada have deep faith in her.

Apart from these two main temples, there are other important temples such as Hanuman Temple, Shiv Temple, Sai Baba Temple and Vettal Dev temple. All these temples are located on each side of the Koliwada and they guard the Koliwada from all the sides. Locals believe that because of their blessings and power, nothing wrong happens in the Koliwada. Even

in case of cyclones, high tides or nay other coastal mishap, sea water does not enter the Koliwada. They are always safe and protected. They believe that these deities protected and saved them during the period of pandemic and lockdown too. Hence, the all the residents of Koliwada are extremely religious and owe a lot to these deities.

The economy of Worli Koliwada is mainly dependent on fishing as the area is mainly inhabited by the original fishing community, Kolis. However, with changing times, more and more migrants are settling in this rea leading to changes in the occupational pattern of the Koliwada.

Fishing is restricted to men. Traditionally, men used tofish, and women used to sell those fishes in the market. This pattern is still followed today. However, with changing times, many Koli people have shifted toother occupations as per their interests, education, needs and desires. Despite of being the main traditional economic activity, only a few practices fishing today. Majority fishermen of the Koliwada do not travel much to fish, they mostly fish in the nearby areas. Only a few fishermen having their own mechanised boats travel to far off places to catch a greater number of fishes.

From majority of families, only a few people and even a single person is engaged in fishing. Majority of fishermen have good experience in this field of more than 40 years. A good number of people have their own boats for fishing. However, the number of people with mechanised boats is quite less as compared to the number of people owning traditional boats. Global Positioning System (GPS) and lifeboats are available in good number of boats.

Less than half of the population of the Worli Koliwada is engaged in any other occupation other than fishing. The non-fishermen of the Worli Koliwada are mostly engaged as construction workers and mechanics.

More than half of the fishing community is ready to adopt new ideas and technological changes in fishing. Fishing does not cause any lifestyle disease. However, sometimes fishing operations may hurt fishermen, because minor cuts on hands while pulling nets, headache, body ache and other minor health issues may be caused sometimes but fishing does not lead to any lifestyle disease.

However, fishing is dependent on natural conditions which is why it involves a lot of risk and fishermen need to be alert all the time. Bad weather, storms, heavy rain showers, violent winds etc. cause immense trouble to fishermen and restrict them from fishing on days having such phenomenon. The economic position of fishermen is pretty good in the Worli Koliwada but their income isn't fixed. It mainly depends on fish catch and market prices. Changes in prices of fish lead to changes in income of the fishermen. Thus, their monthly income varies from month to month.

The annual income of the fishing community over the period of five years has reduced. The prime reasons are the lockdown imposed by the

Government and the construction of coastal projects in Mumbai city. The rate of immigration to the Worli Koliwada has increased over a few years. Day by day, new people are coming and settling in Koliwada. Due to this trend, the number of indigenous Koli people has become lesser than the total number of migrants in the Worli Koliwada.

Primary reason for migrating to the Worli Koliwada by majority of the people is the cheap housing facility available in the area.They only must pay the minimal rents under Pagdi system. This causes trouble to the original residents of the Worli Koliwada. Majority of the native people face issues with the settling of newer people in their locality.

The main problem cause due to the settling of migrants is the problem of over congestion. Most of the residents of the Worli Koliwada believe that the original Koli culture isn't affected by migrants in any manner. Moreover, the Koli culture is adopted by the migrants. They learn Marathi language, prepare fish dishes according to the Koli recipe and celebrate the festivals together in same manners as Kolis do.

Overall, it can be said that the indigenous community of the city of Mumbai is now located only in a few pockets. These pockets are now in danger due to the increased coastal activities and immigrants from other communities. It is therefore necessary to take care of the community with some policy measures.

4.8 SUMMARY

Migration is a global phenomenon. It has been in existence since ages and will remain till infinity. The major cause behind migration is the spatial variation in the levels of development on earth. Hence, people have migrated in the past, they migrate at present and will continue to migrate in future too. The types of migration depend upon the place of origin and the place of destination. The purposes are also varied. However, it is important to learn that population is the basis of all activities on the globe. Hence a little change in the demographics led by migration can alter the entire ecosystem of mankind and we have to then act accordingly.

4.9 CHECK YOUR PROGRESS/ EXERCISE

I. True or False

a. Migration can be seasonal, temporary, or permanent.
b. Migration is one of the most important aspects of demography.
c. A pull factor is a motivating aspect that attracts a person to migrate to another region or country.
d. When people migrate from one country to another country it is called emigration.
e. Most migrants travel long distances only when they intend to go to a larger commercial or industrial centre.

II. Fill in the blanks

a. In his model, _____ has explained the intensity of migration pattern based on the socio-economic development achieved by countries.

(Ravenstein, Zelinsky, Christaller, Eratosthenes)

b. A _____ is defined as a group of individuals of the same species living and interbreeding within a given area.

(migrant, population, country, clan)

c. _____ population is equivalent to 0.48% of the total world population.

(USA, Australia, India, Canada)

d. The term low and middle-income country (LMIC) is often used interchangeably but refers only to the _____ of the countries.

(development, politics, economy, geography)

e. Urban to _____ migration is also related to the concentration of population in large towns and cities.

(urban, rural, country, state)

III. Multiple Choice Questions.

a. It is the movement from one rural area to other rural area.
1. Rural to Rural migration
2. Rural to Urban migration
3. Urban to Rural migration
4. Urban to Urban migration

b. It is the movement from an urban area to a rural area. Convenience sampling
1. Rural to Rural migration
2. Rural to Urban migration
3. Urban to Rural migration
4. Urban to Urban migration

c. In this industry the demand of the skilled and unskilled labour is more.
1. Education
2. Construction
3. Entertainment
4. Manufacturing

d. This is defined as "the total organisation of social life within a limited area
1. Community
2. Clan
3. Tribe
4. Association

e. _____ rights are the basic rights and freedoms that belong to every person in the world, from birth until death.
   1. Human
   2. Fundamental
   3. Social
   4. Marriage

Answers To The Self-Learning Questions :

Ia. True

Ib. True

Ic. True

Id. True

Ie. True

IIa. Zelinsky

IIb. Population

IIc. Canada

IId. Economy

IIe. Urban

IIIa. Rural to Rural migration

IIIb. Urban to Rural migration

IIIc. Construction

IIId. Community

IIIe. Human

4.11 TECHNICAL WORDS AND THEIR MEANING

- **Rural:**In general, a rural area or a countryside is a geographic area that is located outside towns and cities. Typical rural areas have a low population density and small settlements. Agricultural areas and areas with forestry typically are described as rural. Different countries have varying definitions of rural for statistical and administrative purposes.
- **Urban:**An urban area, or built-up area, is a human settlement with a high population density and infrastructure of built environment. Urban areas are created through urbanization and are categorized by urban morphology as cities, towns, conurbations or suburbs.
- **HDI:**The Human Development Index (HDI) is a statistic composite index of life expectancy, education (mean years of schooling completed and expected years of schooling upon entering the education system), and per capita income indicators, which are used to

rank countries into four tiers of human development. A country scores a higher level of HDI when the lifespan is higher, the education level is higher, and the gross national income GNI (PPP) per capita is higher. It was developed by Pakistani economist Mahbub ul Haq and was further used to measure a country's development by the United Nations Development Programme (UNDP)'s Human Development Report Office.

4.12 TASK

Trace the movement of mankind in the ancient times and try to analyse the relationship with the present.

4.13 REFERENCES FOR FURTHER STUDY

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