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ಮಾನಸಗಂಗೋತ್ರಿ, ಮೈಸೂರು – 570 006

Karnataka State Open University
Manasagangotri, Mysore – 570 006

M.Sc., GEOGRAPHY

First Semester

CULTURAL GEOGRAPHY

COURSE – 102 **BLOCK – 1, 2, 3 and 4**

ಉನ್ನತ ಶಿಕ್ಷಣಕ್ಕಾಗಿ ಇರುವ ಅವಕಾಶಗಳನ್ನು ಹೆಚ್ಚಿಸುವುದಕ್ಕೆ ಮತ್ತು ಶಿಕ್ಷಣವನ್ನು ಪ್ರಜಾತಂತ್ರೀಕರಿಸುವುದಕ್ಕೆ ಮುಕ್ತ ವಿಶ್ವವಿದ್ಯಾನಿಲಯ ವ್ಯವಸ್ಥೆಯನ್ನು ಆರಂಭಿಸಲಾಗಿದೆ.

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ಮುಕ್ತ ವಿಶ್ವವಿದ್ಯಾನಿಲಯವು ದೂರಶಿಕ್ಷಣ ಪದ್ಧತಿಯಲ್ಲಿ ಬಹುಮಾಧ್ಯಮ ಗಳನ್ನು ಉಪಯೋಗಿಸುತ್ತದೆ. ..... ವಿದ್ಯಾಕಾಂಕ್ಷಿ ಗಳನ್ನು ಜ್ಞಾನ ಸಂಪಾದನೆಗಾಗಿ ಕಲಿಕಾ ಕೇಂದ್ರಕ್ಕೆ ಕೊಂಡೊಯ್ಯುವ ಬದಲು, ಜ್ಞಾನ ಸಂಪತ್ತನ್ನು ವಿದ್ಯೆ ಕಲಿಯುವವರ ಬಳಿ ಕೊಂಡೊಯ್ಯುವ ವಾಹಕ ವಾಗಿದೆ.

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M.Sc,
GEOGRAPHY
COURSE - 102
CULTURAL GEOGRAPHY

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COURSE INTRODUCTION

Cultural geography is one of the two major branches of geography and is habitually called human geography. Cultural geography is the study of the many cultural aspects found throughout the world and how they relate to the spaces and places where they originate and then ravel as people regularly move across various areas.

The whole course is comprised of 4 blocks of 16 units.

Block1 lights on the Nature of cultural Geography, Definitions, Elements of Culture convergence and Divergence, Cultural change. And also focus on the themes in Cultural Geography, Cultural Region and Cultural Ecology. Cultural Diffusion, Cultural Integration and Cultural Landscape. Cultural Diversity, Human Races Cacasoid, Mangoloids and Negroids.

Block-2 give more information about the various Religions of the World and different Languages in the World. Cultural Diversity, Cultural Realms of the world Major ethics and Tribal Groups of the World are also analysed.

Block-3 attempts to deals with various tribes such as Bushmen, Eskimos, Pigmis and their Changing livelihoods in the world. In this block also discuss on Tribes and tribal regions of India, and Patterns of Livelihood and various Economic activities -Agriculture

Industrialization and Modernization.

Block-4 gives rich idea about the Technological changes and their Geographical Implications. The world human settlements and its types. Pattern of Rural and Urban Settlements are discuss here in detail. Further focus on the Social process in the city. And City in the developing country in the world

UNIT - 1 NATURE OF CULTURAL GEOGRAPHY

Structure

1.0 OBJECTIVES

After studying this unit, you will be able to

i) Analyze the cultural geography

ii) Identify the convergence and divergence of culture

iii) Recognize the cultural change and factors and its process.

1.1 INTRODUCTION

The word **'culture'** has many definitions of varying dimensions in relation to different circumstances. 'Culture' is one of the few words in English language, which has been defined in different ways. It is because of its intricate historical development in several European languages. As commonly accepted the word 'culture' is derived from a Latin, rooted term 'Colere' which later has been changed into 'culture' It has a wide ranging meaning such as inhabit, cultivate, protect, honor etc.

The word 'culture' is generally used to denote **'the way of living'.** It has become a general term for the practices, symbols and meanings that different groups refer to in claiming rights of recognitions. According to Douglas Jackson, **"culture is the accumulation of learned experience that is transmitted from one generation to other and over earth space from one group to another.** In this sense culture is the guardian of human activities on earth. This means that each generation can build on what has gone before.

Thus culture is both a diary and a blue print; through course of time, generations of mankind have left something behind which we all inherit for our use. It is thus culture is created and sustained by man through generations. As Spencer and Thomas put **'Culture is the sum total of of historically learned human behaviour and ways of doing things.** Human culture did not develop collectively, but in separate units put together by different groups of people each of whom occupied a specific territory on the face of the earth. Every group of people responds to opportunities in the physical and biotic environments in which they live. Each group occupying a particular environment work out a way of living such as securing food, shelter, amusement etc. In course of time develops a pattern of behaviour, social practices and sets of rules that operated for the group as a whole. Individuals born in the group would practices to live along with

the group in the particular territory. Thus culture is a way of living developed in relation to communities and environment in which the people live and works. According to Edward Taylor **'culture refers to all kinds of human knowledge, belief, art, morality, law, traditions.** Kroaber and Klukhone defines that culture refers to total achievements of men, their behaviour, use of symbols or signs.

From these explanations with regard to 'culture' we can conclude that:

- culture is man made, in relation to his environment.
- Culture is a way of life. It is not inherited. In contrast it is learnt and also transferred from one generation to another.
- Culture is represented by the community and not by the individual.
- Culture is a process of continuous change through the dimension of time.

1.2 CULTURAL GEOGRAPHY

Cultural geography is one of the most important branches of Human geography. Though studies of human cultures were there in geographic literature even earlier, it was only to deal with man-environment relationship. The rise of Berkeley School of Thought lead by Carl O Sauer and his students at the University of California at Berkeley, studies of human culture gained momentum. Cultural geography was treated almost parallel to human geography and these have become almost synonymous. Sauer was much influenced by the German developments in landscape studies. To be precise Otto Schlutcher of Germany has divided the landscape into physical landscape and cultural landscape which was borrowed by Sauer and has developed the studies of cultural landscapes into a school of thought.

Definitions: It is necessary to look into some of the well known definitions to understand the field and nature of cultural geography.

Spencer and Thomos: "Cultural geography is concerned specially with systems of human technology and cultural practices as these are developed by societies in particular regions of the earth through time. In the words of Wagner and Mikesell "**cultural geography is the application of the idea of culture to geographic problems. Douglas Jackson defined that cultural geography whereby cultural change, cultural areas takes shape and cultural landscapes are formed. It tries to understand "the way in which culture evolves, contributes to the formation of culture communities and areas and leads to**

an imprint in the landscape. Carl O Sauer describes that **"cultural geography is concerned with those works of man that are inscribed into the earth's surface and give to it characteristic expression. The culture area is then an assemblage of such forms as have independence and is functionally differentiated from other areas".** According to the Dictionary of Human geography **"cultural geography has addressed the existence of a variegated landscape of differentially adapted human groups to their immediate environment".**

1.3 CULTURAL ELEMENTS

Culture is a comprehensive term refers to that complex whole which includes all sorts of human knowledge, belief, art, morals, law, customs and other capabilities and habits acquired by man as a member of society. It is the whole of social tradition. The culture of today is alays largely received from yesterday; that is what tradition or transmission means. It is a passing or sending along a handing through from one generation to another. Though culture also includes artifacts and other physical materials, most of culture consisting of ideals and behaviours. Thus culture is the sum of all learned behaviour reflected in the way of life. Culture is a set of traits and their means of transmission.

Cultural traits

Culture is a broad system consisting of several components. The smallest unit of culture is a culture trait. It may be a behavioural trait or a particular use of a tool. Different cultures have different cultural trait. For example, rearing cattle is a trait. Using cattle for different purposes are also different traits which becomes cultural complex. A large assemblage of cultural complexes fit together into a culture system. Similarly an assemblage of cultural systems in an area forms a cultural region. A group of cultural regions termed as a cultural world or cultural realm.

Cultural traits and complexes are structured in particular ways by different societies and each trait or complex serves a particular role or function in a given society. Structure has reference to the arrangement of parts of any whole or role refers to the purpose each part plays in the operations of the whole. Human societies have innumerable ways of arraying culture traits and complexes in combination to form a system.

Thus cultural elements are of various groups. Language, religion, housing, occupation, dress, diet, and all types of behaviours comes under cultural elements. Each one of these elements have various sub types. For example, agriculture is a cultural trait which has several sub traits which includes various types of implements used for agriculture, crops grown, methods of storage, consumption etc. Similarly languages are of various types each one with its own dialects and each pronunciation has its own meaning different from others. Similarly, dress and diet are also cultural habits, which differ from one group to another. Each religion is distinct with its own customs, traditions, worshipping, nature of worshipping, temples and their internal structures, prayers. Similarly housing styles, size, internal structures, roofing are the typical cultural traits. To some extent the housing also indicate the economic status as well as religion practiced by the family which live there. All these traits ultimately give an unique picture inherited by the people called culture. Even social hierarchy like castes in India or catholic hierarchy, rituals, habits, attitudes is also cultural traits. Thus, every culture has its own do's and don'ts.

The varieties of characteristics that are included in the culture are "the body of customary beliefs, social forms and **material traits** constituting a distinct complex of tradition of a racial, religious or **social group**". Customary beliefs are the primary feature of a culture. It reflects in a tangible, visible form , our taste values, aspirations and fears. Customary beliefs are very strong particularly in the realm of food. For example, a large number of people consume beef mutton and chicken but not horses. People even in the same environment prefer to have specific foods and avoids others. In India there is a big gap in terms of food habits between the communities.

Similar to customary beliefs, **social forms and institutions** forms second important element of culture. Man in accordance with cultural preferences produces these. Farms, settlements and other structures are created on the land. These are in accordance with the customs of a particular organization. Peoples distinctive culture is reflected by these features. All types of religious structures, organizations, institutions which play a major role in the evolution of cultural landscape comes under this category. Even sometimes, these social forms and institutions influence on even dress, language and also food habits. In a multicultural society like India, these have special significance and as soon as one enters an area he can realize which dominant religious adherents are there in the particular area.

In addition to customary beliefs, social forms and institutions production of a society's material expressions are the third important element of culture. Technical knowledge is the most important factor of society's production. Aided by technology some societies are advanced produce more and change the landscape and whereas others donot. Thus, production functions and related technology forms the third important element of culture.

1.4 CULTURAL DIVERGENCE AND CONVERGENCE

Spread of culture from the centre of its evolution is called cultural divergence. Human culture was evolved originally in few locations. It is in these places many cultural traits were evolved and from which they were gradually differed to many other parts. In the beginning of Neolithic period many of the local and regional cultural groups who were already knowing stone materials, hunting animals for food were gradually dispersed. Basic handicraft systems such as pottery making, stone-tool making were known to only the groups moved into favourable environments have culturally more advanced. In course of time pastoralism gradually advanced. It has been pursued in the dry margins and hilly tracts as an alternative to crop cultivation. In the earliest phase of animal rearing they were nomadic herders moving frequently in search of food and water supplies. Pastoralism is defined as a system of economic production in which seasonally mobile of herds of animals convert grassy and shrubby plant growth into products useable by human beings. These products comprised meat, blood, milk, tallow, skin, dung, wool, hair, horn and bone. A pastoral group driven out from its home became nomadic in search for a new home. There have had come into contact with other groups and have learnt other's cultural traits and also have taught their cultural learning to others. Early cultural groups have also learnt to grow crops along with pastoralism. Crop fields required human attention and labour. As such some people remained in the home looking after fields and others have moved with their animals. Even 'transhumance' was also practiced in course of time. Along with sheep, goats, cattle, horses were also added to pastoral animal stocks. Competition among the groups for food and water resources has made the people move away from their original places and this kind of movements have lead to divergence of culture into new areas, all along the route of movement and place they have settled. This kind of movements have also responsible for early struggles between mobile pastoralists and the sedentary natives. Pastoral cavalry was also advanced which had helped for their movement to far off areas.

The earliest form of growing crops was shifting cultivation who were also keeping few animals. Gradually they became sedentary and gardening was also introduced. Permanent control over land was essential and private ownership land practices were developed. In addition to hand labour simple tools and small scale operations were also invented. The new cropping system produced changes in the social organizations. The family system was advanced. Compact village settlements were established. Some groups were able to produce surplus which lead to barter and trade system.

Human population has increased in some of the groups and they were forced to migrate in search of new lands for settlements. All human movements accomplishes diffusion of culture. These movements may be grouped under the headings of exploration, migration and conquests. **Exploration** is one of the basic qualities of man as a result of curiosity. It has also been caused by cultural or environmental processes as solution to some difficulties. There were endless human movements for colonization of empty or partially occupied territories. Colonisation in early times was spontaneous in nature. Further there were conquests combined with migrations and colonization. New cultural traits such as language, methods of cultivation, implements, government, kingdom, administration, laws were spread almost to every part of the inhabited lands. Thus the pattern of human movement became a cultural tool constantly adding to the variety of ways of living that have come to characterize the earth.

Cultural divergence has become rapid in the modern times. Industrial revolution started in Britain gradually diffused to almost every part of the world in different forms. It was the textile manufacturing which gained significance. It was because weaving dress of various types has become common not only as a necessity but also for fashion as well as modernization. Mining and metallurgical industries were established in the favourable locations. Means of transportation has been revolutionalised. Trade and Exchange have become common. Thus cultures have been experienced divergence and have been spread to different and alien landing. It is in this way English language, music, technology, dress, housing, farming methods, crops etc., were diffused worldwide.

ii. **Convergence of Culture:** A dynamic cultural process by which culture system develop similar characteristics, institutions and patterns. It is often held that the process produces independently developed similarities. The cultural similarities are also produced due to diffusion which is also called convergence of culture.

Though there was convergence of culture in the past, it was only on a small scale, confining to particular location and communities. It was only in the 15th century AD the European culture spread outwards with a complex of new ideas, new literature, new technology, new philosophy, new processes and goods that had set by motion a series of irreversible social, political and cultural changes. Colonisation christianisation, political nationalism, capitalistic industrialization, new form of militarism and new aspects of urbanisms were all European derivatives, spread outwards and swept most of the people of the world. New concepts like public health, preventive medicine, public education, the emancipation of slaves and new political systems such as democracy, socialism, communisms and internationalisms. European expansion of culture is thus the most important cultural convergence which produced replica in different parts of the world. The early cultural hearths though resisted European culture have gradually adopted many traits of it.

Europeans after geographical discoveries have established colonies almost in every continent. By 1905 much of the world had been divided up among the European political powers including Russia. The European countries have established good transport network facilitating diffusion of new culture. Many local cultural traits are also diffused around the earth, and were so interrelated in evolutionary change that particular foods, particular dress, specific tools and operating procedures had become worldwide in distribution. Thus the peoples of the world have converged in their ways of living. The humanised global had become an integrated habitat of man and his culture. Urban-industrial complexes were established in every continent. Many traditional cultures which were humanly varied and evolved in isolation began to disintegrate under the impact of urban based industrial society. Thus wherever the people living in any part of the Asian world they have common ways of life than divergence. People who were living separately isolated have mixed up. Different cultures were blended. Now in the human cultures there are more similarities than striking contrasts. Technological and cultural diffusion has brought similarity among the people of the world. Even the legal systems were influenced with each other. The three religious systems Buddhism, Christianity and Islam have diffused around the world from their locations of evolution and accepted by many different peoples possessing quite varied systems of culture. As each of the religions is accepted by a new culture group, the religious symbols and specific practices undergo varying amounts of modification. Even the institutional structures, organizations have also changed with new religion. Language and writing have spread the education world

wide and also to every segment of the society. Thus at present there is a universal community of one culture with little changes within.

1.5 CULTURAL CHANGE

Culture is not static; it is changing continuously through the dimension of space as well as time. It means culture varies not only from one place to another but in the same place culture is different in different times. Human cultures have been modified by several processes such as process of industrialization, urbanizations, westernization etc. However, there are four basic processes of cultural change. These are discovery, invention, evolution and diffusion.

i. Discovery: According to Oxford dictionary **'discovery'** means the process of finding information, a place or an object, especially for the first time. For example, discovery of electricity, voyage of discoveries etc. It is the act of finding things that are new to the experience of people but that occur naturally in the physical or biotic environment. For example, coal was formed in the nature by natural processes but its usage was discovered only in the recent times. Similarly petroleum, human blood circulation are also discoveries. Thus basically discovery in the way in which man learns about the physical world. Such discoveries of man alters human cultural environment.

ii. Invention or innovation: Invention is the human act of creating something new that does not occur naturally in the natural world. If it is adopted or accepted by people it is called innovation. Man has invented innumerable items throughout the history of his existence. Invention of fire paper, printing, telephone, telegraph, computers, internet, mobile phones, solar cooking devices are some of the most important inventions of man. Each one of these inventions have changed the human culture. These have changed human life over a large area of the earth. Not only material artifacts, even the 'state' is also human invention. The greater share of the things we live within daily life are human inventions that enable a pattern of living different from that of animal kingdom. Invention is the product of creativity of man kind. Human comforts are the result of endless innovations that are taking place in different parts of the world. Education and training are contributing to a large extent for new inventions. Thus 'Research' has become most important part of modern civilization which leads to inventions.

iii. Evolution: It is the third important process of cultural change. It is the process of making changes in the things produced, in the inventions made earlier or arranged by human inventive processes. Man is always trying to incorporate changes whatever he had produced or invented earlier to make it suitable for present circumstance or to make it viable useful for different location as well as time. For example, once the crop variety is innovated, he tries to modify it suitable for different places inducing different qualities to the new variety. Thus most of the things we are using today not only have been invented but also modified or altered over time or the original one replaced by a new set of alterations. The earlier houses of man were altered so much to meet the requirement of the present day with all modern furnishings. Though evolution is a natural process, similar evolutionary process is also found everywhere and in every cultural aspect. The shape, size, equipment, furnishings, utilities and technology in the automobile is an example for evolutionary processes. Even the political systems, constitutions are also frequently changed to meet the requirement of the present generations. Thus the present cultural scenario is the result of evolutionary process since a very long time.

iv. Diffusion: It is the fourth important process of cultural change. Knowledge of discoveries, inventions and innovations, the resultant products of evolution get diffused in the dimension of space and time. The places where they are invented or get evolved spread outward in different routes called channels. It is almost like ripples of water spread in a pond when it is disturbed by throwing a stone. Thus diffusion refers to spreading, distributing or scattering of something away from the locality of original occurrence. The cultural traits get diffused and also modified in different places and further they are get diffused. Cultivation of crops, animal rearing, dress, diet, utensils, hunting materials, cultivating implements, Crop varieties, even languages, religions are all experience diffusion and spread outwards from where they are innovated. In addition to cultural traits borrowing of ideas, traits, procedures or artifacts are also adopted from the other societies. Some of the cultural factors are also forced to get adopt by the people of other communities. It is through forcing some of the religions have been diffused. The languages have been diffused after the inventions and colonization. Industrialization and communication means are the recent examples of diffusion in the world.

The cultural processes which leads to cultural change operate in interlock and repetitive fashion with a feedback. In this respect innovation of one will have a chain reaction in the entire process. For example, a new raw material is innovated displacing

the earlier one. It leads to evolutionary process in the machine employed in producing the product. A new variety of crop like capsicum is introduced into the traditional farming society. Along with the new variety of crop, its cultivation methods, new fertilizers and its applications, pesticides and insecticides, inter-cultivation, harvesting, processing and marketing methods also get modified as the new variety is different from the earlier one. Similarly dress, housing, and even food preparation methods get change and leads to changes in the entire system. Not only in the use of the basic processes effective for changing the material ways of our life but also induce changes in the landscape itself. Thus human culture involves a continuous process of change through discovery, innovation, evolution and diffusion.

1.6 LET US SUM UP

Cultural geography is one of the branches of Human geography. Culture is learnt and not inherited. Culture is the accumulation of learned experience that is transmitted from one generation to another. Cultural geography is the study of the way in which culture evolves, contributes to the formation of cultural communities and areas and leads to an imprint in the landscape. It is largely the study of cultural traits and their transmission. Culture converge as well as diverges. At the same time culture is not static. Cultural change is a continuum process. There are four important processes of cultural change. These are discovery, invention/innovation, evolution and diffusion.

1.7 KEY WORDS

Culture, cultural geography, cultural traits, cultural complexes, cultural areas, convergence of culture, divergence of culture, discovery invention and innovation, evolution, diffusion.

1.8 QUESTIONS FOR SELF STUDY

1. Define culture and cultural characteristics.
2. What is cultural geography? Write some of the definitions of cultural geography.
3. Explain the elements of cultural geography.
4. Give an account of the convergence and divergence of culture.
5. Explain the basic processes of cultural change.

1.9 FURTHER READINGS

1. Spencer J E and Thomos W.L. : Introducing Cultural Geography, John Wesley and Sons, New York, 1978.

2. Wagner and Mikesell : Readings in Cultural geography.

3. Fellmann, Gelis : Human geography, Landscape of Human Activities, Brown and Benchmark, 1997.

4. Edward F. Bergman : Human geography, Culture connections and Lanscape, Prentice Hall, New Jersy, 1995.

UNIT - 2 THEMES IN CULTURAL GEOGRAPHY – CULTURAL REGION AND CULTURAL ECOLOGY

Structure

2.0 OBJECTIVES

After studying this unit, you will be able to

i) Explain the main themes of cultural geography

ii) Analyze an application of an idea of culture to geographic problems.

iii) Realize the themes study of cultural geography revolves.

2.1 INTRODUCTION

Every discipline has its field of study. As such cultural geography, as a major branch of Human geography, too has its own domain of study. 'Geographical Study of Human Culture' is the core matter of cultural geography around which many other related aspects are also studied. The themes are the important content of the subject.

The word **'theme'** according to Oxford dictionary is **'the main idea of the subject'. 'It is a topic of discourse or discussion'. 'It is an implicit or recurrent idea'**. Cultural geography being the study of spatial aspects of human culture includes the study of the distribution of cultural traits like language, religion, the spatial difference of different culture and the varying nature of the cultural land scape. Thus in geographical studies culture embraces a wide range of human attributes and artifacts from beliefs, ideas and values through customs and behaviour, to tools and art. It is through the culture people make use of the environment and also respond to its determining influences. Thus many aspects of culture are deeply rooted in the environment. The themes of cultural geography includes all these aspects in its fold.

2.2 MAJOR THEMES

Some of the important themes of cultural geography have been clearly identified by the well known cultural geographers. Encyclopedia Britannica has identified five major themes of cultural geography. They have been repeatedly stated by Philip L Wagner and Marwin W. Mikesell in the book **Readings in Cultural Geography.**

According to them the features of the earth, in particular those produced or modified by human action are of great significance which forms the cultural geography. They have identified five major themes of cultural geography. These five implicit themes are **culture, cultural area, cultural land scape, cultural history and cultural ecology.**

These themes are interrelated to each other. Culture is the ways of life that have been created by human communities. Thus culture includes all man made features as well as many non-physical aspects like language, religion, literature, experience, knowledge etc. Cultural geography describes the changing distribution of **'cultural areas'** in relation to other geographical phenomena. It is to identify the role of man in creating and understanding the cultural phenomena in relation to the environment. Cultural landscape in the typical cultural area associated with each community. It is evolved with man environment relationship in course of time. Thus every cultural landscape has its own history of evolution.

2.3 CULTURE

Culture is an outcome of the ability of man to communicate among themselves through symbols. Culture is a key to systematic understanding of differences and similarities among men. It is most important for generalization about human attitude and behaviour. Culture focuses attention not on isolated individuals and whatever personal characteristics they happen to possess but instead on community of persons occupying a certain extended and usually continuous space and on the numerous features of belief and behaviour that are held in common by members of such communities. In other words **'culture'** refers to the beliefs and behaviours and characteristics of the groups of people living in an area. It offers a means of classifying human beings into well defined groups and also a means of classifying inhabiting areas. It refers to the way of human life of the communities. Culture is thus evolved by the people when they live and work together, learn from the same companions and teachers, see around the same man made objects, participate in the same rituals and remember the same pasts. When the people occupy a common area culture gradually evolves in course of time.

A community of people sharing a common culture may exist even as a simple isolated village. In such situations all the inhabitants are in direct contact. Similarly it may also extend over a large area within which people, objects and ideas circulate more

or less freely and continually. The culture spreads as those who share it move about or on its corresponding sphere of communication, the symbols embodied therein, cause to prevail over those of other cultures in new territories and gets expansion..

Language as an essential medium of human communication, is the most important component of a culture. It strongly influence upon culture. At the same time it is strongly influenced by other aspects of the culture. However the speech of a community is its one of the distinguishing traits. Even exclamations, gestures, facial expressions are also integral part of a language. So also pictures, emblems and every thing that is regularly recognized as "meaning some thing". Ultimately objects and behaviour of all kinds are included in communication. Even culture ascribes meaning to every thing from deliberately articulated vocal sounds to beings, objects and places. In addition to language social institutions, ideologies also play an important role in culture.

Culture is also analysed on different levels or stages. It has been proved feasible and convenient to analyse the geographic manifestations of past cultures from the standpoint of their maximum technical and organizational potential rather than their specific patterns of action. It is because any culture is limited in its capacity to transform technical knowledge, institutional management and organization, preferences and prohibitions etc. So to understand the culture of an area one must also know what are the taboos of the people of the area, avoidance of certain food like beef in India, pork in Muslim countries, restrictions on the use of lands, absence of certain techniques, prohibitions on particular occupations, lack of certain tools, organizational techniques for development etc. Thus we can understand the level of culture in relation to their fullest potentials. In cultural geography the origin and diffusion of particular cultural traits is also studied.

2.4 CULTURE AREA

A culture area is a geographical region over which homogeneity in measurable cultural traits may be identified. Thus culture area recognition is almost similar to natural regions defined by A.J. Herbertson. Similarity of culture over an area is designated as cultural area. These are not produced physically, but only recognized by geographers. Like the concept of region culture area is also an intellectual recognition rather than reality. Culture area implies a relative uniformity rather than absolute one. At the same

time the degree of uniformity or similarity also varies. In relation to location three aspects are common in the study of culture. Every culture has its original centre from where it has been evolved. These are the points of **cultural hearths** or **centres**. From these centres culture is diffused in particular direction and there are the lines or channels of cultural diffusion. At the end there will be a continuous or uninterrupted area of similarity of culture called culture area. Further a larger area known for common cultural features called cultural realm.

Though both language and religion play a significant role in the evolution of culture area, religion sometimes has diffused rapidly than the language. For example, though Islam was originated in the Arabic land was diffused to many alien areas without Arabic language. Similarly diffusion of Christianity has no linguistic barriers. Languages have their impact role like place names and non rustic vocabularies and serves as indices of culture areas. Sometimes at a general level in addition to language other elements of culture like religions, technology and economy have an extended distribution and serve to bind together in some degree subordinate culture areas. However in such cultural encroaches the material remains of the past culture also remains even in the new culture. Besides a culture area is usually associated with a particular environment. Even if there is small variation of environment it is well reflected in the cultural differences. For example, in a coastal belt and in an island nearby culture may have large variations. Though geographically nearer the hilly tracts the flood plains, irrigated tracts and rainfed areas have large variations of culture.

While identifying cultural areas in addition to its evolution, even the boundaries are also need to be identified. The boundaries of the culture area are not clear cut because the cultural regions are not like water tight compartments cultural areas gradually merge with the neighbouring regions. As such in between the cultural area there will be a transitional belt which has the characteristics of both the adjoining culture areas.

Similarly, culture areas are identified both by single feature or multiple features. For example, religious regions, language regions, region of a particular dish, dress or a particular habit etc. These regions normally have a **'core area'** from where the culture is evolved. It is surrounded by a **'periphery'** where the same cultural features are found and their intensity or density is much lower and it is influenced by the neighbouring culture. Thus, core-periphery model may be effectively used to study culture areas.

2.5 CULTURAL LANDSCAPE

It is one of the most important themes of cultural geography. Otto Schlutcher of Germany has divided the 'landscape' feature into physical and cultural landscape. This cultural landscape was propagated and popularized by Carl Ortwin Sauer at the Berkeley University. It has become a theme of geographical research and the tradition was called **'Berkeley School of Thought'**. Since then it has become a traditional method of explanation in cultural geography.

A culture area, in geographic terms may constitute a region. It becomes a definable unit of space, characterized by relative internal homogeneity. With regard to certain criteria, the typical association of concrete geographic features within a region and in any other spectral sub-divisions may be described as a cultural landscape. As defined by Sauer **"The cultural landscape is fashioned from a natural landscape by a cultural group. Culture is an agent, the natural area, the medium the cultural landscape is the result. Under the influence of a given culture itself changing through time, the landscape undergoes development, passing through phases and probably reaching ultimately the end of its cycle of development. Thus the cultural landscape is the result of the inter face between man and nature".**

Cultural landscape is gradually evolved over several generations sometimes. Its evolution is gradual and a cumulative process. Thus it has a history of its own. The stages in the history have meaning for the present landscape as well as for those of the past. More over the present landscapes of the world reflect not only local evolutions but also a multitude of influences carried by successive waves of migrations, diffusion, commerce and exchange. The present cultural landscapes of the world have the result of a long succession of different cultures and cultural developments.

2.6 CULTURAL HISTORY

Cultural geography has to seek evidences to study the present landscapes with reference to their evolution. It is because all cultural landscapes are evolved through succession of cultures over time. Thus through documents, place names or other linguistic evidence investigations may discover sequence in the occupations of an area by a different communities and link with people of other areas showing similar characteristics. The linguistic linkage may be found without implying migrations and other replacement of

older populations. The roots of Dravidians in South India has been successfully traced to the West Asian lands based on linguistic similarities. Similarly Roman culture has penetrated far into Central Europe and gradually diminishing without replaced by other people. In this regard Archeology sets evidences. People speaking different languages and thinking as well as acting differently may leave behind a similar bit of tools unique to them. Such instruments are recovered by Archeologists and they are compared to the present instruments which are usually more refined form of the old one. The cultural geographer tries to amplify and extend that record to include all possible facts relating to environments of former cultures. Thus establishing chronology and areal distributions archaeology is able to trace the evolution of techniques and organization. The same methodology is also applicable for the study of diffusion of plant and animals.

Cultural history of an area is established having such evidences from trait and complex distribution, the biology of domesticates, archeology, linguistics, place names, documents, oral traditions and other sources. It seeks to discover four kinds of facts.

- The origin, time and place of given cultural features.
- The routes and manner of their dissemination
- The distribution of former culture areas
- The character of former cultural landscape.

Thus one should get the knowledge of archeologists, linguist, economic historian, agronomists and ethnologist to understand the cultural history of a region. Crops cultivation and migrations also provide ample proof for cultural history. Large scale redistribution of people had a great effect on cultures. This kind of large human migrations are described as frontiers and distinguish between frontiers of inclusion or assimilation and frontiers of exclusion. The Arabs and Spanish people who have migrated on a large scale were assimilated with the natives. In contrast the Europeans who migrated to Asian and African countries have remained separately. In any cultural areas ideas and techniques tend to diffuse and the areas are actually enriched. New cultural traits and complexes are added to the old and co-exist with them. So eventually a new pattern emerge. In some cases the old culture is overtaken by the newly infused culture of immigrations. The old low level weak culture is replaced by a higher level culture. This phenomena was described as **'cultural succession'**. In such cases the remnants of old culture are very rarely seen.

2.7 CULTURAL ECOLOGY

It is one of the important themes of cultural geography and cultural geographers are concerned with the study of culture in relation to normal processes that have produced the respective cultural landscape. Cultural ecology has been primarily concerned with the relationships among the transformation of nature, social reproduction and cultural processes within particular transformation. It is largely concerned with non-industrial societies such as pastoralists, hunter, gatherers, fishing culture and small scale subsistence cultivators in particular. Cultural ecology is most closely associated with the works of Steward and the **'Chicago School'** particularly after the publication of Steward's **'Theory of Culture Change'** in 1955.

Steward had emphasized a close relationship between cultural symbols such as values, religious beliefs, traditions on the one hand and the material, ecological basis of the society on the other. Cultural Ecology was much influenced by the rise of ecology. Many ecological concepts such as adaptation, homeostatic, resilience, stability have been followed even in the study of human society as an ecological unit. Culture functioning has been linked to environment conditions and resource availability. Thus cultural history deals with a sequence of events whereas cultural ecology concerns the process in a sequence of events.

Cultural ecology like other sub fields of cultural geography begins its work with careful comparison of observed rational data. It tries to evaluate what landscapes are invariably associated with certain known practices; what kinds of human action appear in all available instances to be linked or at least coincident with given landscape developments. What conditions of livelihood are consistently associated with a particular kind of landscape. Thus for example, a careful study of farming techniques often reveals just how a soil is degraded or gradually enriched and stabilized, how systematic utilization of fish or some demonstrators how a given people multiply and prosper in a stern habitat.

Thus cultural ecology can give a meaningful interpretations to our technology and its effects when more about the cultures concerned becomes known. It therefore tends to concentrate upon other societies for which the cultural data are more complete and in this way share interests with anthropology. These two are complementary to each other.

2.8 LET US SUM UP

Cultural geography has five well established themes of study. These are culture, culture area, cultural landscape, cultural history and cultural ecology. It is through these guiding themes human culture is studied, understood and interpreted. These forms the basis of cultural geography in general.

2.9 KEY WORDS

Cultural themes, Culture, Culture area, Cultural landscape, Cultural History, Cultural Ecology, Cultural Hearths, Core and Periphery, Berkeley School, Cultural Succession.

2.10 QUESTIONS FOR SELF STUDY

1. What are the major themes of cultural geography? Give a brief account of them.
2. Describe the themes of culture and cultural area
3. How the study of history is essential to understand the cultural landscape of the region?
4. Give an account of Cultural Ecology theme.

2.11 FURTHER READING

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UNIT - 3 CULTURAL DIFFUSION, CULTURAL INTEGRATION AND CULTURAL LANDSCAPE

Structure

3.0 OBJECTIVES

After studying this unit, you will be able to

i) Analyse the process and types of spatial diffusion

ii) Explain the Haferstrand's model of spatial diffusion

iii) Differentiate the cultural evolution and diffusions

iv) Analyse the meaning of cultural landscape and its evolution .

v) Identify the cultural landscape concept and its development in cultural geography.

3.1 INTRODUCTION

In the beginning, human cultures are evolved by the isolated communities in relation to their local environments on which they were dependent for all of their needs. The aspects of civilization were evolved only in few ideal places on the earth surface where the wandering people have tried to settle permanently. They have invented original cultural traits like clothing, diet, language, housing and ways of livelihood, architecture, music etc. These cultural traits in course of time have spread out from the original place of origin. The surrounding people adopted these. This process of spreading out is called cultural diffusion and the process of adopting some aspect of another culture is called **'acculturation'**

Components of culture

Thus all the elements of culture, components may be grouped into three categories. These are 'mentifacts', 'sociofacts' and 'artifacts'. Mentifacts can't be seen, but they lie in the realms and mind. Important **mentifacts** are religious beliefs, ideologies, legends, attitude, magic, views of unique and nature, artistic ideas and styles. **Socio facts** are the features of the society such as family kinship relations, educational and political institutions, religious structure and organizations and other social organizations. **Artifacts** are the materials associated with the communities such as pots and pans and everyday living types of clothing, housing tools, implements, means of transportation, city structures etc. These are almost unique to particular society in the primitive societies. Once these are innovated, tested and used in their life, if they are found useful and feasible other societies which have contact with the communities where there are originally invented also adopt them. Thus cultural traits get diffused over space and time.

3.2 CONCEPT OF DIFFUSION

Diffusion is one of the most viable field of geography. It is because diffusion involves the dimension of space as well as time. Diffusion of cultural innovations are mainly responsible for cultural change. Cultural change occurs through the spatial diffusion of successive innovations. Diffusion takes place in some form of contact or intimation. New ideas, techniques, fashions traditions etc. get diffused continuously over space. Even during the past wars, migrations, conquests, trade were the most effective means of diffusion. At present television, radio, telephone, newspapers, computers have become effective means of communication and play a significant role of diffusion. Not only cultural change even economic development to a large extent depends on diffusion and adoption of innovations. From the hearths cultural traits get diffused to the surrounding areas. However, the impact of diffusion gradually diminish away from the centres of evolution. This phenomena is called **'distance decay function'**. It is one of the most important principles of geography. It is used to measure the movement of various phenomena. Movement of consumers, migrations, retailing business have been studied with the application of distance decay concept. Further it was refined and termed **'gravity model'** which was postulated by William J. Reilly in 1929. He described that the movement of persons between two urban centres is proportional to the product of their populations and inversely proportional to the square of the distance between them.

3.3 TYPES OF DIFFUSION

Spatial diffusion process is highly complex. E.M. Regers has identified several types of diffusions. However, geographers have identified three important types of diffusion with reference to culture. These are Expansion, Heirarchial diffusion, relocation diffusion and contagious diffusion.

It is also called expansion diffusion. An innovation may spread outward in the surrounding area from its source. It is like movement of ripples in the water when it is disturbed. It goes on spreading from one group/community to another as a means of contact. A researcher can also clearly identify the waves of diffusion with intensive data collection. It is like spread of a contagious disease. Cultural diffusion is also contagious as it spreads from a particular centre. However even in this process highest concentration is at the centre and the effectiveness decrease outward. Intensity of the diffusion waves gradually diminish so that the process of diffusion comes to an end there.

Hagerstrand who is known for diffusion studies has identified three types of expansion diffusion. There are;

1.Stimulus diffusion

It is the diffusion among the neighbouring people. Innovations and techniques of a community get diffused to the people living nearby. Such people are stimulated by the new technology and adopt it. For example when a person purchase a good vehicle, the neighbourers are stimulated. Thus diffusion goes on expanding.

2.Hierarchial diffusion

Diffusion process jumps from one level to another. Newspapers circulation is an example for this kind of diffusion. In some cases once the diffusion takes place immediately it may begin to spread from some other centre. For example in case of contagious diffusion a person affected by the disease may travel to some other place and diffusion may be commenced. Normally these are printed in the large cities and diffused to districts, taluks and villages. Such kind of diffusions is also common with regards to new fashions, traditions etc. Even the agricultural innovations also get diffused from large land holder to small land holders. In case of agricultural innovations, they are initially adopted by the large landholders who are the pioneers and once the innovations are proved viable and profitable they are going to be adopted by the smaller land holders. This kind of diffusion is also called **'leap frog'** process or **'step diffusion'** or **'cascade diffusion'.** However, this kind of transmission may be downward or upward.

3.Contagious diffusion

It is similar to the spreading of contagious decreases from a centre. News, technology etc., get diffused in this manner.

3.4 BARRIERS OF DIFFUSION AND ADOPTERS

The hindrances which affects diffusion and the diffusion processes is not always without any hindrances. The channels of diffusions are of different type. For example a cultural trait like music learnt by a person may not taught it to others and it is lost with him for ever. It is also same in case of a technology, news, innovation etc. He may act like a sponge, absorb the innovation with him. These are called 'absorbing barriers'.

Any kind of barrier that halts or deflects the penetration of an innovation operates as an absorbing barrier. A river, mountain, a desert, sometime acts absorbing barriers as people cannot move and carry out diffusion.

Sometimes diffusion process to partially allowed by the barriers. These are called 'permissible barriers'. For example the rivers, deserts, mountains and the boundaries of countries are crossed by some people if not all. The innovations are carried by few people and the intensity of diffusion is limited. These are the examples for permissible barriers.

The cultural traits and innovations are diffused in time and space. These are adopted by the people if the innovations are feasible, adoptable, economically and socially viable. The adopters have been categorized into five groups by Edgar M Rogers. These are pioneers who will experiment the innovations, early adopters, early majority, late majority and laggards. If we put the cumulative number of adopters on semilog graph, we will get typical **'S'** shaped curve or diffusion curve.

3.5 OBJECTIVES AND CONCEPT OF CULTURAL LANDSCAPE

Traditional cultural geography was strongly embedded in the relationships between people, settlement and natural environment. It is largely defined as a way of life with both materials such as buildings and artifacts and non-material experiences such as language, religion and customs. Cultural geography has developed the concepts like cultural area and cultural landscapes or cultural region to identify territories characterized by common cultural traits.

It is an established fact in cultural geography that the natural background in which culture evolves has uniqueness and it is closely associated to the influences of the environment. For example cultures between a mountain and flood plain, desert and a wetland, cold and hot areas, Steppe and Woodland have almost contrasting features. An area of similar culture largely contribute for the evolution of a cultural region or cultural landscape.

For a better understanding of the concept of cultural landscape it is essential to look into the classical definition putforth by Carl Ortwin Sauer. **"The cultural landscape is fashioned from a natural landscape by a cultural group. Culture is the agent, the natural area, the medium, the cultural landscape is the result. Under the influence of a given culture itself changing through time, the landscape undergoes development passing through phases and probably reading ultimately the end of its cycle of development.**

The definition reflects not only Sauer's personal views and scholarly concerns but also theoretical issues that remain critical to discussions of cultural landscape. His description of cultural landscape as subject to evolutionary change that have been strongly advocated by W.M. Davis in his concept of cycle of erosion. Thus the landscape concept has the influences and an echo of W.M. Davis.

Originally the 'Land Scape' concept was evolved in Germany. In the German studies *'Kulturland Schaff'* was used to denote the environmental influences. Later it was **Otto Schluter** a German geographer who divided the landscape into natural and cultural landscapes on the basis of the origin of elements which constitute the respective landscape. **Sauer has explicitly concerned to counter environmental determination and stressed the mutual shaping of people and land in the creation of dwelling.** As there is influences of nature, even there is strong influences of culture in the creation of cultural landscape. Sauer has stressed culture as a geographical agent, although physical environment retained a central significance as a medium with and through which human cultures act. Hence such elements as topography soils, rivers, plants and animals were incorporated into the studies of cultural landscape. **Thus the cultural landscape concept advocated by Sauer is against environmental determinism.** The stress of cultural geographers is on the human group and its activities. Further it states that physical geography is essential to cultural geography, but not as a primary source of explanation for the condition of man.

3.6 DEVELOPMENT OF CULTURAL LANDSCAPES

Thus the cultural landscape is a characteristic product of the complicated interplay between a given human community, embodying certain cultural preferences and potentials in a set of natural or physical circumstances. It is a heritage of many eras of natural evolutions and of many generations of human effort. A landscape under the influences of man and his culture goes on changing. Every element of landscape in the vicinity of human occupation goes on changing. However, the imprint of man may not be same on all natural elements. The evidence of human influence such as cultivation, forests clearing, construction of houses and other structures, means of communication such as roads, bridges, damming of streams, dams are most common in the inhabited part of the earth's surface. These features largely reveals the culture of the people from whom the features are inherited. Human interference reflects the manner in which the cultural environment is disturbed and replaced by human impact. These features exhibit patterns distinctive to particular communities.

The cultivated lands for example appears so prominently in many landscape. These reflects not only the radical change in plant cover but also many artificial elements induced by man such as plantations, gardens cultivated fields, walls, fences, roads, footpaths, dwellings, pump-sets, electricity lines all in respective pattern of arrangement. In cultural landscape the arrangement, style and materials of these features tend to reflect the presence of a distinctive way of life, which Vidal de la Blache, the well known French geographer has called *'genre de vie'*. It is the life style of man created by himself in relation to the natural setting in which he lives. All types of architecture, cultivated plants, domestic animals, implements, vehicles, costumes, food habits reveals the genre device of the area.

The study of cultural landscapes has become a theme in the research works of geographers. There were a number of studies related to cultural studies following the works of Carl Sauer. It has been described as **'Landscape School'** or **'Berkely School of Thought'.** The cultural landscape as it is the product of inhabitation of the area over many generations reveals the history of the area also. The evolution of cultural landscape is a gradual and cumulative process and it has a history of itself. The stages in that history have meaning for the present landscape as well as for those of the past. The present landscapes not only represent the local cultural evolutions but also an influence

carried by successive waves of migrations, diffusion process of cultures that have been evolved at different locations and also commerce as well as exchanges. Thus behind most of cultural landscape of the present, there is a long succession of different cultures and cultural development. Thus the cultural landscapes bears the legacy of the history as well.

3.7 LET US SUM UP

Diffusion is the process of spreading out from a centre. Like all other innovations even the cultural traits get diffused in time and space. There are three major types of diffusion namely expansion diffusion and relocation diffusion, hierarchical diffusion and relocation diffusion . The process of diffusion is also obstructed by both natural and cultural phenomenas. These are called 'barriers'. Barriers are of two major types namely absorbing barriers and permissible barriers. The innovations and traits once diffused are adopted by the people if they are found useful and feasible. Even the adopters are classified into five groups namely innovators, early adopters, early majority, late majority and laggards. Cultural landscape or cultural region is an area of unique culture inherited for generations of human habitations. It has its own way of human life described as genre device by Vidal de la Blache. Cultural landscape school was advocated by Carl Sauer of Berkeley University, California. As such it is also described Berkeley School of Thought. The cultural landscape are the product of the history of the area, successive waves of cultural diffusion and migrations, commerce and exchange.

3.8 KEY WORDS

Diffusion, Distance decay, Cultural hearths, Acculturation, mentifacts, sociofacts, artifacts, gravity model, expansion diffusion, relocation diffusion, contagious diffusion, Leap frog or hierarchical diffusion, barriers, adopters. Landscape, Natural landscape, Cultural landscape, Berkeley School of Thought, Landscape School.

3.9 QUESTIONS FOR SELF STUDY

1.What is spatial diffusion? How it causes social change?
2.Explain different types of diffusion.
3.What is expansion diffusion and relocation diffusion?
4.Give an account of barriers and adopters.

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UNIT – 4 CULTURAL DIVERSITY, HUMAN RACES -CACASOID, MANGOLOIDS AND NEGROIDS

Structure

4.0 OBJECTIVES

After Studying this unit, you will be able to

1. Analyse the Meaning and nature of cultural diversity .
2. Appreciate the Meaning of Human races, basis for classification of races.
3. Identify the Spatial pattern of distribution of different races of the world .
4. Define the World major races and their sub groups.

4.1 INTRODUCTION

Cultural diversity is the variety of human societies or cultures in a specific region, or in the world as a whole. The term is also sometimes used to refer to multiculturalism within an organization. There is a general consensus among mainstream anthropologists that humans first emerged in Africa about two million years ago. Since then they have spread throughout the world, successfully adapting to widely differing conditions and to periodic cataclysmic changes in local and global climate. The many separate societies that emerged around the globe differed markedly from each other, and many of these differences persist to this day. As well as the more obvious cultural differences that exist between people, such as language, dress and traditions, there are also significant variations in the way societies organize themselves, in their shared conception of morality, and in the ways they interact with their environment. By analogy with biodiversity, which is thought to be essential to the long-term survival of life on earth, it can be argued that cultural diversity may be vital for the long-term survival of humanity; and that the conservation of indigenous cultures may be as important to humankind as the conservation of species and ecosystems is to life in general.

Firstly, like most evolutionary accounts of human nature, the importance of cultural diversity for survival may be an un-testable hypothesis, which can neither be proved nor disproved. Secondly, it can be argued that it is unethical deliberately to conserve "less developed" societies, because this will deny people within those societies the benefits of technological and medical advances enjoyed by those of us in the "developed" world. In the same way it is unethical to promote poverty in underdeveloped nations as cultural

diversity it is also unethical to promote all religious practices simply because they contribute to cultural diversity. Particularly, there are some practices that are recognized by the WHO and UN as unethical: Female Genital Mutilation, Sati (burning the widow on the husbands burial pyre), polygamy, child brides, human sacrifice, etc. Some individuals, particularly those with strong religious beliefs, maintain that it is in the best interests of individuals and of humanity as a whole that all people adhere to a specific model for society or specific aspects of such a model. For example, evangelical missionary organizations such as the New Tribes Mission actively work to support social changes that some observers would consider detrimental to cultural diversity by seeking out remote tribal societies to convert them to Christianity; and Islamic groups strategically buy up land in Papua New Guinea.

Cultural diversity is tricky to quantify, but a good indication is thought to be a count of the number of languages spoken in a region or in the world as a whole. By this measure, there are signs that we may be going through a period of precipitous decline in the world's cultural diversity. Research carried out in the 1990s by David Crystal (Honorary Professor of Linguistics at the University of Wales, Bangor) suggested that at that time, on average, one language was falling into disuse every two weeks. He calculated that if that rate of language death were to continue, then by the year 2100 more than 90% of the languages currently spoken in the world will have gone extinct.

4.2 HUMAN RACES

Races are the Biological grouping within human species, classified according to genetically transmitted differences. Anthropologists have defined race in the following words: "A race is principal division of mankind, marked by physical characteristics that breed". Another group of cultural anthropologists defines race in the following way: "A race is a group of people with more of less permanent distinguishing characteristics to which persons concerned attach certain interpretations",

The scientific classification of human racial type is based on certain fixed inherited and identifiable traits such as head shape, nose shape, eye shape and colour, skin colour stature, blood groups etc, all these represents morphological biological and genetical aspects. With the inclusion of more traits the number of combinations increases and the classification become more complex. Since the variations in a single character are

insufficient to describe, the diverse groups of mankind, it becomes essential to employe those which prove diagnostic in particular situation. Thus, two races may be alike in hair colour, in form and in eye colour, but differ in stature, head form and in other traits, whereas two others may be similar in head from, but diverge in eye colour and hair colour. Theoretically, these considerations should be adequate to the problem of racial classification, but in reality the difficulties are very considerable. In the first place, there is no absolute in this field. It is obvious that the more indicators one uses, the more combinations one may discover. The subjective clement, there fore, becomes a significant factor in the selection of number of traits to be used in the classification. A system, for example, based o fifteen traits will turn up many more combinations than one constructed on only three traits. Thus, we find in the literature a wide divergence in the number of races, running from several to a couple of scores. The racial picture is thus extremely complex and no systematic classification can be used without careful qualification. The traditional criteria for these classification have been natural features such as eye folds or skin colour. The classification based on these criteria divides mankind into three races. They are Caucasoid, Mangoloids and Negroids.

4.2.1Caucasoids

They are pale reddish white to alive brown in colour, medium to tall in stature, their head form various from long to blue to dark brown clolured eyes and light brown to dark brown straight to wavy hairs. Their face is narrow to medium broad tends to high, no pragmatism nasal bridge in usually high and form narrow to medium broad. The body shape is linear to lateral and slender to rugged their blood group in more 'A' than 'B'. Numerous sub-types are recognized within this group such as the tall fair haired, brown-eyed Alpine race features are brachycephalic , wavy hair , light brown colour and medium stature . Their cradle land is Alps region of Europe. They occupy a transitional position between the Nordic in the north and Mediterranean in the south. Their representatives are the Swiss , Sla, Magyars, Fins and Sioux in Europe. They also Migrated to Asia where their elements are found in India. The main physical feature Mediterranean sub group are dolichocephalic , wavy to curly hair, light brown complexion, mesorrhine and medium stature. Their cradle land is the Mediterranean region of Europe. They migrated to different parts of the earth including Egypt, Iraq, Iran, India, North America and South America. The Caucasoid are largely distributed in Europe. The Nordic race is also subgroup of the Caucasoid race, its characteristics physical features are mesocephalic, curly-wavy hair , blond hair , blue eyes and long stature . Nordics

are migrated the Mediterranean region to the Baltic region i.e. Scandinavia Baltic states , Germany , France and Britain . Their racial features are also found in North west India and Pakistan. These three groups, now inextricably inter-mixed, inhabit Europe and the Middle East. Marked difference between sub-groups are found elsewhere, especially in India, where the dark-skinned Dravidian peoples contrast with the lighter-skinned Aryan groups.

4.2.2:Mongolodis

They are saffron to yellow brown in colour medium tall to medium short in stature, their head form in predominantly broad and medium high. They have brown to dark brown colored eyes and medial epicanthic fold in common. The hairs are brown to brown black straight in from. The face is medium broad to very broad, nasal bridge is low to medium and the form medium broad. The body shape in lateral with some linear. The blood group is 'B' more than 'A'. The Mongoloid peoples inhabit northern, eastern and south-eastern Asia and were the original inhabitants of the Americas. The eye, with its characteristics fold of skin on the upper lid, and hair-type, which is lank and straight, are their chief distinguishing characteristics, but there are many minor differences between sub-groups. Short statue is a less reliable factor. The Mongols of Central Asia gave their name to the group, which also includes the Chinese, Japanese, Burmese, Thais, Vietnams, Kampucheans and Malays. It also includes the Eskimos and similar peoples of northern Siberia such as the Yakutsk and Samoyeds, the Red Indians of North America and the Amerindians of South America. Many of the American groups have evolved differently in isolation so that while the people of Tierra del Fuego at the southern tip of South America look almost exactly like Chinese people, the tall, bronze-skinned, hook-nosed Indians of the Great Plains have less in common with Asian groups. The Mongoloids constitute three basic strands : The Mongolian proper East Asia , The Malaysian of South-East Asia and American Indians (America) . In physical traits they are not much divergent . The Mongolian proper is the most pronounced form with its characteristics Mongolian eye with epicanthic fold in the heart land of East –Asia (China, Japan, Korea, Mongolia). A.L.Krober opines that, the original mongoloaid stock must be looked upon as having been more like the present day Malayasians or American Indians or Intermediate between them. The Philipinos have been called Proto-Malayaysian , resembling in some aspects with the Indo-Australoid.

4.2.3 Negroids

The Negroids peoples live chiefly in Africa south of the sahara and include many subgroups such as the Nilotic and Hamitic peoples of eastern Africa, the Bantus of central and southern Africa and the various groups of West Africa. They also include a number of minor groups such as the Bushmen, the Pygmies and the negrito peoples of India and South-East Asia, as well as the Melanesians of the South-West Pacific. All these peoples have crinkly or frizzy hair and broad, rather flat, noses. They are generally long headed i.e. their heads are longer than they are broad, and their skin colour varies from black to brown or yellowish. Their stature too is very varied; the negroes of Sudan and Central Africa are probably the tallest people, on average, in the world, but the Pygmies, also of Central Africa, are the shortest.They are brown to brown black and some yellow brown in colour. Tall to very short in stature their head form in predominantly long and height varies form low to medium. Face in medium broad to narrow tends to medium high with strong pragmatism. The eyes are brown to brown lack an vertical eyes fold in common. Their hairs are brown black in colour having coarse texture form in light curl to wooly. The nasal bridge is usually low and the form medium broad to very broad the body shape is lateral to muscular and they have both the blood groups of 'A' and 'B'. Negriod race is also having some sub races they are: African negro, Neolithic negro, Negrito. The negroids are largely distributed in Africa.

4.3:LET US SUM UP

In this unit you have understood about the human race and the criteria of classification of human race. Thus basically the human species has been categorized into three races like Caucasoid mongoloids and negroids.

4.4: KEY WORDS

- Race
- Anthropology

4.5 QUESTION FOR SELF STUDY

- What is human race? Classify the major human races?

4.6 FURTHER READINGS

Majid Hussain	:	Human Geography, Rawath publication Delhi
Mallappa. P	:	Human Geography Chethana Publication Mysore
Ranganath	:	Human Geography

Karnataka State Open University
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M.Sc.
GEOGRAPHY
COURSE - 102
CULTURAL GEOGRAPHY

BLOCK - 2

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UNIT-5 RELIGIONS OF THE WORLD AND LANGUAGES OF THE WORLD

Structure

5.0: OBJECTIVES

After studying this unit, you will be able to

1. Analyse the Meaning of Religion
2. Appreciate Major religions of the world and their Cultural traditions customs
3. Distinguish between Origin and diffusion of Major religions of the world.
4. Define the Meaning of Language and the Importance of Language
5. Analyse the development and diffusion of languages.

5.1 INTRODUCTION

Religion is a system of faith, worship, which greatly influence on human behavior. It determines politics, economic, agriculture diet and many aspects of human life.

A great variety of languages spoken today testifier the relative isolation of groups in the past, and the distribution of any language illustrates the pattern of dispersal of its original speakers or their cultural impact on others. It is one of the important force that define and bond human cultures.

5.2 MEANING OF RELIGION

A Religion is a system of beliefs regarding conduct in accordance with teaching found in sacred writings or declared by Authoritative teachers. Most religions involve personal commitment to worship a god or gods.

Religion has been defined differently by various scholars. In the 18th century, Friedrich Schleirmacher defined religion as "feeling of absolute dependence"- absolute as contrasted to other, relative feelings of dependence. William James called religion as "the enthusiastic temper of exposal. Otto defines the essence of religious awareness, a unique blend of fear and fascination before the divine. The main characteristics of religious life are:

- Traditionalism
- Myth and symbol
- Concept of salvation

- Sacred places and objects
- Sacred actions (rituals)
- Sacred writings
- The sacred community (monastic order), and
- The sacred experience.

Religion, like language, is a symbol of group identifies and a cultural rallying point. All societies have value systems-common beliefs, understandings, expectations, and controls-that unite their members, and set them off from other different cultural groups. Such a value system is termed as a religion when it involves system of formal or informal worship and faith in the sacred and divine. A religion may involve prescribed patterns enunciated in the ancient book of Manu. Ethics of conduct and human relations rather than religious rituals are central to the Confucian tradition of china, while the Sikh Khalsa, or holy community, is defined by various rules of observance, such as prohibiting the cutting of one's hair.The food habits, clothing, shelter, and higher needs of peoples are also closely influenced by religious beliefs. For example, religious restrictions on food and drink may affect the kinds of animals that are raised or avoided, the crops that are grown, and the importance of those crops, cattle and animal in the daily diet. The Occupational assignment in the Hindu caste system (Brahmins, Kshatriyas, Vaishyas and sudras) is religious supported. In many countries, there is a state religion, i.e., religion and political structures are intertwined. Buddhism, for example, has been the state religion in Burma, Laos, and Thailand. By their official names, the Islamic republic of Pakistan and the Islamic Republic of Iran proclaim their identity of religion and government behavior, including regular prayer, special rites marking birth, puberty, marriage and death; and the obedience to doctrine established by a religious hierarchy, by tradition, or by sacred texts.

Geographers are concerned with the interaction between religion and the landscape. As one of the most important characteristics of culture, religion-the recognition of God as an object of worship, love and obedience-leaves a strong imprint on the natural environment. Religion may be studied as a geographic process, with a point of origin, pattern of diffusion, and current distribution across the earth's surface.

The relationship between physical environment and religion can also be studied. On the one hand, religious content may be derived from events in the physical environment; on the other hand, religious ideas underlie human transformation of the physical environment. Like other cultural characteristics, religion is a source of pride to the people, an identification of a distinct culture. This intense identification with religion has led to conflicts between different religions and secular political organizations.

Religion may intimately affect all facets of a culture, directly or indirectly. Since religions are formalized views about the relation of the individual to this world and to the hereafter, each carries a distinct conception of the meaning and value of this life, and most contain strictures about what one must do to achieve salvation. These rules become interwoven with the traditions of a culture. For example, for muslims, the observance of Shariat (law) is a necessary part of Islam, submission to Allah. In Judaism, the keeping of Torah, the law of Moses, involves ritual and moral rules of holy living. For Hindus, the Dharma, or teaching, includes the complex laws.

5.3 CLASSIFICATION OF RELIGION

Religion may be classified in a number of ways. Taking the belief in God as the criterion, religion may be monotheistic and polytheistic. The followers of monotheism believe in a single deity, while the followers of polytheism believe in many gods. This classification is, however, not spatially or regionally relevant. Religion has been classified on the basis of areas of origin; for example, Eastern versus Western, or African, Far Eastern and Indian. With proper detail such distinctions may inform us where particular religions had their roots but not reveal their courses of development, paths of diffusion, or current distribution. These theological or historical classifications are not very useful for geographers. Geographers are mainly concerned with the patterns and processes of diffusion and the spatial distribution of religions. Geographers generally classify religions into following

5.3.1 Universalizing Religions

These include Christianity, Islam and Buddhism. These are the faiths that claim applicability to all humans and that seeks to transmit their beliefs through missionary work and conversion. Membership in universalizing religions is open to anyone who chooses to make some sort of symbolic commitment, such as baptism in Christianity. No one is excluded because of nationality, ethnicity, or previous religious belief.

5.3.2 Ethnic religions

Ethnic religions have strong territorial and cultural group identification. One becomes a member of an ethnic religion by birth or by adoption or a complex life style and cultural identity, not by simple declaration of faith. These religions, usually, do not proselytize, and their members form distinctive closed communities identified with a particular ethnic group or political unit. An ethnic religion is an integral element of a specific culture. Judaism, Hinduism, and Japanese Shinto's are the example of ethnic religions.

5.3.3 Tribal or traditional religions

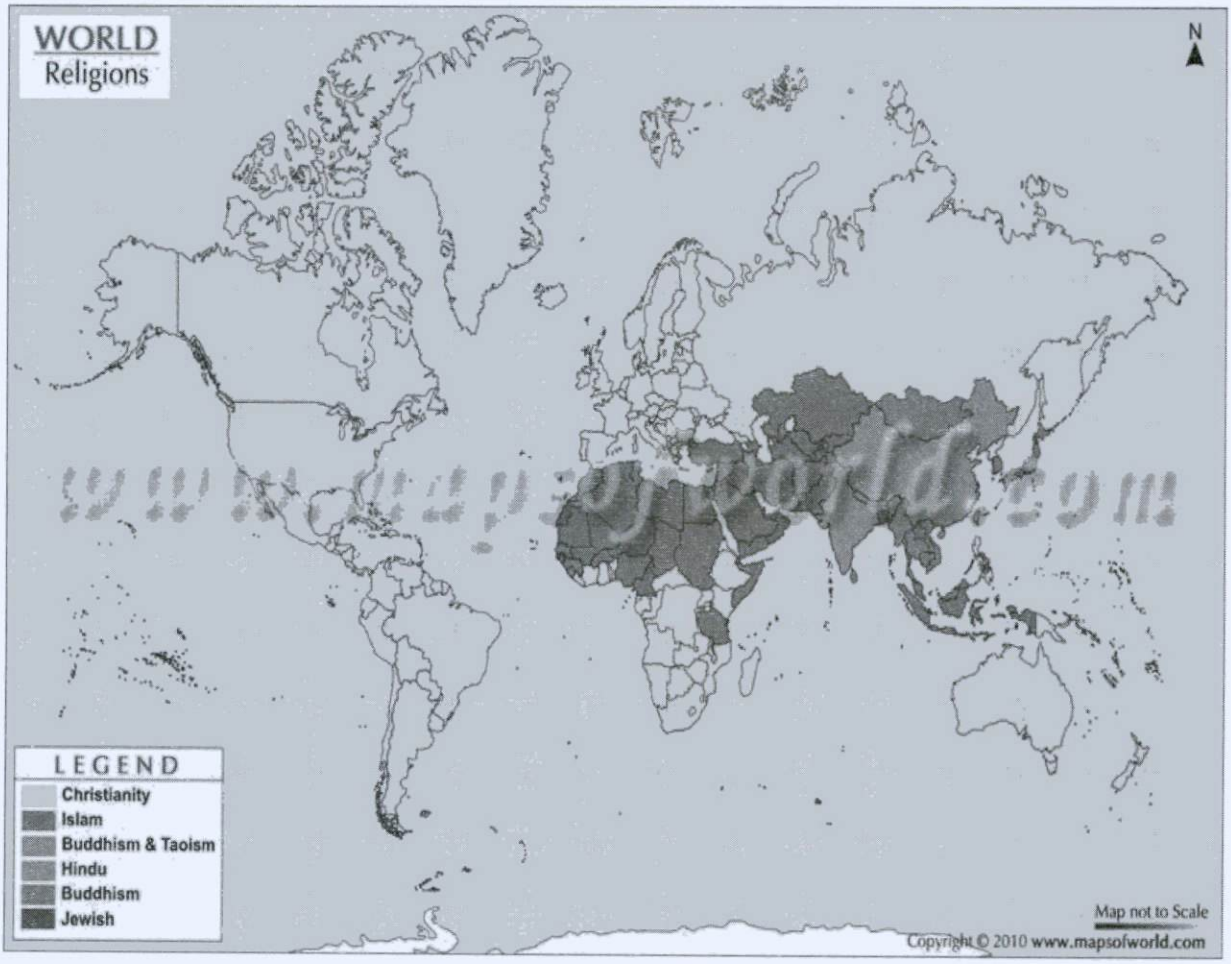
Tribal or traditional religions are the special forms of ethnic religions distinguished by their small size, their unique identity with localized culture groups not yet fully absorbed into modern society, and their close ties to nature. The belief of tribal religion is also known as Animism. The followers of Animism believe that life exists in all objects, from rocks and trees to lakes and mountains. They also believe that the non-living objects like rocks, mountains, trees are the abodes of the dead, of spirits, of gods. Shamanism is a form of tribal religion that involves community acceptance of a Shaman, a religious leader, healer, of worker of magic, who through, special powers, can intercede with and interpret the spirit world.

5.4 MAJOR RELIGIONS OF THE WORLD

5.4.1 Judaism

Judaism has only about 14 million adherents, but it was the first of the great monotheisms-religions that preach the existence of only one God-to emerge in history. Many scholars suggest that Polytheism, the worship of many gods, is a primitive form of religion and that among some peoples polytheism slowly developed into henotheism-the worship of one god without denying the existence of others. Henotheism then evolved into monotheism. Judaism rests on a belief in a pact between God and the Jewish people that they would follow God's law as revealed in the Pentateuch-the first five books of the Old Testament section of the Bible. This covenant was granted to Abraham. Both Jews and Arabs claim descent from Abraham-Jews through his son Isaac, and Arabs through another son, Ishmael. Judaism is divided among a great variety of Orthodox (fundamentalist), Conservative, and Reform sects, or subdivisions of a religion.

Judaism developed historically in the Near East over many centuries. Under the Roman empire, Jewish communities were established outside the Near East, but in A.D. 70 the Romans destroyed the temple in Jerusalem, and the Jews scattered in the Diaspora. During the Middle Ages, many European Christian rulers persecuted and expelled jews, but jews returned to western Europe during the Enlightenment of the 17th and 18th centuries. On their return, they were required to live in segregated communities called ghettoes. Legal emancipation came only in the 19th century. Millions of Jews came to the United States from Eastern Europe at that time, and migration from Russia and surrounding lands continues.



5.4.2 Christianity

The Religion with the largest number of adherents and the most pronounced missionary zeal in the world today is Christianity. It was founded in the first century A.D. by Jesus of Nazareth (Palestine), was accepted as the Christ, the Messiah or Anointed One, by his disciples who were then called Christians. His Crucification in Jerusalem and his Resurrection furnished the main articles of faith and the symbol of the cross. Christianity began as a movement within Judaism. Jesus was a Jew, as were his chief followers- the Apostles. He followers accepted him as the 'Christ'-a chosen one, sent to fulfill God's promise to Abraham, Issac and Jacob. Pagan practices, especially the worship by the Romans of the ceasure (King) conflicted with monotheism and led to persecution of the Christians.

Christianity spread through the Roman Empire, where it became the official religion in the 4th century A.D., with the pope in Rome- the successor of St. Peter, Christ's Chief disciple-widely recognized as the supreme authority in a rapidly emerging church hierarchy. The Eastern church, which began in the Holy Land before there were any Christians in Rome, rejected papal authority in the 11th Century A.D.; and the Eastern Orthodox Church-comprising the historical patriarchal sees of Jerusalem, Antioch, Alexandria, and Constantinople, to which was later added the patriarchate of Moscow-continued as a federation of mutually independent Churches, standing in full communion with one another and united as equals. The ancient Armenian Jacobite, Syrian, Indian, Ethiopians, and Egyptian churches are known, however, as the separated churches of the East.

A further division of Christian religion occurred in the 16th century with the Reformation movements of Protestantism, and Protestantism itself is now divided into many denominations. But the settlement of new continents has carried Christianity in one form or another to almost all parts of the world, and strong movements for Christian reunion are in force.

Christianity is the most widely distributed religion. According to an estimate made in 1987, the total population of Christians was about 1,540 million or 30.6 percent of the world population. Their continent wise distribution being 462.6 million in Europe, 393 million in Latin America, 236 million in Africa, 232 million in North America, about 196 million in Asia and 21 million in Oceania.

Christianity is a universal religion like Islam. The followers of these religions are found in the different geo-ecological settings. The diversity of physical conditions alters the significance of the landscape in forming rituals. Easter, for example, may be related to the agricultural cycle, but Christians in different locations ascribe different significance to the holiday. In Southern Europe, Easter is a joyful time of harvest, while in Northern Europe; Easter rituals were combined with pagan customs celebrating the arrival of spring after a harsh winter. The Christian calendar is even less related to events in the physical environment for people in the Southern Hemisphere, who celebrate Eastern in the fall and Christmas in the summer.

The Christians, especially the Catholics, have a highly developed spatial hierarchy system. The basic unit of geographic organization in the Catholic Church is the diocese. The Catholic world is divided into several thousand dioceses, each administered by a bishop. A diocese is spatially divided into parishes, each headed by a priest. Several dioceses are grouped into a province, headed by a bishop who is designated as archbishop. The archbishops are subordinate to the pope, who is also the bishop of Rome-a dioces.

5.4.3 Islam

Islam means 'submission' or total surrender (to God). It is a universal religion founded by Prophet Mohammad in the seventh century A.D. It emphasizes an uncompromising monotheism and a strict adherence to certain religions practices. All followers of Islam are bound by a common faith and a sense of belonging to single community. According to Islam, God is absolutely unique, omnipotent, omniscient, and merciful. Men are exhorted to obey his will. The Muslim creed consists of five articles of faith:

- Belief in God
- In Angles
- In Quran
- In the prophet, and
- In the Day of Judgment.

All Muslims are enjoined to practice the five pillars of Islam:

1. To recite the profession of faith in God

2. To observe the five daily pubic and collective prayers

3. To Pay Zakat(purification) for the support of the poor,

4. To fast in the month of Ramzan, and to perform Haj (pilgrimage) if physically and financially possible. Islam is one of the most active proselytizing faith in the history of religion. Islam, was carried across Asia and Africa in short time. It swept the southern shores of the Mediterranean, crossed the straits of Gibraltar (Jable-Tariq) into spain and even penetrated into France after the death of Prophet Mohammad (A.D.570-632), the founder of this faith. Almost a thousand years, later, Islamic power penetrated far into Central Europe upto the Walls of Vienna, and when the tide eventually receded, it left behind, particularly in the Balkans, innumerable islands of Muslim communities.

5.4.3a Islamic Sects

The two principal sects of Islam date back to a struggle over rule of the Islamic world that occurred shortly after Muhammad's death. Sunni Muslims accept the tradition (Sunna) of Muhammad's as authoritative and approve the historic order of Muhammad's first four successors, or caliphs. About 85 percent of Muslims worldwide today are Sunni. Most of the others 15 percent are Shia Muslims, or Shiites. They believe that Muhammada's son-in-law Ali was the rightful successor to the Prophet, and they commemorate the martyodom in Muslim civil war of Muhammad's grandson in a battle at Karbala in today's southern Iraq in 680. Through the centuries, difference in ceremony and in law has further differentiated the Sunnis from the Shiites. The ruling family of Saudi Arabia is of the Wahabi sect, a puritanical movement that arose in the early eighteenth century and is the only modern separatist Sunni sect.

Shiites form the majority in Iran, Azerbaijan, and in Iraq and important minorities in Kuwait, Lebanon, Bahrain, Syria, Saudi Arabia, and Pakistan. Animosity between sunni and shia can be fierce. Countries that contain significant shares of both sects are split by the enactment into national laws of either Sunni or Shiite interpretations of Muslim religious teachings, and several, including Lebanon and Pakistan, have suffered civil disturbances between the two groups. Even the hajj to Mecca has regularly been disrupted by violent clashes between Sunnis and Shiites.

5.4.4 Hinduism

Hinduism is the most ancient religious tradition in Asia. The oldest Hindu sacred texts (the Vedas) date to about 1800 B.C., but the religion originated somewhere in Central Asia long before that. It entered the Indian subcontinent with the coming of Central Asian peoples about the time of the writing of the Vedas. Today it is confined almost exclusively to India and Nepal; in Nepal it is the official state religion.

Hindus believe in one supreme consciousness, Brahman, whose aspects are realized in three deities: Brahma, the creator; Vishnu, the preserver; and Siva, the destroyer. These are coequal, and their functions are interchangeable. All other Hindu 'gods, ' saints, or spirits are emanations of Brahman.

Hinduism classifies people in a hierarchy of classes called castes. The four main casts are

1. The Brahman, or Priestly caste;
2. The Kshatriya, or warrior caste;
3. The Vaisya, or tradesman and farmer caste;
4. The Sudra, or servant and laborer caste.

Each of these is split into hundreds of subcastes. Many castes are defined by occupation. People are expected to mix socially, marry, and stay in the caste into which they were born. A group of people called untouchables (Dalit) is considered so low that their status is below the formal structure of the four castes. To some degree caste discrimination still structures Indian life, but it was legally abolished in the Indian Constitution of 1950, and an untouchable, K.R.Narayanan, was even sworn in as president of India in 1997. (India's president is elected by parliament, not by popular vote.)

Hindus believe in reincarnation-that is, individual rebirth after death. The caste into which you are born is not haphazard, but depends upon your behavior in an earlier life. This teaching, called Karma, discourages ambition, because only by docilely keeping to your place in this life can you hope to enjoy a better position in your next life. The goal of Hindus is liberation from the cycle of death and rebirth.

The followers of Hindu religion organize their space in a particular manner. The Hindu holy places comprise a variety of features of the physical environment. As an ethnic religion of India, Hinduism is tied to the holy character of much of the Indian landscape. The most holy sites in India are river banks or coast lines. Moreover, Hindu holy places can be organized into a hierarchy. Some places have a large range and attract pilgrims from the entire country, other shrines are important to the local but are not frequently visited by people from other regions. Haridwar, Badrinath, Amarnath, Puri, Venkateshwara (Tirupat i), etc are the first order shrines which attract pilgrims from all over the country. Since Hinduism has no central authority, the relative importance of shrines is established by tradition, not by doctrine.

There are numerous pilgrimages centers of Hindus. The Hindus consider a pilgrimage (tirtha) as an act of purification. Although not a substitute for meditation, the pilgrimage is an important act in achieving redemption. The sacred places attract Hindus from all over the country, while less important shrines attract primarily nearby pilgrims.

Among the Hindus, most of the religious functions are performed at the home, within a family unit, while temples house shrines to particular gods rather than congregational worship. There are numerous temples of Hindus, each housing one or more gods, although a god may have more than one temple: The Hindu temple does not need a large closed interior space for a congregation to sit in. The gods may be present in the temple in the form of some images or symbolic artifacts, stored in dimlylit interior rooms. The remainder of the temple may be devoted to space for ritual processions. The temple land is usually demarcated by a wall.

Hinduism has no centralized structure of religious control. It is also a highly autonomous religion with worship primarily a private or household occupation. Ideas, however, are transmitted within the Hindu world through pilgrimages, religions and traditional writings.

5.4.5 Buddism

Siddhartha Gautama (c.563-483 B.C.) was a Hindu Prince born in today's Nepal who, through meditation, achieved the status and title of Buddha, or Enlightened One. He taught Four Noble Truths:

1) Life involves suffering,

2) The cause of suffering is desire,

3) Elimination of desire ends suffering, and

4) Desire can be eliminated by right thinking and behavior. This cessation of suffering is called Nirvana, or total transcendence.

As Buddhism diffused out of India, sects and schools arose. The Theravada school ("doctrine of the elders") diffused to the south. This school centers on the idea of a monk striving for his own deliverance. Mahayana Buddhism (the "great Vehicle" because it carries more people to nirvana) diffused northward. Mahayana idealizes the concept of the bodhisattva, someone who merits nirvana but postpones it until all others have achieved enlightenment. In Bhutan, Tibet, and Mongolia, Buddhism evolved a special form called Lamaism, which is known for its elaborate rituals and complex priestly hierarchy. Chinese Buddhists produced a new theory of spontaneous enlightenment, called Chan. This diffused into Japan as zen.

Buddhism has several hundred million followers, but its adherents are hard to count because it is not an exclusive system of belief. Its practice has declined in India, but today it is the state religion in Thailand and Sri Lanka, and it may achieve that status in Mongolia. Buddhist philosophy has also won considerable influence in the modern Western world. Much popular "New Age" philosophy derives from Buddhism.

In China, from the first century A.D. onwards, Buddhism became mingled with the already established religions of Confucianism and Taoism. Confucius' Philosophy, which was of little influence in his own lifetime (551-479 B.C) had been elaborated by subsequent generations of scholars both to provide a moral basis for the political structure of Imperial China and to embrace the hallowed forms of ancestor worship which have always been practiced in China: Taosim, based on teachings attributed to Lao Tse in the sixth century B.C., taught a quietest religion of living in the way (Tao) of nature.

In Jap, from the sixth century A.D. onwards, Buddhism became mingled with the ancient religion of Shinto, a nature worship of a multiplicity of deities honored at shrines like that of Amaterasu, the sun Goddess, at lse, and many Japanese still attend the places of worship of both faiths.

The sacred structure of Buddhists is known as Pagoda. The pagoda is a prominent and visually attractive feature of the Buddhist and Shintoist landscape. Many pagodas have an extremely elaborate and delicate appearance, with tall, many-sided towers arranged is a series of tiers, balconies, and slanting roofs. Pagodas are not designed for congregational worship. Individual prayer may be undertaken in the pagoda but is more likely to take place in an adjacent temple or remote monastery, if not at home.

5.4.6 Sikhism

Sikhism is an offshoot of Hinduism based on the teachings of Guru (teacher) Nanak (c. 1469-1539). Nanak tried to reconcile Hinduism and Islam, teaching monotheism and the realization of God through religious exercise and meditation. Nanak opposed the maintenance of priesthood and the caste system. Under a series of gurus, the Sikhs had their own state in northern India, but they were eventually conquered by the British. Many Sikhs dream of the restoration of an independent Sikh state. The Sikh's holy temple is in the city of Amritsar in the Indian state of Punjab. This state is largely Sikh, and it might provide a territorial base for independence.

5.5 CHINESE AND JAPANESE RELIGIONS

In china and Japan, important ethnic religious are found. Confucianism, Taoism and Shantoism are the examples of such ethnic religions. The Chinese belief systems address not so much the hereafter as the achievement of the best possible way of life in the present existence. They are more ethical or philosophical than religious in the pure sense.

5.5.1 Confucianism

Confucius (Kung Fu-tzu), who lived from 551 to 479 B.C., was a ruler in the province of Lu. He profoundly influenced the social and intellectual life of china through his writings, which prescribed a series of ethical principles for the conduct of public life, emphasizing the importance of tradition and moral obligations. He emphasized the importance of proper conduct between ruler and subjects and between family and members. The family was extolled as the nucleus of the state, and filial piety was the loftiest of virtues. There are no churches or clergy in Confucianism. Its founder stressed ancestor worship as a mark of gratitude and respect. After his death, the custom was expanded to include worship of Confucius himself in temples erected for that purpose. That worship ecame the official state religion in the second century B.C. for some 2,000 years, i.e., up to the twentieth century it formed the basis of the belief system of china.

5.5.2 Taoism

Taoism was founded by Lao Tze (604-517 B.C)- a contemporary of Confucius. He was also a ruler. Lao's writings emphasized the mystical or magical aspect of life. According to this belief, everything is not knowable. He asserted that myths and legends develop to explain events; and the universe is not ultimately the subject of rational analysis. According to Tao philosophy, the eternal happiness lies in total identification with nature and deploring passion, unnecessary invention , unneeded knowledge. Beginning in the first century A.D., this philosophical naturalism was coupled with a religious Taoism involving deities, spirits, magic, temples, and priests.

5.5.3 Shintoism

Shintoism is an ethnic religion of Japan. It developed out of nature and ancestors worship. The rulers of Japan recognized shintoism as the state religion of Japan until the Second world war. It observes a complex set of deities, family spirits and the divinities residing in rivers, trees, certain animals, and particularly the Sun and Moon. One of the Shito's elements was the worship of the Japanese emperor as a god, a practice stopped only after the country's defeat in the Second world war. Shintoism was thus as much a political cult as a religion and in cultural sense all Japanese are Shintoists. Many Japanese profess adherence to both Shintoism and Buddhism. In Shintoism, the centres and places of worship are the numerous shrines and temples in which the gods are believed to dwell and which are approached through ceremonial torii, or gateway arches.

5.6 LANGUAGES OF THE WORLD MEANING

Language is a set of words, plus their pronunciation and methods of combining them that is used and understood to communicate within a group of people. In other words language is a system of conventional spoken or written symbols by means of which human beings, as a member of social group and participants in its culture, communicate. Language may also define as an organized system of spoken words by which people communicate with each other with mutual comprehension.

5.6.1 Dialect

The number of different languages recognized varies with the accepted definition of languages. The term language is usually reserved for major patterns of difference in communication. Minor variations within languages are called dialects. But scholars do not agree on the amount of distinctiveness necessary for a pattern to be considered a language. Some scholars, for instance, accept Danish, Swedish, and Norwegian as distinct languages, but a speaker of any one of them can understand the others. Therefore, other scholars insist that these are three dialects of one language. A standard language is the way any language is spoken and written according to formal rules of diction and grammar, although many regular speakers and writers of any language may not always follow all those rules. A country's official language is the one in which official records are kept and government business is normally conducted.

A pidgin language is a system of communication that has grown up among people who do not share a common language, but who want to talk with each other. Pidgins are marginal or mixed languages, and they usually disappear after a few years or else they evolve into a creole. A Creole is a pidgin language that has survived long enough to become a mother tongue. That usually takes a generation or two. Examples of creoles include Gullah, the English-based language used among some African Americans living along the U.S. Southeast coast; Haitian French Creole; Guyanese creole; and Seychellois, a French-based creole spoken on the Seychelles islands.

5.6.2 Lingua France

A Lingua franca is a second language held in common for international discourse. Today English is the world's leading lingua franca. Air controllers and pilots in international aviation, for example, all speak English. Other languages have served as lingua francas in the past. Latin long served throughout East Africa. Swahili developed among black peoples and in communication with Arab traders, so it has many Arab words. Today it is an official language in Tanzania and Kenya.

Individual languages change through time, but religious classics or classics of literature can exert a powerful force for stabilization. In English, for example, the works of William Shakespeare and the 1612 King James translation of the Bible have molded the language, yet parts of even these works may be difficult for many English speakers to read today.

5.7 LINGUISTIC GEOGRAPHY

The study of different dialects across space is called dialect geography, or linguistic geography. Dialects usually diverge more in the way they are spoken than in the way they are written. This is because writing is often widely dispersed, but sounds are localized only among a group of people who speak together, called a speech community. Probably no student of dialects has ever developed the ability of the fictional Henry Higgins in G.B.Shaw's play Pygmalion: "I can place any man within six miles. I can place him within two miles in London, Sometimes within two streets." To this day, however, there are distinct dialect regions across the United States.

Sometimes researchers survey speech and draw lines around places where speakers use a linguistic feature in the same way. These boundary lines are called Isoglosses. Isoglosses frequently parallel physical landscape features, because physical features often act as barriers to human migration and diffusion. For example, the Pyrenees mountains divide spain from France, and the Pripet marshes separate Belarus from Ukraine. By contrast, languages often diffuse quickly across broad lowlands, and languages have historically diffused along river valleys or other routes of trade and transportation.

5.8 THE WORLD'S MAJOR LANGUAGES

Most scholars agree that there are more than 3,000 distinct languages, at least 30 of which are spoken by 20 million or more people each as a first language. About 50 percent of the entire world's people, however, speak one of the 12 major languages listed in the table. The language with the most speakers is Mandarin Chinese (Guoyo), with about 885 million native speakers. English is the primary language of about 350 million people worldwide, and it is either the only official language or one of several official languages in about 50 countries. Arabic derives special transnational importance as the language of the Koran, the sacred scriptures of Islam. The Koran has been translated, but Muslims are still encouraged to study the original. Arabic is the official language in some 20 countries today.

In contrast to these widespread languages, some languages are extremely local. Linguists have discovered fully developed languages in New Guinea spoken by only a few hundred people in certain valleys. These languages have developed in total isolation over long periods of time. They are utterly incomprehensible to people just 20 miles away in the next valley.

5.9 THE DEVELOPMENT AND DIFFUSION OF LANGUAGES

Any isolated group of people develops a language of its own. This language describes everything that those people see or experience together. If groups of these people break away and disperse, then each group discovers new objects and ideas, and the people have to make up new words for them. After thousands of years, the descendants of each of these breakaway groups have their own language. Each descendant language has a vocabulary of its own, but each also retains a common core of words from that earliest shared language. The ancestor that is common to any group of several of today's languages is called a Protolanguage. The languages that are related by descent from a common protolanguage make up a language family.

5.9.1 The Indo-European Language Family

In 1786 the English philosopher Sir William jones first pronounced his theory that a great variety of languages spoken across a tremendous expanse of Earth demonstrate similarities among themselves so numerous and precise that they cannot be attributed to chance and cannot be explained by borrowing. These languages, then, must descend from a common original language. The group of languages from identified by Sir William is called the Indo-European family of languages, and about half of the world's peoples today speak a language from this family. Sifting through the vocabularies of all Indo-European languages yields a common core vocabulary, which is the common ancestor of these languages, Proto-Indo-European.

Jacob Grimm (1785-1863), one of the brothers who collected children's fairy tales, formulated rules to describe the regular shifts in sounds that occurred when the various Indo-European languages diverged from one another. There is, for example a regular sound shift between words beginning with "P" in Latin and "F" in Germanic languages (as in pater and father). These rules are known as Grimm's Law.

The Vocabulary of Proto-Indo-European tells us a surprising amount about how proto-Indo-European society was organized and how the people lived. It also hints at the language's hearth. Reconstructed proto-Indo-European has words for distinct seasons (one with snow), woody trees (including the beech and the birch), bears, wolves' beavers, mice, salmon, eels, sparrows, and wasps. These things can be found together around the Black Sea, but Proto-Indo-European also includes words borrowed from the languages of the Near East. The word for wine, for instance, seems to descend from the non-Indo-European Semitic word Wanju. Thus, the hearth area for Indo-European languages was probably in today's Turkey, some 8,000 years ago. Archaeologists disagree as to whether proto-Indo-European diffused quickly, carried by warriors, or slowly, carried by individual farmers.

Hunting common Indo-European roots of words provides a fascinating study. The Proto-Indo-European root aiw, for example, which means "life" or 'the vital force," descended into Hindi as ayua, "life," but it also shows up as aetas in Latin, aion in Greek, ewig in German, and the words ever and age in English. Words that are related appear in surprising places. Maharajah, for example, a Hindi word for a great ruler, may seem

exotic, yet maha is a distant cousin of the English words "major" and "magnitude". Rajah is a distant cousin of the English "reign" and "royal." In this case the cousins clearly look or sound alike, so they are called cognates. One must never assume any connection between two words from different languages; however, until it can be proven that they share a common root. The study of word origins and history is called etymology.

Proto-Indo-European provided the basic stock for all Indo-European languages, but that does not mean that one ethnic or racial group spread out to life where all these peoples are today. Sometimes a few Indo-Europeans conquered and imposed their language on a much larger group of people that had previously developed a language of their own-as occurred throughout Latin America and Africa. Sometimes peoples adopted Indo-European just to be able to communicate with Indo-Europeans. Not everyone who speaks English in the world today necessarily has an ancestor from England.

5.9.2 Germanic Family

The Germanic language, including English, constitute on branch of the Indo-European language family. It has three branches, i.e., North Germanic, East Germanic and West Germanic.

The North Gemanic branch inclides the Scandinavian languages (Danish, Swedish, Icelandic, Faroces). The East Germanic language (Gothic) also existed in history, but they are now extinct, i.e., the languages are no longer spoken in daily activities by anyone in the world. The main Eastern Germanic language was Gothic. It was used to be spoken in Crime (Ukraine). The language died because the descendants of Gothic tribe were converted to other languages through political dominance. The West German branch of the Indo-European language includes German, Yiddish, Anglo-Saxon, Modern English, Old Saxon, Dutch and Flenish languages.

Out of the West Germanic languages, English is the most widely language. It has its origin around 1,500 years back. The land now known as England was invaded by the Angles, Jutes and Saxons. The name England is derived from the Angles and the English language is a fusion of languages spoken by the three tribes. English is thus a Germanic language and it shares many structural similarities with other Germanic languages. Prior to the invasion of British Isles by Angles and Saxon tribes, Celtic was the main language of the peoples but later on they were pushed to the remote areas of Scotland and Wales.

English was diffused around the world through the establishment of colonies in North and South America, Australia, New Zealand Africa and Asia. At present, English is the Lingua Franca, one of the important languages of international communication.

5.9.3 The Latin Linguistic Family

The Latin linguistic group is also known as Romance languages. The main languages of this group are French, Italian, Provencal, Spanish, Portuguese, Catalan and Romanian.

The rise in importance of the city of Rome was paralleled by a spread of the Latin language. As the Roman armies occupied the greater parts of Europe and Asia Minor, they brought the Latin language with them. The languages spoken by the natives were extinguished of sup-pressed in favor of the conquerors.

The five most important contemporary Romance (Latin) languages are Spanish, Portuguese, French, Italian and Romanian. An examination of a physical map of Europe provides ample evidence for the development of separate Romance languages, because the Spanish, Portuguese, French and Italian language regions are separated from each other by mountains. In fact mountains serve as a strong barrier to communications between people living on opposite sides.

Like English, the Latin languages, especially Spanish and Portuguese, have achieved world-wide prominence because of the colonial activities of their speakers. Over 80% of the speakers of these two languages live outside of Europe, mainly in Central and South America. French is the language of France and it has been adopted as a national language in Switzerland, Canada and several countries of Africa. Italian language has its major concentration in Italy, Sicily, Switzerland and some islands in the Mediterranean Sea, while Romanian is the official language of Romania.

5.9.4 Balto-Slavic Language

The other Indo-European branch with large numbers of speakers is Balto-Slavic. The Slavic languages are generally divided into east, west and south. As late as the seventh century A.D., the Slavic languages were particularly identical, but differences developed as the Slavic tribes became separated.

The most widely used Slavic languages are eastern ones, primarily Russian which is spoken by about 240 million people, including 80% of the Russian population of the Russia. Russian is one of the five official languages of the United Nations. The other two important Balto-Slavic languages are Ukranian and Byelorussian (white Russian).

The other west Slavic languages include Polish, Czech and Slovak. The south Slavic languages include Bulgarian, Serbo-Eroation, Slovenc and Macedonian. The differences among the various Slavic languages are relatively small with a considerable amount of mutual intelligibility existing among speakers of the different languages.

5.9.5 Indo-Iranian Language

The Indo-Iranian family includes more than one hundred individual languages, spoken by about 800 million people. The branch can be divided into an eastern group-Indic-including speakers primarily in Bangladesh, India and Pakistan; and a western group-Indian-used by about 50 million people.

Most residents of Bangladesh, India and Pakistan speak an Indic language. In Pakistan, the principal language is Urdu, while in India Hindi is the national language and it is spoken mainly in Northern India. The people of Bangladesh, West Bengal and its adjacent areas speak Bengali.

The main cultural distinction of nearly 900 million people of India is language. India has several hundred languages and eighteen official languages (recognized in the constitution). In general the Indo-European languages are spoken in the Northern India, while languages of Dravidian family are used in the south. Languages of the Sino-Tibetan family are found in the north-east and south-east Asian languages are found in Meghalaya, Chotanagpur Plateau and central high lands of India.

5.9.6 Iranian languages

The western part of Asia uses Indo-European languages as well, including Farsi in Iran, Pashto in Afghanistan and Pakistan and Kurdish (used by Kurds) in Iran, Iraq and Turkey. These languages are written with Arabic letters.

The language spoken in Sri Lanka is Sinhalese which also belongs to the Indo-Iranian family. The Sinhalese-speaking Sri-Lankans are Bud-dhists, whereas the Tamil-speaking are Hindus of Muslims.

5.9.7 Sino-Tibetan Languages

Sino-Tibetan is the language family encompassing the languages of the people of Republic of China (the world's most populous nation) as well many smaller countries in South-East Asia. The most important language of China is Mandarin, which is spoken by about three-fourth of the total population of China. It is the official language of the United Nations. There are four other languages spoken in China, namely Cantonese, Min, Wu and Hkka. The relatively small number of languages in China in comparison to India, for example, is source of national strength and unity.

In addition to the Chinese languages, the Sino-Tibetan language family includes a second branch, known as Tibeto-Bruman, used mainly in South-East Asia. The tow main languages of the Tibeto-Burman language are Thai and Burmese. Moreover, Japanese and Korean are the other important languages which have been substantially influenced by the Chinese languages.

5.9.8 Semito-Hametic Languages

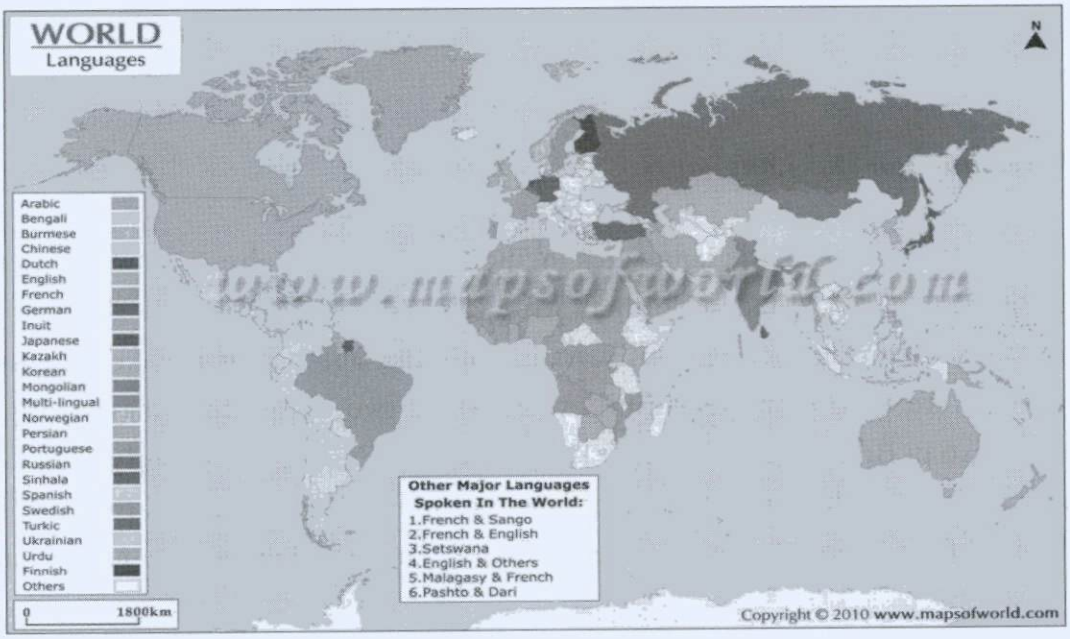
The Semito- Hemetic languages include Arabic and Hebrew, as well as a number of less-used languages found in Northern Africa and South-Western Asia. The international significance of this language family transcends the number of speakers because the languages were used to write the hiliest books of two of the four major religion the Judeo-Christian Bible and the Islamic Holy Quaran. The most frequently used language in this family is Arabic and official language of nineteen countries of South West Asia and North Africa, from Morocco to the Arabian Peninsula. Hebrew, as a native language,

is spoken by only about three million people, mainly in Israel. Most of the Old Testament was written in Hebrew. Hebrew become extinct as a language in daily activity in the forth century A.D. but it is being revived after the creation of Israel in 1948.

5.9.9 African Languages

No definitive count has been made of the number of different languages in Africa, nor is there agreement concerning the proper classification of the languages into the families. Nearly 1,000 distinct languages as well as several thousand named dialects, have been accounted in Africa. It has, however, been estimated that only approximately forty of the language are used by more than one million speakers. The language picture is relatively clear in the northern part of Africa, where Arabic is widely used although in a variety of dialects. In the south of the Sahara the pattern is complex and less easily classified. The dominant language family of the south of Sahara is the Negro-Congo which has six branches, namely, Mande, Gur, Kwa, Adamawa and Benue-Congo.

The Nilo-Saharan languages are used in North central Africa, just north of the Niger-Congo area. The Khoisan language family is found in South-Western Africa. In Nigeria alone, there are more than 200 languages, the most widely used language is Hausa. Yoruba and Ibo are the other important languages of Nigeria. In Tanzania and East African countries, Swahili is the official language. The Swahili language was originally developed by the Arab traders and has Arabic influence. Swahili is one of the few languages with extensive literature



5.10 LET US SUM UP

In this unit you have studied about different religions of the world. Religion in one of the important components of the spatial and cultural variations. Each religion originated in one place and spread out from there, but today communicants of various religious mingle around the globe and religious affiliations cut across the lines of politics, race, language and economic status.In this unit you have studied about the languages, it is a great force of socialization, thus it is an essential element of human geography. Language, either in written or oral form in the most common type of communication. Although language is studied in Linguists, being students of geography you have studied the spatial and ecological aspects of languages.

5.11 KEY WORDS

- Pentateuch- The first five books of old Testament section of Bible
- Monotheism: Religious to preach the existence of only one god.
- Lamaism: The special form of Buddhism in Bhutan, Tibet, Mangolia.
- Dialects: Minor variations within the Languages
- Lingua France: A language held in common for international discourse
- Etimology: A study of world origin and history.

5.12 QUESTIONS FOR SELF STUDY

1. Discuss the origin and spread of Christianity in the world.

2. Write a note traditions customs and origin and Spread of Islam religion in the world.

3. Write a note Indo European languages.

4. With suitable examples explain how language influences on the cultural diversity.

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UNIT: 6 CULTURAL DIVERSITY

Structure

6.0 OBJECTIVES

This unit intended to provide you all the necessary in formation about cultural diversity.

After studying this unit, you will be able to :

1. Interpret the Nature of Cultural diversity in the world.
2. Define the Scale of Cultural Variations.
3. Analyse Origin and discernment of cultural elements .
4. Identify the Modern development and its impact on cultural diversity.

6.1 INTRODUCTION

Cultural diversity is the variety of human societies or cultures in a specific region, or in the world as a whole. The term is also sometimes used to refer to multiculturalism within an organization. There is a general consensus among mainstream anthropologists that humans first emerged in Africa about two million years ago. Since then they have spread throughout the world, successfully adapting to widely differing conditions and to periodic cataclysmic changes in local and global climate. The many separate societies that emerged around the globe differed markedly from each other, and many of these differences persist to this day .As well as the more obvious cultural differences that exist between people, such as language, dress and traditions, there are also significant variations in the way societies organize themselves, in their shared conception of morality, and in the ways they interact with their environment. By analogy with biodiversity, which is thought to be essential to the long-term survival of life on earth, it can be argued that cultural diversity may be vital for the long-term survival of humanity; and that the conservation of indigenous cultures may be as important to humankind as the conservation of species and ecosystems is to life in general. Does culture have a specifically geographic pattern? To answer this basic question, we shall take just one of the many elements in a culture-language- as a proxy for the multitude of other mental, social, and material artifacts that might suggest themselves. But the questions we shall ask will be general ones about spatial stability, order, and change that may provide a basis for your own analysis of other cultural elements that may interest you more.

6.2 THE SCALE OF CULTURAL VARIATIONS

Language is the essential linking device in human cultures, enabling members of a group to communicate freely with each other. Just how many different languages are spoken today depends partly on our definition of language. If we leave out minor dialects, there are still around 3000 different languages in current use. At least another 4000 were once spoken but have now gone out of use.

One of the most useful ways of classifying languages is according to the number of people who speak them. Global languages are spoken by very many people indeed; local languages are spoken by very few. English, a global language, is the primary tongue of around 350 million people (almost 1 out of every 10 persons in the world) and serves as a second language for many more. However, the most widely spoken language (though those who speak it are more concentrated spatially) is Mandarin Chinese, which, with its many dialects, is the language of about 600 million people is East Asia. The principal languages are spoken on the Indian subcontinent. Were we to rank the world's languages, putting the global ones like English and Chinese at the top, these would come about halfway down the list. At the bottom of the list would be the really local languages. Research in New Guinea has revealed some wholly distinct languages (uncomprehended by neighboring groups) confined to single valleys, spoken and understood by only a few hundred people, and having a spatial extent of less than 65 km^2 (25 mi^2). Actually, a few languages are spoken by a disproportionately large percentage of the human population. The top 14 languages are spoken by 60 percent of the world's people. At the other extreme, the bottom 500 are divided among no more than 1 million people in the remote parts of Asia, Africa and Australia.

The Origin and dispersal of cultural elements

Language illustrates clearly a second theme in cultural geography-the origin and dispersal of cultural elements. The questions we must ask to understand this process are about the relation of one language to another.

Extensive linguistic research has revealed that many different languages seem to have emerged from a common stock. For example, it is possible to trace back Indian languages in the northeastern United States like Cayuga, Seneca, and Tuscarora to a common Iroquoian stock which has some linguistic connections with Sioux language

groups further west. However, the language group whose evolution we know most about is the Indo-European family of languages. A wealth of written records in these languages has allowed us to unravel slow linguistic drifts over the centuries. Despite the fact that these languages are spoken by half the world's people they still have many simple, basic words in common. The English word "mother," for example, is "Mutter" in closely related German. It is also recognizable in quite different subgroups-in the Romance group, in the Spanish "Madre", in the Balto-Slavonic group, in the Russian "Mat," and in the Indo-Iranian group, in the Sanskrit "mata." Even in Greek, whose position in the family language tree is still hotly debated, mother is "meter."

The distilling out of the main language groups shown in was a slow process, taking over tens of thousands of years. Changes over a much shorter period are noticeable in dialects within a language, but languages themselves are stable enough to provide useful spatial signals of the emigrational history of various groups.

6.3 FORCES OF SPATIAL CHANGE

Cultural patterns are clearly not static in either time or space. The proportions of the world's population speaking each of the major languages is changing, and their spatial distributions are waxing or waning. Patterns of language are changed not only by the demographic tides of birth and death-which affect mainly our "first," or "native," language-but by the aggressive spread of second languages. Currently, the proportion of English-speaking persons is rapidly increasing in the urbanized and "westernized" world. The main forces are at work hammering out of these changing linguistic patterns.

At the same time as global languages are spreading, some small languages are slowly dying out. The Celtic languages of Western Europe, for example, have been losing ground for centuries to the more aggressive English and French tongues. Celtic languages were once spoken in the western parts of the British Isles, the Brittany peninsula in France, and northwest Spain. One of the Celtic languages-Cornish-was confined to the extreme southwest corner of England. Until the 15th century, Cornish was spoken over most of the country of Cornwall; but by 1600 it was heard only in the extreme west. The mining industry brought an increasing number of English-speaking outsiders into the area, and by 1800 the language was virtually dead. The last Cornish speaking person died in the 1930s. Even much stronger Celtic languages like Welsh are now confined to

a part of their original area. Only in Ireland, where Irish (also called Gaelic, or Erse), has been revived and taught in the schools as part of a program to stimulate the national sense of identity, has the language held its ground.

6.4 GEOGRAPHIC IMPACT OF CULTURAL VARIATIONS

Cultural variations have an intrinsic fascination. Since culture is a distinctively human characteristic, any geographer trying to understand the mosaic of world regions must emphasize its cultural variety. In addition, geographers are concerned with cultural variations because of their important secondary impact on a wide range of relations between man and his environment.

We can illustrate this theme by taking a second cultural element (religious beliefs) and tracing its impact on two topics of general interest:

1. Attitudes toward the use of resources and
2. Attitudes toward innovation.

6.5 SPATIAL VARIATIONS IN RELIGIOUS BELIEFS

Religion is a central; some would argue the central, element in man's cultural differentiations. Each of the world's main religions has a distinctive geography. Christianity's 1 billion adherents are located largely in Europe and the Near East, the Americas, and Australia. Islam has diffused from its birthplace in western Arabia through the northern half of Africa, central Asia, and India, and into Indonesia. Hinduism and Buddhism are highly localized, the former being largely confined to the Indian peninsula and the latter to East Asia.

We can, of course, divide each major religion into its various sub-groups. If we examine the Christian subgroups within the United States, we find a strong zonal pattern. The Roman Catholics are strongly represented in New England and the industrial Northeast; the Baptists in the southern states and Texas; the Lutherans in Wisconsin, Minnesota, and the Dakotas; the Mormons in Utah. Even within a metropolitan area geographic differences in religion may occur, with Christian protestant churches most frequent in the wealthy suburbs.

Why are these variations important in determining the cultural mosaic of the world? Religion's role in group organization, its close relationship to politics and the state, and the attitude of churches toward change and development are part of the answer. Most of the great political conflicts of world history have had a religious basis, and lines of conflict (like those between Israel and Egypt of within Northern Ireland) army still be drawn up along religious divides. Some aspects of religions role in determining geographic divisions will be considered in our treatment of boundary conflicts. Here we shall confine ourselves to illustrating its impact in two more immediately relevant areas.

6.6 IMPACTINNOVATIONANDMODERNIZATIONONCULTURALDIVERSITY

Religions of most kinds lay heavy emphasis on continuity, tradition, and strict adherence to long-established patterns of behavior. They have acted, and continue to act, as a vital stabilizing influence, or depending on one's point of view-an inhibiting drag on change.

Religion is often held to be a major factor inhibiting the spread of family planning practices. The moral values attached to the human fetus in Roman Catholic doctrine serve as major barrier to the spread of abortion and certain contraceptive methods. This barrier may operate at the individual and family level for members of the Catholic faith or may become a matter of national policy in countries where there is a strong link between the Catholic Church and the state. Thus contraceptive devices are banned in Ireland, and different attitudes are taken on abortion laws in various states of the United States.

It is difficult to determine the importance of these attitudes from a strictly demographic viewpoint. Population-control practices are clearly described in the Old Testament and in Egyptian wall paintings dating from 5000 B.C. there is ample evidence that human groups throughout history have been able to control family size when this was considered desirable. Attitudes toward what is the most desirable family size are demonstrably more important than which birth-control method is followed. Thus in Europe, a continent with lower birth rates than any area of comparable size in the world (generally about 8 thousand), there is no major difference between Catholic and non Catholic population at the national level. Countries in which contraceptives and birth control information are banned or restricted have birth rates just as low as those where both are freely available.

In other areas of human behavior, the influence of religious beliefs on the acceptance of innovations is more clear. Let us take a specific regional example. About 20,000 of the world's 370,000 Mennonites follow the Amish religious code. The Mennonites emerged in the early sixteenth century in Switzerland as a nonconformist branch of the Protestant church, with half their numbers in North America today. The Amish represent an extremist breakaway from the Mennonite movement and are today concentrated in farm communities in certain countries of Pennsylvania and Indiana. Located in the midst of the most highly modernized and swiftly changing regions of the world, Amish communities stand out as islands of tradition. Services are conducted in Pennsylvania Dutch (Palatinate German with some English mixed in), traditional plain clothes continue to be worn, telephones and electric lights are shunned, and the horse and buggy continue to serve as a means of transport instead of the all-pervasive automobiles.

6.7 LET US SUM UP

In this unit we discussed the scale of cultural variations, forces of spatial change, origin and dispersal of cultural elements, cultural variations by impact of Geographical aspects. And also, discussed about the spatial variations in religious beliefs. In the end, the impact innovation and modernization on cultural diversity

6.8 KEY WORDS

Linguistic, Biodiversity, Westernized, Protestant.

6.9 QUESTIONS FOR SELF STUDY

1. Briefly explain with example the cultural diversity of the world.
2. Explain the elements of cultural diversity.

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UNIT-7: CULTURAL REALMS OF THE WORLD

Structure

7.0 OBJECTIVES

After Studying this unit, you will be able to

1. Analyse the cultural realm.
2. Define the Nature of different cultural realm and their spatial extent.
3. Identify the various cultural realms of the world.

7.1 INTRODUCTION

Every individual is distinct and unique. But he is also a member of many groups, whether these actually exist as organizational units. The term cultural realm means a large area that has fundamentally unity in the composition, arrangement and integration of traits, which distinguishes it from other cultural realms. In the wider since type of economy, forms of settlements, pattern of population change all these are part of culture. While classifying the cultural realms of the world we face many problems like Criteria for defining the regions, date line of the presentation, Scale of investigation and regional boundaries.

7.2 DELIMITING CULTURAL REALMS

Dividing the world into cultural realms raises the same problems associated with defining regions of any type or size: the location and nature of boundaries, the criteria to be used in defining the boundaries and region, the scale of the investigation, and the date of region represents. Boundaries of a region of any type or at any scale must accurately reflect the distribution of the unifying phenomena or assemblage of factors that have been used to characterize it. Drawing the boundaries of cultural realms is difficult because the boundary is often located in a zone of transition to another cultural realm. The Problem of establishing boundaries for cultural realms is complicated by the scale at which they are examined. At a global scale many of the smaller cultural variations are ignored by boundaries drawn to indicate the major cultural realms.

7.3 WORLD CULTURAL REALMS

Numerous people have divided the world on the basis of culture: anthropologists on the basis of the level of development of individual groups; historians on the basis of the past; and geographers on the basis of both the past and present. Geographer's cultural realms (particularly those related to climatic realms) generally relate to economic development or to specific cultural phenomena such as religions, legal systems, or types of government. This text recognizes seven broad cultural realms, which cover areas of various sizes, with great differences in population. The European (also known as the Occidental) has the largest population and covers the largest total land area, reflecting its wide diffusion. The Polynesian Melanesian (South Pacific) has the smallest population, but covers a large area of the earth's surface, since its population is restricted to the scattered islands of the region.

Population of Cultural Realms

CULTURAL REALM	POPULATION (MILLIONS)
1. European (Occidental)	1,544
2. East Asian (Oriental)	1,302
3. South Asian (Hindu)	963
4. Islamic	546
5. Southeast Asia	433
6. Sub-Saharan Africa	450
7. Polynesian-Melanesian	6

7.3.1 The European Cultural Realm

The European cultural realm reflects the origin and diffusion from Europe of systems of government, religion, and life-styles. Prior to A.D.1500, the European Cultural realm was one of the world's smallest. Concentrated in the western portion of present-day Soviet Union and Europe, it diffused widely because of technological advances.

Mediterranean Europe and Latin America

The Mediterranean division of the European cultural realm has a long and rich history of civilization. The Mediterranean Basin was the core of the Greek (Hellenistic) civilization and the subsequent Roman civilization and empire. Later, in the Middle ages, the Mediterranean was one centre of commercial, artistic, and scientific and technological advance within Europe, the other being the Arab world. The Spanish control of the complex civilizations of the Aztecs of Middle America and the Incas of the Andes brought important changes to the cultural map of Latin America. The Spanish conquest led to tremendous loss of life as disruption of the existing civilizations was compounded by the introduction of European diseases, which reduced the native population by as much as 90 percent. Spanish institutions of land, wealth, religion, language, and political organization modified the existing Indian civilizations.

The Western and Northern European Sub-realm

The Countries of western and Northern Europe have had a profound effect on both the European cultural realm and the rest of the world. The diffusion of peoples, languages, technology, values, and political organizations from this portion of the European realm has affected the entire world. The importance of western and Northern Europe to the rest of the world is illustrated by the four major revolutions that took place in this area between the 15th and 18th centuries: the Democratic Revolution, which occurred between the 17th and 19th centuries; the later Agricultural Revolution of the 18th century and in 17th century the scientific revolution was began. The most important region to which the Western and Northern European culture diffused is Anglo America, which in turn has become a secondary health for subsequent diffusion to much of the rest of the world. The characteristics of the western and northern European cultural Subrealm-free enterprise, religious tolerance, democracy, and pluralistic societies-have been emphasized to an even greater degree in America. Moreover, the Industrial Revolution, which had its origin in Europe, was further intensified in Anglo America. Today, the United States is both the largest single industrial producer in the world and the largest and wealthiest market. The geographic factors that combined with the European culture to allow the United States to emerge as the dominant economic power in the world are its great size, rich resources, central location between the Atlantic and the pacific for trade, lack of long boundaries with hostile neighbors, and accessibility provided by rivers

and ports. The large landmass with relatively few occupants and rich resources combined with the expansion of democratic ideals and capitalism to attract large numbers of migrants.

Anglo America has become the primary source region of a highly modified European culture termed American, which has diffused widely spreading ideas of mass production and consumption, convenience foods(from fast-food restaurants to frozen dinners), and America versions of English, music, television, clothing and other cultural variables, Anglo America has replaced Western and Northern Europe as a hearth for maintaining and diffusing European culture to the rest of the world.

7.3.2 The East Asian (Oriental) Cultural Realm

The East Asian or Oriental Cultural Realm includes nearly as many inhabitants as the European realm, but they are concentrated in a much smaller area of the earth's surface. The Oriental realm includes China, Korea, Japan, and Taiwan. China alone has more than one-fifth of the world's population, and its area is exceeded only by the Soviet Union and Canada. The Cultural characteristics of the Oriental realm include the ideas of Buddhism, Confucianism, and Taoism, agrarian economies, an early stage of the Industrial Revolution, and the dominance of centrally planned economies and communist political control. South Korea, Taiwan, and Japan do not share all of these characteristics, but they contain a minority of the population of the East Asian realm.

The Characteristics of the East Asian cultural realm reflect the long history of the Chinese dynasties and the associated Asian religions. The intertwining of religion and the political system has created a culture distinctly different from that found in the European cultural realm. The culture of the East Asian realm reflects the values and traditions of the teachings of Confucius and Taoism combined with elements of Buddhism. The influence of Confucianism with its emphasis on proper relationships led to a practical life-style that emphasized diligence and respect. The result has been what is called the Confucian meritocracy. Adopted in china, korea, and japan, the Confucian meritocracy is associated with a society in which hard work, proper relationships, and respect for leaders are the norm.

Variations in the East Asian Cultural Realm

East Asia has always been dominated by china. Separated from Europe and South Asia by mountains and deserts, and with a strong ethnocentric belief that the Chinese were superior to other peoples. The commonality of Chinese ideograms for writing in china, Korea, and Japan has provided some cultural homogeneity not found in the European cultural realm. Confident of their own superiority, the Chinese viewed themselves as the center of the earth, the "Middle Kingdom". The East Asian Cultural realm remains one of the world's most geographically distinct and densely populated culture regions with an economic level that is behind that of other culture regions.

7.3.3. The South Asian Cultural Realm (HINDU)

The South Asian Cultural Realm (sometimes known as the Hindu realm) is the product of another ancient civilization. At least a thousand years before the emergence of Europe as a dominant world force in exploration and colonization, India was the site of a flourishing civilization that developed social and economic orders that persisted until European Colonialism destroyed important elements of its fabric. Central to the Indian civilization was Hinduism, a "religion" that transcends the traditional concept of religion and embodies a way of life that still largely determines the actions of each of its followers. Hinduism does not extend to all parts of the cultural realm, however. Bangladesh is included in the south Asian cultural realm even though it is overwhelmingly Islamic because it has been a part of the long history of Indian civilization. The island nation of Sri Lanka is also part of the South Asian cultural realm. Even though it has attempted to forge a separate political path since independence, it is still culturally, politically, and economically tied to India. Pakistan, however, is not included in the South Asian cultural realm. Pakistan is an extension of the Islamic cultural realm to the west and historically has been a bridge between the South Asian cultural realm and the Islamic realm. Islamic invaders brought Islam to India and to Bangladesh, but Islam was always a minority religion in India.

Although the South Asian cultural realm has a few outliers in such places as Fiji and the Caribbean (Trinidad), it is a relatively small area that has never engaged in colonization or expansion. Examination of a map of the cultural realms of the world a millennium ago would reveal that the South Asian realm has grown the least among the cultural realms of the world.

7.3.4. The Main Islamic Cultural realm (North Africa)

The Main Islamic cultural realm includes one hearth of early domestication and civilization. It stretches across the arid and semiarid regions of North Africa, the Middle East, and Southwest Asia to Pakistan. The culture of this entire region reflects the influence of the Arab and Persian civilizations and the dominance of Islam. Like the European cultural realm, the Islamic realm has expanded dramatically during the course of its existence. Islam expanded from its hearth in Arabia to become one of the most important cultures in the world. But, it remains one of the spatially largest cultural realms in the world. The dominance of Islam across this region provides a degree of uniformity to an area that is otherwise fragmented into a wide variety of states and cultures. Three types of life-styles are found across this region: city, village, and nomad. The principal focus of Islamic life is the city. Religious life in the Islamic city focuses on the mosque and activities relating to the daily prayers. In the golden era of Islam, the Islamic cities were the sites of major institutions of learning throughout North Africa, the Middle East, and Southwest Asia. Baghdad, Istanbul, Cairo, and Tehran were major centers of scholarly activity.

Nevertheless, the majority of the residents of the Islamic realm live in villages where they produce basic crops of dates, vegetables, and small grains for local consumption or trade with the cities. Villages in the Islamic world are characterized by the extended family, wide variations between rich and poor, and control of wealth and lands by a privileged few. The final major group in the islamic world are the nomads. For many Western observes nomads are the familiar stereotype of the Islamic world, but in fact, nomads have never comprised more than 5 to 10 percent of the population of that world. Opportunities for education, medical care, and a better quality of life are combining with government inducements to further diminish the total numbers of nomads across the Islamic realm. The Islamic realms also vary somewhat in terms of the degree to which democracy, industrialization, and personal freedoms are allowed. Nevertheless, the unifying element of Islam prevails across the realm. The importance of the religion combines with the concentration of petroleum in the Persian Gulf to make this one of the most important cultural realms in the world. The diffusion of Islam has created major exclaves in Bangladesh and Indonesia, which differ from the main Islamic realm. Although both are Islamic, they combine elements of an older civilization with their culture. The Islamic cultural realm merges to the south with the African region with its animist and

Christian groups. The boundary of the Islamic realm divides many countries of the Saharan region. The trade and interaction between North African and Sub-Saharan groups over time has spread Islam to the Sudan, south along the Indian coast, and across the Sahara.

7.3.5 The Southeast Asian Cultural Realm

South of China and east of the South Asian cultural realm lies an area of cultural fragmentation. The region of Southeast Asia consists of a variety of ethnic and racial subgroups with little unity. Peripheral to the great civilization of India and China, Southeast Asia has been a recipient of cultural elements from each. Diffusion of Buddhism from India and migration of Chinese nationals have contributed to the particular cultural mix that characterizes Southeast Asia. Buddhism dominates the mainland; Indonesia and Malaysia are Muslim, and the Philippines are Roman Catholic. In addition, there are smaller areas of Hinduism, Christianity, and various tribal ethnic religions.

7.3.6 The Sub-Saharan African Cultural Realm

Because of its particular assemblage of cultural characteristics, Africa South of the Sahara is commonly recognized as a distinct cultural realm. Sub-Saharan Africa differs from North Africa Primarily in terms of language, religion, and race. Sub-Saharan Africa is dominated by Negroid peoples whereas Caucasoid characteristics are dominant in North Africa. North Africa is overwhelmingly Islamic, while sub-Saharan Africa is not. Although Islam is widespread in the countries that border the southern margins of the Sahara, further south the influence of Islam fades rapidly. While Arabic dominates North Africa, Sub Saharan Africa is a mosaic of languages and language families. Racially, three broad groups are found in sub-Saharan Africa, the Negroid, Pygmies, and Bushmen. The religious geography of Sub-Saharan Africa is equally complex.

7.3.7 Polynesian-Melanesian : (The Oceania Cultural Realm)

East of Southeast Asia are the island groups of the pacific. This region, which is known as Oceania, or the South Pacific, can be divided into three island groups: Melanesia, Micronesia, and Polynesia. Melanesia is located closest to Southeast Asia. The islands of Melanesia are large, with a tropical climate similar to that of the mainland rim of Southeast Asia and the Indonesian Archipelago. Melanesia extends from Southeast Asia to Australia and consists of a number of large islands, including New Guinea. Micronesia

consists of a few volcanic and complex high islands and many tiny atolls (coral islands with a reef surrounding the lagoon). Polynesia covers the largest area of the South Pacific, but it is comprised of a very small amount of land. Polynesia includes both low coral atolls and volcanic islands. Today the residents of this cultural realm can be subdivided into a Polynesian-Micronesian subset and a Melanesian subset.

7.4 SPREAD OF OCCIDENTAL CULTURE

The expansion of European civilization during the last four centuries took three forms: settlement, colonial rule, and cultural diffusion.

Europeans spread overland and overseas into northern Asia, the Americas, South Africa, Australia and New Zealand. These settlements were in the mid-latitude climates and to some extent in the tropical highland zones. Equally important, they were in areas of weak, peripheral cultures. Nowhere did European settlement displace native people in the core areas of other civilizations.Europeans controlled trade, investment, and strategic colonies by superimposing their administration and business management on peripheral cultures(tropical Africa, Southeast Asia and America) and on large parts of non Occidental civilizations (Peru, Mexico, India, Middle East, and to some extent China).

In addition, the Occident even without settlement or political control has affected the entire earth through cultural diffusion. The products of Western technology have dispersed mush faster and farther that western value systems and institutions. Can a non-western society accept the former and reject the latter as if the parts of a culture had no connection? The answer is not a simply yes or no. Adoption of occidental forms of technology and economy will inevitably affect other sectors of life, but the new ideas must be fitted into the indigenous cultural heritage.

Thus, we must not look upon non-Occidental civilizations as obsolescent vehicles, ready to be replaced by a uniform and worldwide standard model of western design. Instead, they appear as living entities with capacity for adaptation to new circumstances. To be sure, civilizations develop and decay, but none of the present major cultures show clear signs of a swift demise, in spite of what prophets of doom may say. Different culture realms will continue to exist side by side, though in ever closer association.

7.5 MEDITERRANEAN EUROPE AND LATIN AMERICA

In the late Middle Ages Mediterranean Europe was still the nucleus of Occidental culture. The merchants of Genoa and Venice had built commercial empires extending over the entire midland sea. They, together with Italian geographers and navigators, laid the basis for the later oceanic voyages of Portugal and Spain.

The Spanish conquest of Middle and south America destroyed the superstructure of the Indian civilizations from Mexico to Peru, but not the Indians, although it severely reduced their numbers. Spanish institutions were imposed wherever feasible on the indigenous population. Viceroys administered the colonies by order of the absolute monarch and with the help of the army. The Catholic Church converted the Indians and held a close rein on the spiritual life of the entire population. Members of the elite received large and grants, including feudal rights over the Indian inhabitants. Thus, army, church, and landed aristocracy became the ruling triad in Spanish America, Separated economically and socially from the mass of the population.

The Portuguese colonization in Brazil was in many ways similar to the Spanish system. However, their domain lacked the magnets of the highlands civilizations with their precious metals which drew the Spanish into the interior at an early date. The Portuguese showed more interest in cultivating export crops. This explains why their settlements remained for a long time in the coastal areas.

Diversity of habitats, peoples, and governments makes Latin America less a unit than the name might indicate. Within the zone of pre Columbian civilizations the Indian way of life, including language, social organization, and communal landholding, has survived to a large extent, at least at the village level. English, Dutch, and French incursions into the Caribbean area and the Guianas left their mark in Speech, political institutions, style of life, and racial compositions. Plantation agriculture on the islands as well as the tropical mainland resulted in large concentrations of Negroes. On the other hand, in the so-called temperate climates of Argentina, Uruguay, the southern part of Brazil, and Chile, the population is in great majority of European stock. The permissive attitude of Latin's toward intermarriage with nonwhites has led to considerable race mixing. The Mestizo, blend of European and Indian, is the predominant type in Mexico and southward into Colombia and Venezuela. In the Antilles and Brazil intermarriage with Negroes has produced the widespread mulatto type.

Politically fragmented Hispanic America stands in sharp contrast to the two huge units of Anglo-America. The revolt against Spain in the early nineteenth century involved only the Spanish colonial elite. In each population cluster the leading group took over the authority of the Spanish Crown and assumed control over the outlying areas as far as it could maintain effective power. Brazil preserved its unity principally because the Portuguese royal family moved to Brazil during the Napoleonic Wars.

In Europe the many states reflect the mosaic of nations, but this is not true in Spanish America. Here the cultural tradition of the elite in one country is much the same as that in the other countries. The Cleavage between classes within each country exceeds that between members of the same class in different countries. The spatial variety in culture and economy is thus often more one of regionalism or sectionalism that of nationalism.

The democratic spirit of the French and American revolutions hardly touched Latin America, or did so only recently and in isolated instances. The bulk of the population remains in virtual bondage, illiterate, poor and only partly assimilated in the national entity. A wealthy minority of landed aristocracy still governs most countries, allied with the army, and sets the tone in values, customs and institutions.

7.6 `NORTHWESTERN EUROPE

From A.D.1600 onward north-western Europe became the veritable dynamo of the Occident. Its inhabitants overtook the Iberians in exploration, trade, and colonization, developed modern capitalism, strengthened the middle class, extended democratic institutions, and turned rational thought into modern science and technology. The diffusion of Occidental culture over the world since 1600 was largely the spread of ideas and things which originated in the Northwest Europe. In the vanguard were France, the Netherlands, and Britain, but Scandinavians, Germans, and Swiss also participated in the overseas ventures or were directly affected by the economic and social development generated by the new overseas frontier.

Until World War I north-western Europe was the main seat of political and economic power. The outcome of World War II made it the chief arena of struggle between the new superpowers of the United States and the Soviet Union. The remarkable reconstruction after that war demonstrated the vitality of the nations of Northwest Europe.

The European Economic Community, by including Italy as a member and probably to admit later other Mediterranean countries, Great Britain, and Scandinavia-affirms the idea of the fundamental unity of Maritime Europe. If a political union were to result, it would add a third superpower to the present two. Such a Maritime Europe would re-create in enlarged from the ancient West Roman realm.

Anglo America: The term Anglo-America must, of course, not be taken too literally. The remaining indigenous peoples from the Arctic to the Rio Grande, the French Canadians, and the national origins of most of the English speaking inhabitants suggest plurality rather than monolithic unity. Yet, the term is apt if one considers that the English language and institutions have moulded the predominant culture pattern.

Even the most astute observer in 1750 could hardly have foreseen this "Anglo-America," stretching from Atlantic to Pacific, and divided into only two sovereign states. At that time there was only a narrow band of English colonies-which had incorporated the Dutch and Swedish settlements-between the ocean and the Appalachians. Enveloping it in a large are lay the French empire controlling the St. Lawrence and Great Lakes drainage basin as well as the Ohio-Mississippi valleys. In the far west, Spanish rule extended across the Rio Grande and Colorado rivers into the southern plains and California. Yet, within half a century the French were to give up all claims and the British were to recede to Canada. Annexation of Spanish territories came later, not because of their strength-to the contrary, they were a tenuous and neglected extension of the Spanish Mexican frontier-but because their distant location beyond arid lands and mountains separated them from the advancing Anglo-Saxons.

Unlike Latin America, North America had no native civilizations whose riches attracted Europeans into the interior. But this also meant that there was no large and settled Indian population to subdue, exploit, and assimilate, Nor was there, as in Latin America, the voice of the Catholic Church, demanding conversion of the heathens as an essential task of the conquest. The virtual elimination of the Indians made the greater part of Anglo-America a white man's country, where the settlers themselves had to perform all tasks from the most menial to the most exalted.

The important exception was the subtropical South, where the planters of cash crops came to rely on imported labor from Africa. Here a different way of life developed, with strictly observed caste rules dividing the free whites and the slave Negroes. The "Cancer of Slavery" eventually was removed, though one hundred years there after the place of the Negro in American Society, whether in South or North, was still at issue.

The Vast domain of the United States with its rich resources and its common market offered great economic opportunities. Moreover, its location between two oceans afforded protection against outside interference during the formative years. These were the necessary conditions that gave rise to paramount world power in the first half of the twentieth century. But the ultimate causes lay in the kind of society that grew up in the new habitat. The immigrants, while turning their backs on Europe, brought along their aspirations for a new freedom as conceived by visionaries in their homeland. In America, on new ground, released from the fetters of tradition, the incipient modern ideas received fresh meaning and expression: "industrialism as a technology, capitalism as a way of organizing it, and democracy as a way of running both"(Lerner, 1957,39).

In Canada, with the exception of Quebec, the British tradition remains, of course, stronger that in the Unites States, but the differences are minor compared to the overall\ similarity between the two Anglo-Amercian subcultures. Canada suffers from two handicaps. One is the division between the English and French, which is far from resolved. The other is the contrast between the narrow strip of effective settlement and the vast wilderness that reaches south to Lake Superior and thus cuts the ecumene in two. Fur trappers, loggers, and miners by their scattered and often ephemeral occupancy created a typical frontier economy, but farm settlement has not followed, as would have happened in more genial climates. At the same time, Occidental intrusions have deeply disturbed the native way of life. Thus, most of Canada lies on the periphery of Occidental culture, an indefinite area between the old which is going and the new which is reluctant to take hold. Alaska has much the same character, though its role in relation to the United States Ecumene is far less important than that of the Canadian Northlands in relation to inhabited Canada. Other Transoceanic Offspring from North West Europe. Australia offers interesting similarities and contrasts to Canada. Here too a narrow populated zone is joined to a vast and virtually uninhabited domain. While Canadians can take some comfort in the thought that beyond its Arctic borders the wilderness continues into the northern regions of the Soviet Union, Australians know that beyond their dry wastelands

lie the well-populated Asian countries. And while Canada's location makes it an integral part of the North Atlantic community, Australia's situation destines it to remain a distant and isolated outlier of Occidental culture. Even within the inhabited part, occupancy is patchy and rural settlement thin because of the large size of the farm units. Over two-thirds of the 12 million people live in cities, and half of the population is concentrated in five of them.

Development of Australia's tropical north is of serious concern: little has been accomplished so far in spite of considerable efforts. Environmental restrictions on agriculture, as well as the distance from markets and from the amenities of the ecumene, are inhibiting factors. The fact that this tropical fringe has been left to the Australian aborigines over thousands of years, although certainly known to Indonesian sailors, indicates its inhospitable nature.

If Canada and Australia carry burdens of empty empire, the offshoot of Occidental culture in South Africa faces point-blank, on its borders and in its midst, the rising consciousness of Negro-Africans. Unlike the situation in the United States, the ten million Bantu Negroes form the majority of population and are, for the greater part, unassimilated to the dominating Occidental culture. The antagonisms are compounded by the presence of other racial groups, such as Indians and Malays, and by the split between the Afrikaners(Boers) and the English. Nowhere else does western civilization face such a challenge to its very existence as in this outpost?

In comparison to Australia and South Africa, conditions in New Zealand are almost idyllic. In a genial climate, its immigrants have created an egalitarian and somewhat more comfortable New England. The indigenous Maori, who since the 1880s have been treated quite well, form only a 6 percent minority. Remoteness-at the very opposite side of the earth from what the older New Zealanders still regard as "home"- is the greatest drawback of this South pacific outlier of West European civilization.

Continental Europe and its Eastward Expansion: Inland from Maritime Europe lies the shatter belt of Central Europe. Essentially continental in character, it did not participate in the great adventure of oceanic discovery and expansion, not in the subsequent economic upsurge of North-western Europe. It has been the meeting ground of Slavic and Germanic peoples, of Eastern and Western Christendom. It is a transition zone which deserves recognition because it is neither western nor eastern (Russian)

Europe. Toynbee classifies Russia as a separate civilization, for he considers Russia a successor to Byzantine-Eastern Christianity, in his view something quite different from Western Christianity. Perhaps his emphasis on religion has made him minimize other features which justify the inclusion of Russia as part-a distinct part-of Occidental civilization. The Muscovy of 1500 was still on the fringe of western culture, a semibarbarous state in spite of its Orthodox Christianity and its linguistic affiliations to other Slavic peoples further west. But in the following century the process of acculturation to western Europe began, and by 1700 it gained momentum when Czar Peter made a purposeful drive for westernization.

The Communist ideology drew its inspiration from West European ideas, even though it perverted their ideals. Again, one is reminded of the thesis that innovations often find a better home on the periphery of a culture than in its center. In Russia, untouched by Reformation and French Revolution and virtually without the vested interests and liberal traditions of a middle class, a new type of industrial society replaced at one swoop the semi feudal system. By the nature of its totalitarian regime and doctrine, Russian communism is committed to creating a homogeneous society for its multinational population. Harmless diversions such as folk dancing are encouraged, and religions such as Islam are tolerated as long as they do not lead people to "backward nationalism." Nothing must interfere with the progress toward what the communist party elite sees as the ideal of modernity. The original Muscovy grew up in the forests on the margin of the Tartar Empire, which controlled the steppe to the south. Russia's initial expansion across the Urals followed the narrow belt of open woods and prairies between the subarctic forests to the north and the deserts to the south. Here the advance was rapid, not only because the environment was favorable, but also because the sparse indigenous population, loosely organized in many tribes, offered little resistance. Through this zone was built, at the very end of the nineteenth century, the Trans-Siberian Railway, the spinal cord of Russian Asia.The conquest of Central Asia came in the latter third of the nineteenth century, much latter than that of Siberia. The soviet government has made intensive efforts to integrate the Turkic Moslems, and to modernize their traditional dual economy of Oasis agriculture and nomadic herding. In view of this diversity it may seem idle to insist on the fundamental strands of internal unit-the preponderance of Islam, the Arab-Persian roots of culture and the similarities in mode of life. If this uniformity seems contrived, one may turn the argument to the question whether a more meaningful classification is feasible by dividing this realm among its neighbors. If this proves invalid

it reaffirms our view that, for both positive and negative reasons, the area is a distinct cultural entity. In Africa the southern boundary of the realm runs through the zone where Islam impinges upon the tribal religions of Meso-Africa. For many centuries Caucasoid peoples, speaking Hamitic or Semitic languages, have penetrated into the Sudan and the highlands and coastal areas of East Africa. The limit, coincides fairly well with the boundary between the grass and thorn bush steppe to the north and the wooded savanna to the south. To be sure, the coastal strip of East Africa, southward as far as Beira in Mozambique, has many Arabs and Arabic culture traits as a result of long trade contacts with southern Arabia, but on the whole this area may properly be regarded as part of the Meso African realm. While elsewhere the boundaries of the Islamic domain meet with cultures that are equal of superior in strength, in Africa there is the opportunity to extend its influence. Infiltration from the north is an old theme here, which may intensify now that European colonial rule has withdrawn.

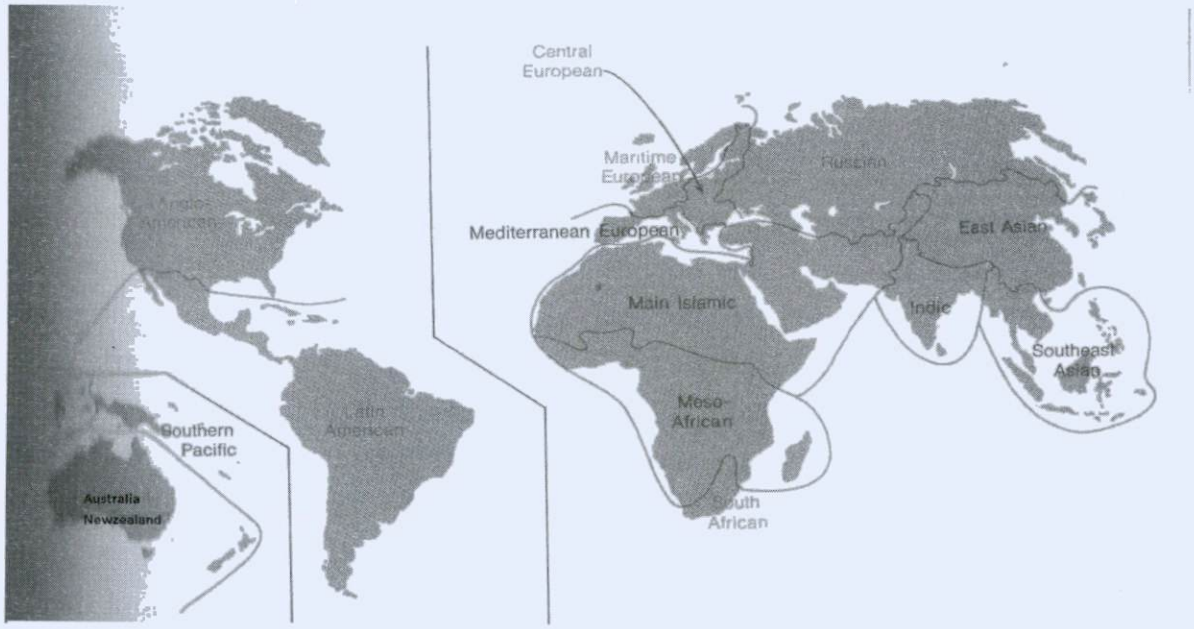
7.7 THE INDIC REALM

Mountain walls and ocean shores make the Indian subcontinent a distinct physical unit. However, the north western section has always been in close communication with central Asian and the Middle East shares many aspects of life and landscape with these regions. This justifies the exclusion of West Pakistan from the Indic culture realm. Even with this restriction there remain such diversities and incongruities that it may seem rash to assert its individuality. Yet there is truth, however evasive, in this concept. Religion is doubtless a major force in Indic culture. The deep concern with the fate of the individual soul has cast its spell over Indian life, for which the ultimate rewards are not in this world, but in the better birth in a subsequent incarnation. Monks and other holy men are highly esteemed because they present the ideal conduct through there treat from life's ignoble struggle.

The individual – spiritual ends are pursued within and through the social organs of family, village community, and caste. There is a rift between these primary groupings and the political organization of the state. In the absence of an enduring tradition of imperial government, political rule has been largely of a personal nature, often despotic and always fleeting. Foreign conquerors, entering the subcontinent from Persia or inner Asia, built the larger and more lasting empires, but their successive domains fell apart again as their power waned. At the same time, the weakness of the political and

administrative systems prevented the state from interfering substantially with the established social order.In view of these considerations, it is no wonder that India's impact on other parts of the world has been chiefly of a spiritual nature. Its religious, especially Buddhism, have profoundly influenced the cultures of Central, East, and Southeast Asia. Campaigns of conquest outside India have been rare, and the number of settlers in overseas colonies has been small, if one excludes Indian workers who were recruited for manual labor overseas during the last century.

Because of its religion, East Pakistan, which in other respects is an integral part of the Indic culture realm, has been torn off politically and linked with distant West Pakistan. Ceylon, because of its island nature always somewhat different from the mainland, has resumed its separate course since British rule ended. The problems of present day India are in many ways similar to those of other under developed countries. It has the advantage of a long tradition of civilization and of political unity, frail as it may be over a vast area. In the entire realm the dense and still rapidly growing population, mainly agrarian and living on the edge of hunger, makes the problem of economic growth especially urgent as well as difficult to solve. If India is to go modern it must change its social order and reinterpret its ideology. But its tradition, together with the legacy of British political thought, militates against ruthless regimentation of the individual. India seems to prefer gradual advance rather than great leaps forward. One must hope its pace is fast enough to escape the clutches of poverty.



CULTURAL REALMS OF THE WORLD

7.8 THE EAST ASIAN CULTURE REALM

Essentially this is the area of Chinese of Sinitic, civilization with its variants in Korea and Japan. Although China's physical frame lacks the clear-cut boundaries of the Indian subcontinent, the vast deserts, high plateaus and rugged mountains of Central Asia have shielded china, more than any other major culture realms, from outside contacts. To be sure, in its formative stage Chinese civilization received much from southwestern Asia, for which the string of inner Asian oases served as relay points; but from then on its development has been essentially a native growth. By the end of the Han dynasty imperial China covered much the same area as China Proper today. The enduring unity of the country for 2,000 years manifests the fundamental homogeneity and stability of its social order and political institutions. Invasions by pastoral monads were frequent, but the foreigners ruled "through a state organization originally created by the Chinese and operated through an officialdom which has usually been overwhelmingly Chinese". And commonly the conquerors adopted the Chinese way of life.

Feelings of cultural superiority create ethnocentric attitudes. Just as the Greeks distinguished between themselves and the barbarians so the Chinese divided the world into the Middle Country their own and the Outside countries, whose inhabitants were beyond the pale of civilization. This self satisfaction suffered rude shocks when the occident at last forced its way into East Asia in the nineteenth century, but now there is good reason to believe that a new version of the old chauvinism is emerging. The Chinese ethos stands in stark contrast to that of India. Whereas the latter is metaphysical, Chinese thought stays close to concrete reality. Rather than religion it emphasizes human relations. Thus the maxims on the organization of society, from family to state, take precedence over the claims of otherworldly religions. Temporal power had divine sanction, but there was never any doubt that the state came first, with religion as its servant. Not the priesthood but the civil service bureaucracy, selected by examinations and promoted by merit ratings, supervised the social order. It is still too early to tell how much the Communist revolution will actually transform the foundations of Chinese society. The traditional social structure was already crumbling under the impact of the Occident. It is idle to speculate whether timely reforms by a strong and democratically minded government could have prevented the communist victory. Only one thing seems certain: the Chinese, while adopting Western things and thoughts, will mold them in

their own image, as they succeed in their modernization, China may again rise as one of the great powers, and, in Chinese eyes, be again the Middle Kingdom, the pivot of the earth.

Pride in the homeland explains to a large degree the posture of the ten million or more Chinese is Southeast Asia. Most of them have been reluctant to conform to the local ways of life, which they consider inferior to Chinese culture, although China's humiliations in the nineteenth century made many falter in their loyalty. China's rise in stature under the Communist regime gives many, even those who loathe communism, new pride in the motherland and confirms their belief in China. At the same time, it makes the possibility of their assimilation into the local societies more remote that ever.

Japan and Korea

While Chinese influence in Japan and Korea has been substantial, these two countries must not be considered as mere transplants of Sinitic civilization. Many Japanese words show ancient relationships with Polynesian languages, and the grammar indicates links with the Altaic (North Asian) linguistic family. Much later, in the fourth century A.D., the impact of horse-riding pastoral nomads from northeastern Asia brought about unification of the tribes in southern Japan (the Yamato empire). Direct contacts with China began after A.D. 500. the Japanese incorporated many Chinese words into their vocabulary, modeled their writing system after the Chinese example, and borrowed many other customs and institutions. In all these culture transfers, Korea by its very position and shape served as the bridge between mainland and islands. It received from northern Asia and China, handed on to Japan, and had its own culture molded in the process. All through Japanese history there appear the alternating themes of continental and maritime influence and interests. In Korea the present split between North and south is a sharp reminder of its traditional position as an embattled zone of passage.

The Japanese islands became the home of a tightly organized nation, able to surmount the shock of exposure to Occidental civilization. It purposefully imitated the ways of the intruders, even to building a vast, though short-lived, empire along the rim of the western Pacific. The energetic reconstruction of the economy and the disciplined acceptance of reforms after the war give additional evidence of Japan's social stability. It is unlikely that it will ever again dominate East Asia, but its ability to fuse Asian and Occidental strains assures it of a special position in the Far East.

7.9 THE SOUTHEAST ASIAN CULTURE REALMS

In contrast to the previously discussed realms, Southeast Asia is not a unit with its own culturally distinct character. Instead, it is an area of transit and transition where different cultures meet and mingle. Its personality is defined in a negative way, in that it is neither East Asian nor Indic, neither Islamic nor Occidental, and yet contains elements of all. Southeast Asia comprises the Asian mainland east of India and South of China, as well as the entire archipelago. The predominant race is South Mongoloid, and thus more related to the people of East than of South Asia. Some ancient customs, such as building houses on stilts, suggest a primeval unity, but this unity has been virtually obliterated by the heavy overlays of subsequent foreign intrusions. The cultural impact of India has been strong over most of the area, as evidenced by religion and the arts. Commercial and political relations existed with China, but the Chinese made no attempt to civilize the barbarians of the Southern seas(Nan Yang). Only Tonking-Annam(Vietnam), for centuries a vassal state on China's southern frontier, was strongly affected by Chinese culture but without losing its identity. Islam replaced Hinduism and Buddhism in the Malay Peninsula and Archipelago, but had not advanced much beyond the limits of Indic influence at the time the Europeans arrived. Thus the pagan population of the Philippines was Christianized and in the course of years became the carrier of that peculiar hybrid culture in which indigenous traits mingle with those from Spain and the United States. The chief nations on the mainland are separated from each other not only by highlands with unassimilated tribes, but also by memories of bitter strife and by the different experiences during the centuries of European hegemony. Malaysia, the Philippines, and Indonesia together may be considered as a distant submit because of their linguistic affinity. However, most of their languages are mutually incomprehensible. More important, each of these countries has been subject to very different impacts of which British. American and Dutch rule were only the last in a succession of foreign influences.

All the countries of Southeast Asia for atleast the last 2,000 years have been culturally a low-pressure area. As such, they have been recipients rather than donors of culture. It would be rash to project past performance into the future and declare Southeast Asia a permanent cultural ward of other civilizations. Nevertheless, now that Occidental rule has receded, India and China may well return to their former roles as dynamic culture centers and thus confront this vast area with new challenges. Southeast Asia's strategic position between the Indian and pacific oceans and between the landmasses of Asia and Australia, its sparsely populated sectors and its rich resources combine to make it of

special interest to many outsiders. In the face of these external relations and potential pressures, the glaring weakness of this realm is its ethnic and political fragmentation a kind of Asian Balkans. It needs greater unity for defense and for internal development. Even its leaders as yet only dimly perceive this ling range self interest amidst the diversity of memories and aspirations.

7.10 THE MESO AFRICAN CULTURE REALM

There are many scattered survivals of peripheral cultures such as those of the American Indians, Melanesians, Poynesians and Arctic people but Negro Africa is different not only because it is such a large unit but also because it has preserved its identity to a much larger degree than the others. The Western educated elite prefers to be called African rather than Negro. This self designation ignores the fact that the northern and southern parts of the continent are occupied by of shared with quite unlike societies which are part of the Islamic and Occidental realms respectively. For a culture realm it is preferable to avoid the term "Negro" with its racial connotations. One could call it Central of Middle Africa, but these terms have already other geographic meanings we propose, there fore "Meso-Africa" as a fresh term, not burdened by political, physiographic of racial meanings. Physical barriers hampering communication between Meso-Africa and other regions are largely responsible for the cultural retardation to the area. Even so during the course of the last five thousand years or more a number of traits filtered in. the great desert in spite of its barren width provided the main passageway for diffusion from north to south, especially in the east where the Nil Valley connects the Mediterranean with the interior. Hamitic pastoral nomads penetrated into the grasslands of the Sudan and also moved southward over savanna corridor of the eastern highlands into South Africa. Besides livestock, they doubtless introduced other materials and traits derived from northern Africa. The east coast received impulses from southern Arabia, India and even the Malay Archipelago. Sailing ships used the monsoons to travel west in one season and return eastward with the reversal of the winds. Arab contacts with Africa's coast may reach back two thousand years and became frequent after the seventh century A.D. Islam is strong in the coastal towns and Swahili the lingua franca of eastern Arica, contains many Arab works. The peoples and cultures of Madagascar show so clearly the imprint of Malay settlers that one must assume they also frequented the coast of the mainland. The widespread occurrence of crops from the Malay Archipelago in Tropical Africa supports this view.In contrast the west coast of Africa was exposed to foreign influences much

later when the Portuguese extended their voyages southward. Until the middle of the nineteenth century, however, the impact of the European was limited to some coastal areas, chiefly along the Guinea Coast. Good harbors' were few and the rivers that tumbled over the highland escarpment were a hindrance rather than a help in entering the interior. Tropical rain forest and diseases also discouraged exploration. Thus, the greater part of Meso-Africa remained a blank on the map until only a century ago.The economic basis of traditional Meso-African culture consisted of crop farming on shifting fields with the hoe as main tool and the raising of cattle, sheep and goats in regions free form the tsetse fly. Although a number of crops and animals were received from outside the realm, it appears that the upper Niger country was the center of autochthonous domestication of several African plants. West Africa more specifically the Cameroons also seems to have been the original home of the Bantu peoples, who spread east and southward some 2,000 years ago first setting the savannas and open woodlands and later pushing into the tropical rain forest. In their expansion they either absorbed of obliterated the primitive hunters and gatherers, of whom only scattered remnants survive in the Congo forest and in the Kalahari Desert. In common with other peripheral cultures Meso-Africans had no form of higher religion and no written languages. In some respects, however, their level was above that of other primitive cultures owing to the trickle of impulses form civilizations to north and east. The density of population, considerable higher than among the Indians of tropical America, reflects the greater diversity of means available to cope with the habitat. Among other more advanced traits were the art of iron smelting, the relatively well developed tribal organization, a feeling for law and a fairly keen interest in the acquisition of property. European exploration of "Dark Africa" was swiftly followed by its partition. Since then as in all other colonial countries, there has been humiliation and exploitation of the native peoples but also much constructive effort. The scourge of slave raiding and trading, already an old one by the time that the Europeans began to participate, was abolished and tribal warfare was suppressed. Occidental forms of religion, law education, medicine, production and trade were introduced. These intrusions deeply affected the traditional ways of life. Thus, when European rule withdrew from Meso-Africa after the middle of the twentieth century it left behind a multitude of societies, too much disturbed to return to their native folkways, but not enough transformed to possess a new social order. The change from primitive tribe to modern society, which took some 2,000 years in other parts of the world, could hardly have been accomplished here in one hundred years even though the pace of change has quickened. The crucial

issue now is whether the native born. Western-educated elite has the competence to lead the mass of conservative and illiterate tribal folk toward the professed goals of a better life. Closely related is the problem how to create new territorial frameworks for socially coherent and economically viable states instead of the colonial conglomerates and strategic slices and slivers.Resident groups of non Africa descent can materially assist in future economic development unless socal and political pressures isolate of even expel them. Among these groups are the white farmers in the eastern highland from Kenya to Rhodesia, the mixed-bloods in Angola and Mozambique and the Indians in the coastal areas of East Africa. They occupy managerial, administrative, technical and commercial positions which the Meso-African is not yet prepared to fill but at the same time their special position economically and racially makes them an easy target for discrimination. All these fateful issues suggest that independence is the beginning of a time of troubles, whose end and outcome cannot be foreseen. Not will the decisions lie solely within Meso-Afica. Its economic resources and political weakness inevitable attract influences from abroad, whether these take the from of welcome "foreign aid" of suspect "neocolonialism". Although the legacy of West European culture is at present the dominant force in the process of change one cannot be certain whether Meso-Africa will pattern itself in this mold of turn to other culture realms for its inspiration.Between the heartlands of Russia and China lies a wide belt which is peripheral to both cultures. This zone, from the borders of Manchuria to Sinkiang is not a cultural unit, being sparsely occupied by people of widely divergent languages and traditions. The political boundary between the Soviet Union and the People's Republic of China marks the respective spheres of influence at least in their overt forms but the line must be understood as the current divide in an unstable power equilibrium. It has shifted widely during recent centuries and may do so again in the future.

7.11 THE MAIN ISLAMIC REALM

To find a fitting name for this realm is some what of a problem. In German it is called the Orient, a term formerly also used in English but now commonly reserved for East Asia. Everyone stretches "the Middle East" to suit his convenience, but extending it as far west as morocco and east to West Pakistan overstrains its elasticity. The same goes for the French Levant which essentially refers to the lands around the eastern Mediterranean.Although the Islamic realm includes less than one-half of all Moslems, the prevalence of Islam over this vast area is its chief cultural feature, a sort of common

denominator that suggests the name.North Africa and Southwest Asia have arid to semiarid climates. Everywhere there is the contrast between the pastoral nomad and the oasis dweller, between the steppe and the sown. The time is long past when the Middle East comprised the hearths of civilization, but its location always has given it strategic significance either as a bridge of a barrier between different cultures.

Within the local horizons of Central Europe, the Ottoman sultanate remained the great Vienna in 1683. at about the same time, the Moslem Moghul Empire reached its greatest extent in India. However, in the broader view, the European expansion overseas and overland had already outflanked Islam. By 1500 the Portuguese had entered the Indian Ocean and begun to disrupt the Arab trade routes. From 1600 onward, the Russuan Cosscks moved eastward into the Asian interior, reaching the Pacific in 1683. subsequent West European colonial conquests pushed the rule of Islam back to its core lands in Southwest Asia and North Africa. Even this inner domain of Island was, for the greater part swallowed up by the British, French and Russian empires in the nineteenth and early twentieth centuries, leaving only Afghanistan, Iran an amputated Turkey and Arabia as nominally independent buffer stated. This historic reminder serves to point up the rapid retreat of Western rule in the middle of the present century when all lands of Islam, with the exception of those in Communist Russia and China, became independent again. Under the influence of Occidental ides the traditional authority of family, clan and tribe is breaking down. Instead, the nation state claims the fully loyalty implies identification with the goals of the new state, but these goals are as yet often far from clear. In all these lands there is an ancient contrast between the poor and debt ridden peasants in the countryside and the rich landlords and merchants in the cities. Economic development demands from the upper strata sacrifices they are loath to make and the pursuit of productive work most of them disdain. Thus, social and political instability is characteristic for the entire zone fro Morocco to Pakistan.

In addition there are deep cleavages between the various countries. Turkey and Iran, both non-Arabic and once the seats of great empires, are antagonistic to the Arabs. West Pakistan, the other major non-Arab unit, has always been more involved in the affairs of the Indian sub-continent than in the Middle East. The North African countries of Morocco, Algeria and Tunisia have been much influenced by European rule. And the Arab countries of the Middle East still feud among themselves in spite of the ideal of Pan-Arab unity.

7.12 LET US SUM UP

In this unit you discussed the cultural Realms of the World. Meaning of cultural Realm, delimiting cultural Realsms were discussed. Secondly, world cultural Realsms such as European, East Asian South Asian, Islamic South east Asia and sub-saharan Africa were also discussed. The East Asian culture Realm like Hapan and Korea, Meso Africal culture and also discuss in this unit about main Islamic Realms of the world

7.13 KEY WORDS

Realms, Occidental, Oriental, Latin America, Meritocracy.

7.14 QUESTIONS FOR SELF STUDY

1 Define the cultural realm? explain the importance of study of cultural realms in cultural geography.

2. Discuss the salient features of southeast Asian cultural realm.
(same questions for all the cultural realms of the world)

7.15 FURTHER READING

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UNIT –8 ETHNIC GROUP OF THE WORLD

Structure

8.0 OBJECTIVES

After studying this unit, you will be able to

* Define the meaning of ethnic group or ethnicity.
* Explains approaches to understanding ethnic groups.
* Explains ethnic groups and race, ethnic groups and nation, ethno conflicts.
* Define the ethnic regions.
* Describes cultural diffusion and ethnicity, ethnic cultural integration and ethnic landscapes.

8.1 INTRODUCTION

Ethnic groups are the keepers of outstanding cultural traditions and the focal point of various kinds of social interaction. They can provide not only group identity but also friendship, marriage partners, recreational facilities, business success and political power base.

The study of the regional and ecological aspects of ethnicity is called ***Ethnic Geography.*** It is a branch of cultural geography, which deals with the description and explanation of spatial patterns and ecological relationship in human culture.

8.2 MEMBERSHIP OF ETHNIC GROUP

A group of people having common racial, religious, linguistic or national characteristics is known as an **'ethnic'** group or **'ethnicity.** It is a distinct category of the population is a large society whose culture is usually different from that of the society.

The term **'ethnic'** is derived from the Greek word **'ethnos',** meaning a **"people"** or a **"nation",** but that definition is too broad. For our purpose 'ethnic group' means people of common ancestry and cultural tradition, living as a minority in a larger society, or **"host culture".**

Another definition: **"a highly biologically, self-perpetuating group sharing an interest in a homeland connected with a specific geographical area, a common language and traditions, including food preference and a common religious faith".**

People of ethnic group may reside in an ancient, ancestral homeland or be recent immigrants to a new place of residence, and ethnic groups can exist within both folk and popular cultures. Members of an ethnic group are conscious of belonging to an ethnic group; moreover ethnic identity is further marked by the recognition from others of a group's distinctiveness. Processes that result in the emergence of such identification are called "**ethnogenensis'.**

Membership in an ethnic group is involuntary, in the sense that a person cannot simply decide to join; instead, he or she must be born into the group. Sometimes individuals choose to discard their ethnicity.

Hero otus was the first who stated the main characteristics of ethnicity in the fifth century. The modern meaning emerged in the mid 19th century and expresses the notion of "a people or a nation". The term ethnicity is of 20th century coinage, attested from the 1950s.

The term 'ethnic' came to stand in opposition to 'national'; to refer to people with distinct cultural identities. The first usage of the term ethnic group was in 1935, and it was entered in the Oxford English Dictionary in 1972.

According to "Challenge of Measuring and Ethnic world: science, politics and reality", Ethnicity is a fundamental factor in human life; it is a phenomenon inherent in human experience". Some anthropologists regard ethnicity as a product of specific kinds of inter-group interactions, rather than an essential quality inherent to human groups.

8.3 APPROACHES TO UNDERSTANDING ETHNIC GROUP (ETHNICITY)

The social scientists use different approaches to the understanding of ethnic groups. Examples of such approaches are primordialism, essentialism, perennialism, constructivism, modernism and instrumentalism. Let us take up some of them.

1) Primordialism

It holds that ethnicity has existed at all times of human history and that modern ethnic groups have historical continuity into the far past. This can be divided into 3 types:

a) Essential Primordialism hold that ethnicity is an established fact of human existence, that ethnicity precedes any human social interaction and that it is basically unchanged by it. This theory sees ethnic group as natural, not just historical.

b) Kinship Primordialism holds that ethnic communities are extensions of kinship units, being basically derived by kinship or clan ties where choices of cultural signs (language, religion, traditions) are made exactly to show this biological affinity. In this way, the myths of common biological ancestry that are a defining feature of ethnic groups are to be understood.

c) Geetz's Primordialism: a notable anthropologist Clifford Geetz, argues that humans in general attribute an overwhelming power to primordial human **'givens'** such as blood ties, language, territory and cultural differences.

2. Perennialism

It holds that ethnicity is ever changing, and that while the concept of ethnicity has existed at all times, ethnic groups are generally short lived. There are 3 types in perennialism – perpetual, situational and instrumentalist perennialism.

- ***'Perpetual perennialism'*** holds that nations and ethnic groups have existed continuously throughout history.
- ***'Situational perennialism'*** holds that nations and ethnic groups emerge, change and vanish through the course of history. It reveals that the concept of ethnic group is basically a tool used by political groups to manipulate resources such as wealth, power, territory or status in their particular groups' interest.
- ***'Instrumental perennialism'***, while seeing ethnicity basically as a versatile tool that identified different ethnic groups and limits through time, it explains ethnic group as a mechanism of social stratification, meaning that ethnicity is the basis for a hierarchical arrangement of individuals.

3. Constructivism

It sees both primordialist and perennialist views as basically faulty and rejects the notion of ethnic group as a basic human condition. It holds that ethnic groups are only products of human social interaction, maintained only in so far as they are maintained as valid social constructs in societies.

8.4 ETHNIC GROUP AND RACE

Earlier, race and ethnicity were often seen as two aspects of the same thing. Around 1900 and before the essentialist premordialists' understanding of ethnic group was predominant, cultural differences between peoples were seen as being the result of inherited traits and tendencies. This was the time when 'sciences' such as **'phrenology'** claimed to be able to

correlate cultural and behavioral traits of different population with their outward physical characteristics, such as the shape of the skull. With Weber's introduction of ethnicity as a social construct, race and ethnicity were separated from each other.

The UNESCO statement (1950) suggested that "National, religious, geographic, linguistic and cultural groups do not necessarily coincide with racial groups; and the cultural traits of such groups have no demonstrated genetic connection with racial traits. Because serious errors of this kind are habitually committed when the term race is used in popular parlance, it would be better when speaking of human races to drop the term 'race' altogether and speak of **'ethnic groups'.**

America anthropologists summed up that **'racial'** and **'ethnic'** categories are symbolic markers for different ways that people from different parts of that world have been incorporated into a global economy.

According to Wolf, races were constructed and incorporated during the period of European mercantile expansion, and ethnic groups during the period of capitalist expansion.

8.5 ETHNIC GROUP AND NATION

A community of people of mainly common descent, history, language etc., forming a state or inhabiting a territory is called **'nation'.** In some cases such as trans-national migration or colonial expansion, ethnicity is linked to nationality. Some anthropologists and historians, see 'nations and nationalism' as developing with the rise of the modern state system in the 17th century. They culminated in the rise of **'nation-states',** in which the presumptive boundaries of the nation coincided with state boundaries. Thus, in the West, the notion of ethnicity, like race and nation, developed in the context of European colonial expansion, when mercantilism and capitalism were promoting global movement of populations. At the same time state boundaries were being more clearly and rigidly defined. In the 19th century modern states generally sought legitimacy through their claim to represent **'nations'.**

Nation-states, however, invariably include population that has been excluded from national life for one reason or another. Members of excluded groups, consequently, either demand inclusion on the basis of equality, or seek autonomy, sometimes even to the extent of political separation in their own nation-state. Under these conditions – when people moved from one state to another or when one state conquered or colonized people beyond its national boundaries – the ethnic groups were formed by people who identified with one nation, but lived in another state.

8.6 ETHNO-NATIONAL CONFLICT

In the 20th century people began to argue that conflicts among ethnic groups or between members of an ethnic group and the state can and should be resolved in one of the two ways. Some argued that the legitimacy of modern states must be based on a notion of political rights of autonomous individual subjects. It means, the state should not acknowledge ethnic, national or racial identity but instead enforce political and legal equality of all individuals.

In contrast others argue that the notion of the autonomous individual is itself a cultural construct. It means, states must recognize ethnic identity and develop processes through which the particular needs of ethnic groups can be accommodated within the boundaries of the nation-state.

8.7 ETHNIC REGIONS

Generally themes of cultural geography are well suited to the study of ethnic groups, because such peoples typically occupy compact territories. We can identify ethnic formal culture regions, which exist in most countries of the world.

Ethnic formal culture regions can be divided into two: (i) Rural ethnic formal culture regions and (ii) Urban ethnic neighborhoods and Ghettos.

i. Rural Ethnic Formal Culture Regions contain farming communities, formed by immigrants from many different areas. On the basis of area and population, there are two categories in Rural ethnic formal regions: ethnic homelands and ethnic islands.

Ethnic homelands cover large areas, often over lapping state and provincial borders with large populations. Its population exhibits a strong sense of attachment to the region and often exercises some measure of social and political control over it, including functional aspect to their formal regions. They usually possess special venerated places that serve to symbolize and celebrate the region-shrines to the special identity of the ethnic group. Homeland represents the most powerful geographical entity.

Ethnic islands are small dots in the countryside, usually occupying an area smaller than a town and serving as home to hundreds or thousand people. They are much more numerous. According to a geographer, ethnic islands develop when "a minority group will tend to utilize space in such a way as to minimize the interaction distance between group members".

Ethnic islands facilitate contacts within the ethnic community, minimizing exposure to the outside world. The shape of an ethnic island is circular or hexagonal. Ethnic islands survive from one generation to another. Though, ethnic islands are smaller in size, their population is more susceptible to acculturation and assimilation.

ii. Urban Ethnic Neighborhoods and Ghettos: The minority people tend to create ethnic residential quarters in urban areas, called urban formal ethnic culture regions. There are two types i) Ethnic neighborhood and ii) the Ghettos.

i) **An ethnic neighborhood** is a voluntary community where people of like origin reside by choice. There are many benefits of an ethnic neighborhood such as use of common language;nearby kin, stores and services specially tailored to a certain group's tastes; presence of factories located on ethnically based division of labour and institutions important to the group, i.e. churches, temples etc.

ii) **The Ghetto,** is a segregated ethnic area within a city, caused by residential discrimination against the will of the people involved. In other words, a ghetto is an involuntary community. Whether an ethnic group lives in a ghetto or voluntarily forms its own neighborhood, it usually depends on how discriminatory the host culture is, e.g. American society discriminates more against the blacks and the Asians than the Italians.

In ancient times, conquerors often forced the vanquished native people to live in ghettos. Religious minorities usually received similar treatment. Sometimes walls were built around such ghettos to set them off from the rest of the city and to facilitate night time curfew. Roman cities had Christian quarters, Islamic cities had Christian neighborhoods and European cities had Jewish ghettos.

In recent years, as immigration laws changed, the ethnic variety in cities grew even more and the sources of immigration underwent a fundamental change.

Regardless of the source of urban immigrants, the neighborhoods they create tend to be transitory. As a rule, urban ethnic groups remain in neighborhoods while undergoing acculturation. As a result, their central city ethnic neighborhoods experience a life cycle. Often one group is replaced by another - later arrivals. We can see this process in action in the succession of groups that dominated certain neighborhoods and then moved on to more desirable areas.

8.8 CULTURAL DIFFUSION AND ETHNICITY

The complex diversity of ethnic homelands, islands and neighborhoods in different countries of the world, might seem to be a result of chance. Actually the ethnic pattern is the result of systematic processes of relocation, contagious and hierarchical diffusion.

Migration and Ethnicity: The ethnic pattern in many countries of the world and virtually all urban neighborhoods on every continent is the result of relocation diffusion. In reality ethnicity is often formed by the migration process, as people leave native countries where they belonged to a non ethnic majority land and become a minority in a new homeland.

In many cases, **chain migration** is involved. An individual or small group makes the decision to migrate to other places. Often they are natural leaders they influence others to accompany them in the migration. i.e. friends and relatives. The information spread to nearby areas and soon a sizable migration is taking place from a very small district, directed to a small area in the destination country. That is, the **'decision'** to migrate spreads by **contagious diffusion.** In village after village, the first to opt for immigration often rank high in the local social order, so that hierarchical diffusion also comes into play. The process of chain migration continues even after the first emigration. Involuntary migration also causes ethnic diffusion and the formation of ethnic culture regions. For example, the refugees from Cambodia and Vietnam created ethnic minorities in North America.

Another type of ethnic diffusion is caused by return migration. It involves the voluntary move of a group back to their native homeland. For example, the large-scale return of African-Americans from the urban centres of northern and western USA to the Black Belt ethnic homeland in the south. Thus, migration of all kinds turns the ethnic mosaic into an ever changing kaleidoscope.

8.9 ETHNIC ECOLOGY

There is a close relationship between ethnic group and cultural ecology (study of the relationship between the physical environment and culture) and adaptation. The mutual influence among people and the physical environment is often evident in the pattern of ethnic culture regions, in ethnic migration and in ethnic persistence.

Cultural preadaptation: It is mentioned earlier that when migration occurs creating ethnic minorities in a new land, a related concept - pre adaptation, must be considered.

Pre adaptation involves a complex of adaptive traits possessed by a group in advance of migration that gives them the ability to survive and a competitive advantage in colonizing the new environment. Very often pre adaptation results from groups migrating to a place environmentally similar to the one they had left behind. The adaptive strategy they had pursued before migration works reasonably well in the new home. Consequently there are active, effective settlements and they are able to perpetuate much of their culture in the colonized area.

The pre adaptation may be accidental, but in most cases the immigrant ethnic group deliberately chooses an area for colonization that physical resembles their former home territory.

Ethnic Environmental perception

The place selected by the ethnic immigrants represents a rather accurate understanding of the new land. Generally, immigrants prefer to perceive their new home as environmentally more like their abandoned native land, than is actually the case quite often. Their perception of the new land emphasizes the similarities and downgrades the differences. Perhaps the search for similarities is a symptom of their unwillingness to admit that migration had brought them to a largely strange land.

Whatever the reason, the distorted perception has occasionally caused problems for the ethnic farming groups. The crops that were grown in the native land were not suited to the new land. Sometimes the wrong perception led to economic disaster and the ethnic island had to be abandoned. This is known as cultural mal-adaptation. On the other hand ethnic immigrants have often used their skills as farmers to choose a settlement location wisely, thereby aiding their economic success and cultural survival.

8.10 ETHNIC CULTURAL INTEGRATION

The regional pattern of ethnic homelands, islands, ghettos and neighborhoods is intricate. It is related to a variety of other cultural- geographical factors. The ethnicity is casually related to many other facets of culture. Hence we can apply the theme of cultural integration to the geographic study of ethnic groups. The following three economic examples are chosen to illustrate how ethnicity is integrated into the cultural fabrics.

i) Choice of types of business, ii) Choice of employment and (iii) Choice of farming practice.

i) Ethnicity and Business Activity

Differential ethnic preferences give rise to distinct patterns of purchasing goods and services. This in turn is reflected in the types of businesses and services available in different ethnic settlement areas in urban centres. The neighborhood of a city has unusually a large number of food stores, eating and drinking places, personal services and repair shops. The large number of eating and drinking places is related to the custom of gathering in bars, where much of the social life is centred.

Some areas of a city rank very high in professional and financial service establishments where doctors, lawyers, teachers and banks are in abundance. In contrast, in other area these services are much less.

ii) Ethnicity and type of employment

In many urban ethnic to particular kinds of jobs. The jobs identified are never rigid but they were stronger in the decades immediately following immigration than they are today because of advancing acculturation. But some notable examples can still be found.

In some areas, the identification of ethnic groups and job types is sufficiently strong to produce stereotyped images in the popular American mind, such as Irish policemen, Chinese launderers, Korean grocers, Italian restaurant owners, Jewish retailers etc.

iii) Ethnicity and Farming Practices

It is very interesting that different ethnic groups can retain distinctiveness in the same occupation. For example, there has been a popular belief in USA that farmers of German ethnic origin are superior to Anglo-Americans as tillers of the soil. Pennsylvanian Germans differ from most of the other farmers of that state.

Cultural geographers conducted a survey on German agricultural distinctiveness focused on the Hill country of Central Texas of the USA in the 19th century. Germans who settled there farmed the land more intensively, obtained more income from their land than the Anglo-American farmers. Similarly, the sheep reared by the German yielded more wool per capita and poultry laid more eggs than those of the Anglo livestock. It was due to better feeding and care. (Similar situation can be identified in Indian farming where some states practice more diversified agriculture and earn more income than others.)

8.11 ETHNIC LANDSCAPES

Ethnic groups are generally visible and we can speak of ethnic landscape. Very often ethnic groups differ in the style of their traditional architecture; in the patterns of surveying the land, in the distribution of houses and other buildings etc. In particular, many rural areas bear an ethnic imprint on the cultural landscape. Often the imprint is very limited, something visible only to those who pause and look closely; sometimes it is quite striking, and immediately visible, even to the untrained eye. Persistence, change and degree of delicacy in the ethnic landscape can provide valuable evidence of acculturation and the level of group pride.

Ethnic Settlement Pattern

Ethnic groups create their own unique settlement patterns. If we take a close look at the present-day settlement maps, we can see that different patterns develop. Some farmsteads are situated close to public roads others lie half a kilometer from the roads. Similarly some settlements have clustered streets in a rectangular area. Numerous other rural ethnic groups settle in clustered farm villages.

Urban Ethnic Landscapes

Ethnic cultural landscape also appears in urban settlements, for example, the brightly coloured exterior wall with murals typically found in Mexican-American ethnic neighborhoods USA. They exhibit influences rooted in both Spain and 'Indian' cultures of Mexico. A wide variety of wall surface offers the opportunity for this ethnic expression, from apartment houses and store exteriors to bridge abutments. The subject also covers a wide range, from religious motifs to political ideology, from statements concerning historical wrongs to urban zoning disputes.

8.12 LET US SUM UP

Under the theme of cultural region we have observed how ethnic groups (rural or urban) tend to cluster spatially. It is true that spatial identity is a pre-requisite of ethnic groups. Hence the study of ethnic groups in inherently geographic.

Cultural diffusion helps us to understand the process chosen by immigrating ethnic groups to introduce only some of the traits of their previous homeland. They abandon some old traits and adopt some new traits.

Cultural ecology teaches us that migrating ethnic groups, seeking pre adaptive advantage, often look for suitable physical environments in selecting sites for their new homelands, while ethnic minorities confine themselves to ancient homelands.

The imprint of ethnicity upon livelihood is revealed through the theme of cultural integration.

8.13 KEY WORDS

Acculturation : The process by which an ethnic group changes in order to function in the society.

Adaptive strategy : The unique way each culture citizens its particular physical environment, those aspects of culture that serve to provide necessities of life-food, clothing, shelter and defense.

Chain migration : The tendency of people to migrate along channels, over a period of time, from specific source areas to specific destination.

Cultural diffusion : The spread of elements of culture from the point of origin over an area.

Cultural ecology : The study of the relationships between the physical environment and culture.

Cultural integration : The relationship of different elements within a culture.

Ethnic culture region : An area shared by people of similar ethnic background, who share the same race or language.

Ethnic Geography : The study of the spatial and ecological aspects of ethnicity.

Ethnic homeland : A sizable area inhabited by an ethnic minority exhibiting a strong sense of attachment to the region and often exercising some measure of political and social control over it.

Ethnic island : A small ethnic area in the rural country side, sometimes called a "fold island".

Ethnic neighborhood: An area within a city containing members of the same ethnic back ground; a voluntary segregation of urban people along ethnic lines.

Ghetto : A segregated ethnic area within a city, caused by residential discrimination against the will of the people involved.

Hierarchical diffusion: A type of expansion diffusion, innovations spread from one important person to another or from one urban centre to another.

Nation – State : An independent state inhabited by a relatively homogeneous cultural group.

Pre adaptation : A complex of adoptive traits and skills possessed in advance of migration by a group, giving them survival ability and competitive advantage in occupying the new environment.

Relocation diffusion : The spread of an innovation or other elements of culture that occur with the bodily relocation of an individual or group that has the idea.

8.13 QUESTIONS FOR SELF STUDY

1. Define ethnic groups. Explain approaches to the understanding of ethnic group and ethnic regions.
2. Give an account of cultural diffusion and ethnicity, ethnic ecology and ethnic cultural integration.
3. Write a note on any two of the following:

   a) Ethnic group and race

   b) Ethnic group and nation

   c) Migration and ethnicity

8.15 FURTHER READINGS

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M.Sc
GEOGRAPHY
COURSE - 102
CULTURAL GEOGRAPHY

BLOCK 3

UNIT : 9 PYGMIES, ESKI MOS AND BHUSHMEN

Structure

9.0 OBJECTIVES

After studying this unit, you will be able to

- Define the etymology and origins of the tribals.
- Explain in brief the territory and habitat of the tribals.
- Explain their physical features, food, clothing and shelter.
- Be aware of the occupations, social system of primitive and modern tribals.
- Define the changing lifestyle of the tribals

9.1 INTRODUCTION

We have studied in the previous unit about the Ethnic groups of the world, the terminology and definitions, concept of ethnicity, ethnic categories, ethnicity and race, ethnicity and nations etc.

In this unit we will study about three distinct tribal groups living in three different regions of the world i.e. the Pygmies in the equatorial region, the Eskimos in the Tundra region and the Bushmen in the deserts

9.2 PYGMIES

9.2.1 Nomenclature

The pygmies are one of the most interesting primitive tribes and the simplest people of humankind. **'Pygmy'** is a term used for various ethnic groups worldwide for people whose average height is unusually short. As per Etymology, the term **'pygmy',** is used to refer to diminutive people. It is derived from Greek **'pygmaios'** meaning a measure of length corresponding to the distance between the elbow and knuckles. In Greek mythology the word describes a tribe of dwarfs, first described by Homer.

The best known pygmies are the Aka, Efe and Mbuti in Central Africa. There are also pygmies in Australia, Thailand, Malaysia, Indonesia, the Philippines, Papua New Guinea and Brazil. The term also includes the Negritos of South-east Asia. Many scholars believe that the pygmies once made their home throughout Central Africa, in the thick tropical forests. Today, most of them live in a much smaller area than in the past.

9.2.2 Distribution

Pygmies live in several ethnic groups in Rwanda, Burundi, Uganda, the Democratic Republic of the Congo, Central African Republic, Cameroon, Equatorial Guinea, Gabon, Angola, Botswana, Namibia and Zambia. It is estimated that there are between 2.5 and 6 lakh pygmies living in the Congo forest. However, although pygmies are thought of as forest people, some groups live in open swamps and in the desert.

Concentration of Pygmies

9.2.3. Groups

There are at least a dozen pygmy groups, sometime unrelated to each other, the best known being the Aka and Baka (Mbeng) of the Western Congo basin.

The various tribes of Pygmies are classified on the basis of their languages and habitat: eastern groups, central groups, western groups and Twa (Batwa) groups. There are many sub groups in the major groups.

The Eastern Pygmies of Africa consist of Mbuti who live in the Ituri rainforest of Zaire. They speak Bantu and Central Sudanic languages. The Central Pygmies are scattered in the Congo Republic. The Western Pygmies such as Bongo, are found in Gabon along the coast of the Atlantic Ocean and the hinterland. Another well-known group in the Congo basin is the Twa, which speaks Bantu, Rundi and Kiga. They also live in the high mountains and plains around lake Kivu in Zaire, Rwanda and Brindi.

A large group of Tswa (Batswa) like the Twa, live in the marshes, south of the Congo river. They have adopted much of the culture and languages of the neighboring tribes, like fishing and trapping. Another group namely Babinga which is also culturally very close to the Pygmies, is found to north of Congo, is the forest of Ubangi river. Twa and Tswa are mainly nomadic hunters and food gatherers.

9.2.4 Physical features

As mentioned earlier, basically the Pygmies are short in stature and are very different from all other tribes. The average height of the pygmies is 136 cm (4.56'). The average height of males is 146 cm. and that of females is138 cm. They have proportionate body size and weight according to their stature. The average weight of the body is 75 lbs (pounds). The colour of the skin ranges from yellowish to very dark brown (chocolate brown). They have pragmatic jaws, broad flat nose, large eyes and dark woolly hair. Both body and legs are short, the shape of the head is typically round and there is some protrusion of the face. The lips are averted, the root of the nose is flat and broad and long arms and toes and broad feet.

9.2.5 Habitat

The pygmies formerly inhabited the dense forests of Central Africa. But this tribal group is found at present mostly in the Congo basin of Africa, situated on both sides of the equator. It has hot and humid climate. The average monthly temperature is around 27°C throughout the year, except in areas of high altitude. The rainfall, which is convectional in nature, occurs all through the year. The maximum rainfall occurs in March and September along the equatorial area. The average annual rainfall over a greater part of the Congo basin is above 250 cms.

Due to the high temperature and heavy rainfall, the Congo basin is covered with luxurious evergreen forests. The forests consist of many species of trees with a wide variety of epiphytes. The trees grow to great heights, but the number of species of economic importance is small. The thick forest provide shelter to many wild animals such as elephants, tigers, leopards, rhinoceroses, apes, etc.; creeping animals like snakes, lizards, etc. The rivers are full of crocodiles and alligators. There are many mosquitoes, insects, birds etc. The forests provide a variety of products to fulfill the basic needs of the Pygmies.

9.2.6 Occupations and food

The previous paragraph explains the habitat of the Pygmies in the forests of central Africa. The Pygmies are forest dwellers and know about the forests, its plants and animals intimately. Most Pygmies are traditional hunters and food gatherers. They live by hunting animals such as rats, squirrels, birds, lizard, and occasionally monkeys and wild pigs.

The large carnivores animals such as tigers, panthers, leopards and elephants are dreaded and avoided. But hunting by the Pygmies is occasional and is confined to small game. The main weapons for hunting are bows and arrows, made from pliant long branches of trees and bamboo shaft respectively. The arrow tip is poisoned with a vegetable poison obtained from the gum of a tree. Besides arrows, they have short light spears, but no shield.

For larger game, the juice of a poisonous creeper, which is very powerful, is often added to the poisonous paste. Hunting includes the use of snares - a simple noose and spring trap. Pygmies hunt animals only for food.

Food gathering is another occupation of the Pygmies. It is mainly women's work, but men may also help. There is no cultivation of crops. They gather a wide variety of berries, nuts, leaves, shoots, especially roots, fruits, yam, mushrooms, etc. They also collect honey. They use sharpened rattan canes and wooden sticks for the digging out yam, roots etc.

Pygmies catch fish occasionally without fish hook or net. They use a bit of meat and a piece of string. They have little idea of cooking and both flesh and vegetable foods are usually eaten raw, although they occasionally roast or smoke their meat over an open fire. Sometimes they use long green bamboos, which can withstand the flames long enough to cook the food.

The main meal of the day is usually prepared towards sundown, but they also eat early in the morning. During certain season, there is a plentiful supply of fruits. During this time the Pygmies return to their own territory to gather this rich supply and feast on them. Though the Pygmies are physically small, they can eat at stretch about 60 bananas each when they are very hungry.

In recent years, their mode of occupation and food habits have changed due to several welfare programmes.

9.2.7 Clothes

The habitat of pygmies is hot and humid climate and allows them to live without clothes or with minimum clothes. Usually the clothes they wear are made of bark strip or vegetable fibres, which are tied, more or less, around the hips. Both men and women wear girdles and necklaces of leaves and seeds of creepers. But they are not used as clothing. The wooden comb with long teeth, worn by women, is prepared from bamboo.

9.2.8 Houses

Pygmies do not build houses. Because they are nomadic people, they very often shift their settlements from place to place because of their occupation which is hunting and gathering. Instead they make a kind of shelter (hut) which is like a large beehive. It is about 7 ft. in diameter and only 4 ft. in height. Thin branches of trees are first stuck into the ground and then bent over at the top and fastened together. The frame work is covered with creepers or leaves and bark of trees. A small narrow gap, 1½ ft. in height, is left to enter into the hut by crawling. In each hut there are about 8 or 9 people. Each camp contains 10 to 12 huts. Some camps consist of about 30 huts.

9.2.9 Social system

There is no script for the spoken language of the Pygmies. Consequently there is no information regarding their ancestors or their traditions, customs, religion etc. In each hut there are 8 or 9 members who obey the one whom they call their chief. The Pygmies have no political or tribal organization. But they have great respect for their chief, who settles the quarrels, selects the site of new camps, directs hunting trips etc.

People who move often and carry all their possessions do not own much property. They have a few pots of clay, a few gourds in which to hold water and the weapons with which they hunt.

The marriage of pygmies is simple. They usually follow a monogamy system. But there is no restriction for polygamy but polygamists are very few. Before marriage, the young man has to give some gifts of daily requirements to the parents of the girl. That is considered as 'pledge'. Besides a knife, a spear, two sets of girl's clothes, a chain and two bangles of iron have to be given to the relatives of the girl. The Pygmies have fully adjusted themselves to their natural environment. They are calm and tranquil, are cordial, have friendly relationship with others.

The Pygmies are music lovers. They are particularly known for vocal music, which is characterized by dense contrapuntal communal improvisation. Music permeates their daily life and there are songs for entertainment as well as for specific occasions and activities. Polyphonic music is common among the Pygmies..

The Pygmies love their forest and see it as the giver of life. It provides them with clothing, food and shelter. In return, the Pygmies try not to harm the forest. They perform various ceremonies to maintain friendly relations with the natural and supernatural worlds.

9.2.10 Trade

The trade practiced by Pygmies is known as **'silent trade'.** The Pygmy hunters go by night to the groves of their neighbours who are agriculturists and place there a quantity of meat wrapped in leaves which on the next day they find exchanged for grain or other agricultural products. The value of the goods deposited in each transaction is roughly equal. However there is a certain amount of injustice and even exploitation towards them by the Bantu traders who are more powerful.

Some of the Pygmy groups live in much closer relation with the settled cultivators and this is convenient to barter forest products for agricultural products. Several Pygmy groups are tacitly attached to Negro villages and have understanding for the barter of game for agricultural crops.

9.2.11 Slavery

When the Pygmies lived in the primitive stage of civilization they were slaves of the nature. However the pathetic thing is that in the Republic of Congo, about 5 to 10% of the Pygmies live as slaves to Bantu masters. The Bantus are the neighbouring cultivators. The

country is deeply stratified into these two major ethnic groups. The Pygmy slaves belong from birth to their Bantu masters in a relationship that the Bantus call a time-honored tradition. Even though the pygmies are responsible for much of the hunting, fishing and manual labour in jungles, the Pygmies and Bantus alike know that the Pygmies are often paid at the master's whim; in cigarettes, used clothes or given nothing at all.

9.2.12 Are Pygmies on the decline?

In recent decades, the number of Pygmies who follow the traditional way of life has declined rapidly. No one knows definitely why the number of Pygmies is on the decline. But one case study on the Pygmies of Africa conducted by the American University has concluded that deforestation has greatly affected their every day lives. Pygmy culture is threatened by the force of political and economic change. Pygmies have always been seen as inferior and there is a systematic discrimination against them.

Pygmies are often evicted from their land and given the lowest paying jobs. They are not considered as citizens by most African states and refused identity cards, deeds to land, healthcare facilities and proper education. Government agents and multinational agencies are involved in massive deforestation which is forcing more Pygmies out of their traditional homeland. This is the greatest problem facing by the Pygmies. Due to shortage of activities in the forests, the Pygmies have been pushed into populated areas to join formal economy, working as casual laborers or on commercial farms.

The Bantu people have invaded much of the Pygmy territory and cut down the forests to grow crops and to set up villages. The construction of roads, and settlements in the forested areas are other reasons for the loss of territory of the Pygmies.

There are roughly 5 lakh Pygmies left in the rainforest of Central Africa. This population is rapidly decreasing as poverty, intermarriage with Bantu people, westernization and deforestation, all join to destroy their way of life and culture gradually along with their genetic uniqueness.

9.3 ESKIMOS (INUIT)

9.3.1 Nomenclature

The term **'Eskimo'** comes from a Native American word that may have meant **'eater of raw meat'**, or **'speaker of a foreign language'.** But they are now called Inuit, which means the people or real people. It comes from a language called Inuit-Inupiaq.

The Inuit Circumpolar Conference in Barro, Alaska, in 1977 officially adopted 'INUIT' as a designation for all Eskimos, regardless of their local usage,. However, the Inuit Circumpolar Council, as it is known today, uses both 'Inuit' and 'Eskimo' in its official documents.

Eskimos are indigenous people who have traditionally inhabited the circumpolar region from eastern Siberia across the Alaska-Canada and Greenland.

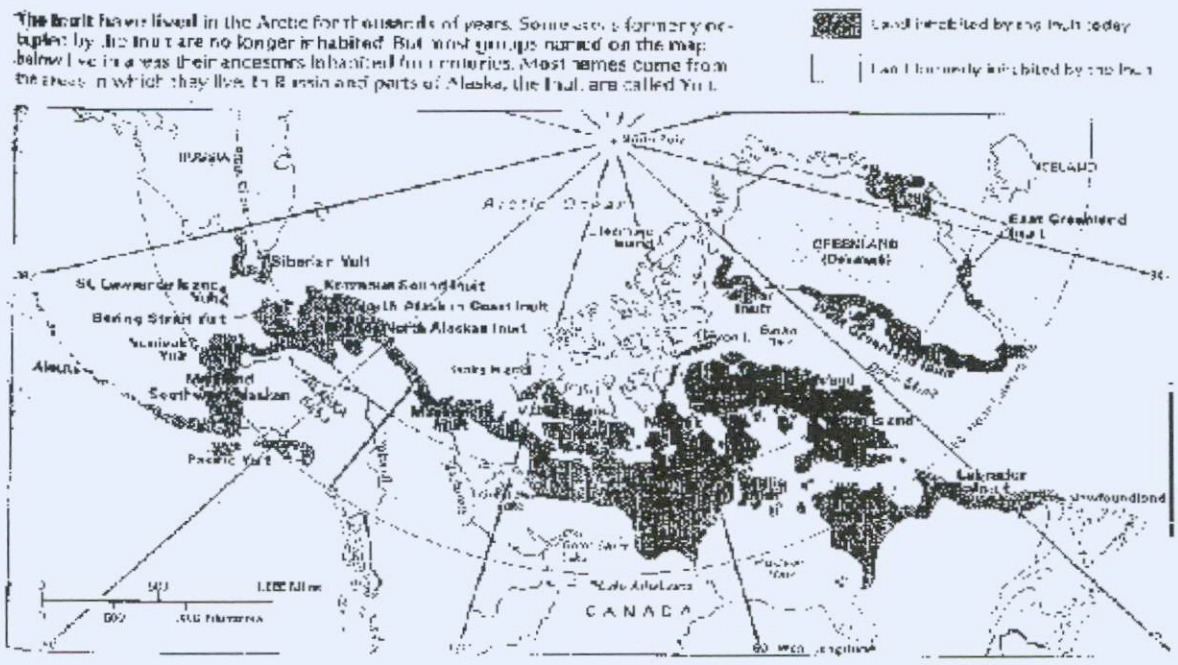
There are two main groups that are referred to as Eskimo are: Yupik and Inuit. A third group, the Aleut, is related.

9.3.2 The land of the Eskimo

The Eskimos live in one of the coldest and harshest regions of the world in the Northern Hemisphere. They live in and near the Arctic region. Their homeland includes the north-eastern tip of Siberia, the islands of the Bering Sea and the coastal regions of mainland Alaska. They also live in the northern coast and islands of the Canadian Arctic and a greater part of the west coast and a part of the east coast of Greenland. The total Eskimo population is about 8 lakhs (1991).

9.3.3 Physical Environment

Human life in the inhospitable regions of the world is largely controlled by the environment. The Arctic and Antarctic regions are good example of this. The mode of life of the Eskimos is greatly influenced by the physical environmental factors which are as follows:



9.3.4 Climate

The elements of weather and factors of climate impose special conditions on the life of human beings, plants and animals. The life style of Eskimos is greatly controlled by the climate. Most of the Eskimo land, which is the Arctic region has long, cold winters and short, cool summers. The average temperature in the region is above freezing point for only two or three months a year. During the coldest months, average temperature is between -29° and -34°C. Annual snowfall averages between 38 and 229 centimeters. Little of the snow melts until spring and the winter storms have wind-driven snow. The main danger to the inhabitants is from the strong winds, blizzards and storms. These can force the people to remain inside for days at a time.

However, because the snow contains much less water than rain, the average precipitation (rain, melted snow and other forms of moisture) totals only 15 to 25 cms. per year. Such scarcity of precipitation makes the Arctic region technically a desert (cold desert).

Ice sheets cover parts of northern Canadian islands and most of Greenland all through the year. The rivers, lakes and the sea remain frozen for a greater part of the year.

The gales and blizzards are a serious threat to the nerves and the thermic balance of the body. When the wind blows towards the shore, it often piles up ice on the beaches.

Continuous darkness for several months has an adverse psychological effect on the people.

9.3.5 Plants

The Arctic region is a huge treeless plains called the 'Tundra'. The ground remains permanently frozen on account of severe cold and snowfall. There are no forests. The Tundra vegetation consists of small shrubs, mosses, grass-like plants called sedges and tiny flowering plants. Lichens grow mainly on rocks. During the short summer season, colourful flowers bloom in great abundance.

9.3.6 Animals

Seals, walruses and whales live in the sea, and polar bears on the sea ice and along the Arctic shores. The Tundra climate supports the animals like caribou musk oxen, wolves, foxes and hares. Many of these animals migrate to the south annually in winter and are available to the Eskimos hunters for only few months each year.

Numerous ducks and geese come in summer to the Arctic region where they build their nests and rear their young ones. Some birds like Ptarmigan reside all the year round.

The animals of this region adapt themselves to the severe cold. Warm blooded animals do not hibernate because of the very low temperatures.Their bodies are covered with closely set thick fur and very fine hair as in the case of hares.

The fish of this region includes Arctic char, Arctic cod, lake trout, salmon and whitefish. Salmon fish is rare, but a large number of other types of fish swim up the rivers for long distances in spring, and return to the sea in late summer before the rivers freeze again.

The most important characteristic of both the animals and plants of this cold region is the limited number of species. In general, the more severe the cold, the fewer the species.

9.3.7 Racial features

The Eskimos belong to the Mongoloid race. They are of short stature with flat but narrow faces, small snub noses, yellow-brown skin and coarse straight black hair. The average height ranges from 157.5 to 167.6 cms.

9.3.8 Food

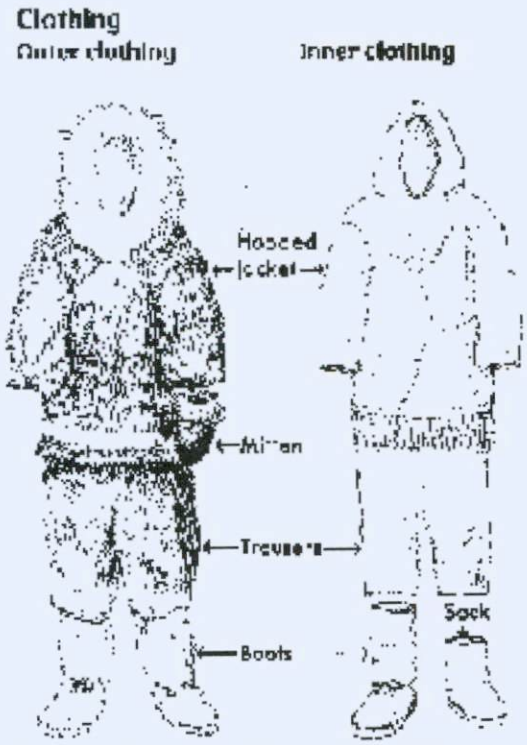
The diet of the Eskimos varies according to location and season. On the Alaskan and Labrador coast they eat the meat of whales. In other parts of Alaska they eat the meat of caribou during the entire winter. They also get meat from smaller animals, i.e. hare and fox.

The Eskimos also catch fish from the sea, lakes and rivers for food. They eat berries and other plants when they were available Delicacies included items such as the skin of beluga whales and fat from the backs of caribou.

The Eskimos often eat the meat raw or frozen. When they cook meat, they use pots made from soapstone. Soapstone lamps are fuelled with blubber or oil from seals and whales. A curved knife called the ulu, which is used to prepare their food, is made of slate or metal. They use wooden plates and bowls, forks are made of bones and cups made from the horns of musk oxen. The food habits of Eskimos have changed in recent years. They now use other types of foods which are imported. However they are not easily available. They have also become accustomed to tobacco, coffee and tea. Very often they suffer from hunger due to scarcity of food.

9.3.9 Clothing

The Eskimos prepare their clothing from fur bearing animals like the reindeer and other animals. But they prefer caribou skin. Skins from seals, foxes, polar bears and others are used as substitutes for reindeer skin. Styles vary from region to region, but in all regions, the men, women and children wear the same general outfit. It consists of a hooded jacket called **'parka',** trousers or leggings, socks, boots, and mittens. They often decorate their clothing with furs, beads and good luck charms such as carvings or parts of animals.



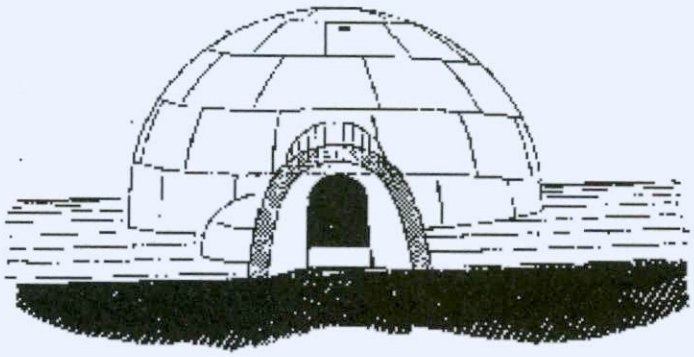
The Inuit make most of their clothing from caribou skin. In cold weather, they wear two suits. In warmer weather, they wear only the inner suit of caribou skin or seal skin suit

The parka fits loosely over the head, neck and shoulders. Women often carry the young children in the packs or hoods of their parka. Most Eskimos wear two layers of clothing in winter. In the warmer season, the Eskimos wear only the inner suit of caribou or a suit of sealskin. Sealskin is used to make tightly sewn boots.

9.3.10 Shelter

The houses of Eskimos are distinctive. They have both summer and winter dwellings. During summer they live in tents made with wooden frame and covered with seal or carbou skins. Within the tents are raised platforms at the rear where the people sleep.

In winter the Eskimos construct snow houses called **'Igloos'.** They are temporary shelters for migratory Eskimos. But the Eskimos of Central Canada and northern Canadian Arctic islands lived in igloos all through the year



Eskimos can construct a snow house in about two hours. First they cut blocks of hard snow using a long, straight knife made from whale bone. Then they keep the blocks in continuous, circular rows. The circles become smaller and smaller upwards and form a dome shaped house. The roof and walls of the igloos are lined with skins in order to keep them warm inside. There is a narrow passage for entrance.

At present, some of the Eskimos, who live along the shore construct permanent stone or wooden house. The stone houses are rectangular in shape, 3-4 metres in size. They have a long narrow entrance passage.

9.3.11 Transportation

During the winter months, most Eskimos travel on sledges. In summer, they walk on land or go by boat over water. The sledges are drawn by dog-teams. Usually the sledges are built of whale bone or of wood where it is available. There are two basic types of **sledges; plank sledges** and **frame sledges.** The first one is mostly used in Canada and Greenland and looks like a long ladder. The second one is used in Alaska and Siberia and looks like a basket.

The Eskimos keep as many dogs as they can feed, for the purpose of pulling the sledge, for hunting etc. In summer many Eskimos use dogs to carry packs as they move from place to place.

The Eskimos use two types of boats, namely the **'Kayak'** and the **'Umiak'.** The kayak has a narrow body pointed at both ends and resembles a canoe. Its body is built of wooden frame covered with seal or caribou skin. Kayaks are normally used for hunting and can carry one or two persons. Modern boat builders generally make fibre glass boats that copy the Kayak's design.

The Umiack is a large open boat that usually carries 8 to 10 people. They are used for long distance travel. The Eskimos haul their belongings in this type of boats when they move camp. They are also used for hunting walruses and whales.

Central Eskimo Dog in Harness

9.3.12 Hunting and Fishing

Hunting and fishing are the most important occupations of the Eskimos, and is done mainly by the men. Hunting and fishing provides almost all the food and other requirements of the Eskimos, such as raw materials for their clothing, shelter, tools, weapons, etc. The Eskimos mainly hunt seals and caribou. But they also hunt whales, musk oxen, polar bears, hare and birds for food.

The Eskimos hunt seals using different methods during different seasons. They use harpoon, ice edge and bone plugs to kill the seals. Eskimos hunt caribou by shooting them with arrows from small, stout bows and spear them. The whales are hunted by shooting them with darts which are long, spear-like weapons that are tipped with poison. The hunters trap foxes in stone traps, catch polar bears in huge stone traps and use hunter dogs. They set snares to catch birds and hares, kill birds by throwing multi-pronged spears into the flocks.

During the short summer, the Eskimos fish in shallow streams and seas near the coast. They placed rows of rocks in the streams to divert the fish towards them. They usually fish with a three pronged spear called a **leister.** During a greater part of the year they fish through holes in the ice.

In summer a number of edible berries, roots and vegetables are also carefully collected by the Eskimo women. The quantity is very small, but they are luxuries but do not add very substantially to the diet.

9.3.13 Religion

The Eskimos believe that all people, animals, things and forces of nature have spirits. The other spirits include wind, weather, the sun and the moon. The most important spirit is a goddess called **'Sedna'.** She lives at the bottom of the ocean and governs the sea animals i.e. seals, whales and other sea mammals. **Thornnassuk** is their God.

The Eskimos believe that if they ignore the special rules to please the spirits, they might punish them by causing sikness or other misfortune.

9.3.14 Society

The society of Eskimo is paternal, in which the oldest man commands the greatest respect. In every group of Eskimos, the old man presides at the ceremonials and festivals, selects the fishing sites and assigns each family its proper place. He sends the hunters in different directions and selects the meeting place.

The hunting and fishing products are not kept by individuals; they are handed over to the 'old man', whose wife distributes them. The young men are well trained for hunting. The leader of hunting group is called **'strong man'.** He organizes the defence of the group or its territory. Before big hunts (spring season) long rituals of worships are performed for the success of the venture.

In summer several bands of Eskimos join together for festivals and ceremonies. On such occasions they have games and competitions. The most popular games are the **'blanket toss'** and **ajegag,** in which a bone is drilled with holes.

The common implements of the Eskimos are the bow and arrow, salmon spear, kayak boats, snowshoes, the blubber heating lamp, ridge pole tent and the harpoons. But in the Arctic region the main accessories are the dog sledge, igloos and ice hunting tools.

The mode of life of Eskimos in Tundra region has produced a unique culture - i) they depend

on animals, which sustain their lives, ii) they move from place to place for hunting and iii) they cannot be attached to one piece of land. The cycle of animal life dictates the pattern of traditional Eskimos activity.

The marriage system of the Eskimos is very simple. The marriages are pre-arranged and are quite successful. Marriage without love is the rule in the Eskimo society. Monogamy is practiced.

9.3.15 Arts and Crafts

The Eskimos have developed skill in carving or decorating the things they use everyday i.e. needle cases, snow goggles, combs, pins and many such items. They are made from the bones or antlers or the ivory of walrus. They decorate their clothes with some patterns and dye the skins of seals and fur.

9.3.16 New ways of life

Modern life style for the Eskimos began in the early and middle 1900s, due to the impact of Europeans, who arrived there. The Eskimos had difficulty in adopting the European lifestyles. Their way of life changed in various ways in Alaska, Canada, Russia and Greenland.

The Eskimos were faced with some problem after the arrival of Europeans. Their methods of hunting with rifles and trapping of animals on a large scale greatly reduced the number of game animals. Fur trade declined and most Eskimos could not find work etc. The concerned governments established programmes to improve the living conditions of the Eskimos, but many of them still live in poverty. However, the governments continue assisting them and provide health care, housing and education for the welfare of the Eskimos.

9.3.17 The Eskimos Today

The recent studies on Eskimos reveal that their traditional mode of life is changing fast. They live in wooden homes rather than in **snow houses, sod houses or tents.** They wear modern clothing instead of skin garments. Most of them speak English or Russian in addition to their native language. The Kayak and Umiak boats have given way to motor boats and snowmobiles have replaced the dog team. Christianity has taken the place of most traditional religions.

They cease to practice subsistence economy and have been drawn into fur trade. Some Eskimos have adjusted to this new way of life but many suffer from unemployment and other problems. After the introduction of mining, industries, and nuclear power, environmental pollution has started and affected their traditional homeland and food resources.

9.4 BUSHMEN (SAN)

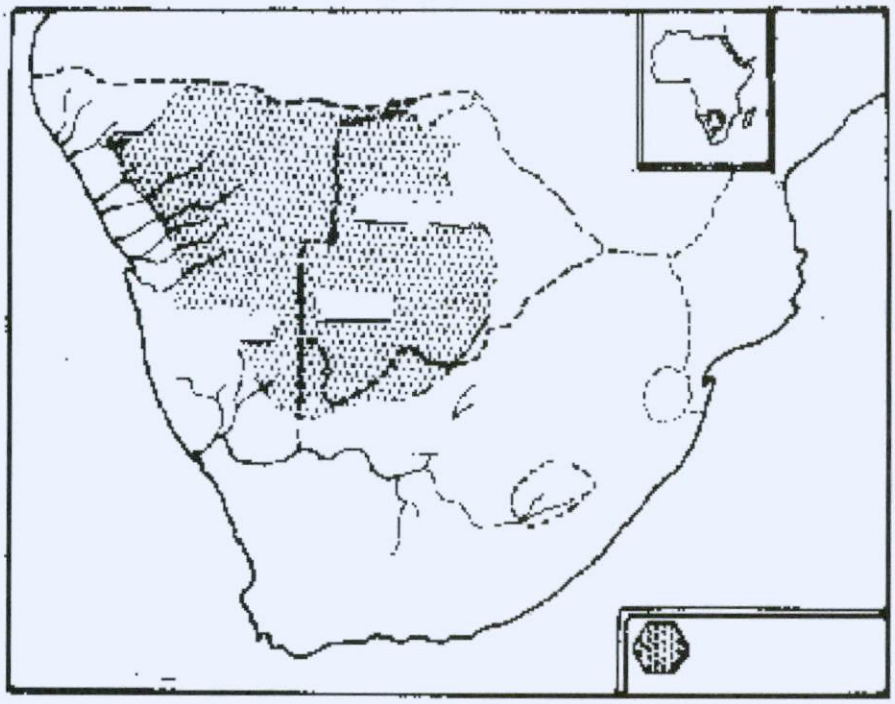
9.4.1 Introduction

The term **'Bushmen'** was first used by the Europeans. It applied to the **'Hottentots'** in South Africa. According to another source, the term Bushmen was derived from Boschimanmer/Bosjedman, given to them in the 17th Century by the British and Dutch settlers. The Bushmen are sometimes called **'San'.** Now most anthropologists use the term 'San'. Another name for the Bushmen is **Basarwa,** and it is used mainly in Botswana. Among the aboriginals of the world, Bushmen are unique.

9.4.2 The Territory of the Bushmen

Bushmen are a people of Africa, most of whom live in the Kalahari desert region of Botswana and Namibia. Archaeological and historical evidences reveal that the Bushmen groups were formerey found over a much larger area of the continent of Africa than they now occupy. It is believed that they were driven by other people into their present territory.

The land of the Bushmen is to the west of Drakensberg Mountains and south of Zambezi river to the Atlantic Ocean, but they are largely found in the Kalahari region and in parts of Zimbabwe. There they are usually known as the Bushmen of Kalahari desert.



9.4.3 Habitat

The territory of the Bushmen has sub-tropical climate. Both diurnal and seasonal temperature is high. During the day the temperature is more than 45°C and in contrast it is 10°C at night. The annual average temperature is above 32°C. Average rainfall is 25 cm and usually occurs in summer. The eastern part of Kalahari region (eastern mountains and coastal area) receives more rainfall, and is forested. But the western part receives little rainfall, which is only enough for grass and thorny scrub. This area is known for animals which are the Bushmen's wealth. There are herbivores and carnivores animals. Many species of antelope, giraffe, ostrich, zebra, elephants, rhinoceros, hippopotamus and quagga are preyed upon by a large number of carnivores i.e. lion, leopard, wild cat, lynx, hyena and jackal. In recent years there is a decrease in the wild life due to continuous hunting.

Permanent water supply is found only in depressions of the stream beds and on low mud flats or pans which are across the water table.

9.4.4 Physical stature

The Bushmen are taller, 150 cms (5 ft.) being the average height. They have yellowish brown skin and tightly coiled black hair. Because of its appearance the hair is known as **'pepper corn hair'.** There is very little hair on the face and body. The head is extremely small, low in the crown, and in shape intermediate between long and round. The width of the cheekbones combined with the narrowness of the forehead gives them a special appearance. The nose is broad and flat. Their face is irregular in outline, flat in appearance, with a weak chin. The eyes are dark, narrow and slightly oblique. The ears usually have no lobes.

The Bushmen speak **'Khoisan'** language which is characterized by clicking sounds.

9.4.5 Food

The Bushmen struggle for their daily needs and wander about in search of food. They are both vegetarian and non-vegetarians. The wild plants provide the Bushmen with most of their food, which includes berries, melons, nuts, roots and seeds. They also eat small animals like ants, lizards, tortoises, frogs, bees and locust. The edible fruits are less abundant, but the animal food supply is more. The meat of hunted animals provides food for the Bushmen.

After killing a large animal, the hunters share the meat with the whole group. The women usually gather the plants, while the men hunt animals with bows and poison-tipped arrows.

9.4.6 Clothing

The clothing of Bushmen is scanty and generally consists of skins of animals. Men wear a triangular loin cloth, its pointed end is drawn backwards between the legs and the women wear a square front apron hanging from the waist belt. The older women sometime wear an apron at the back and suspend it from the shoulder. But the most important item of women's dress is the cloak, locally known as 'Kross'. It is both a garment and a hold-all, tied at the right shoulder and holds the baby, food, etc in its folds. Men often wear a light cloak. Children do not wear any clothes.

Beads of dried wild berries and necklaces made from disks cut from ostrich egg shells are worn by both men and women. Ear-rings made from pieces of bone or wood, leather arm and leg rings, together with fillots of skin around the head, stuck with ostrich and other features are also worn. Now the dress mode of Bushmen has now changed.

9.4.7 Shelter

In the past, the Bushmen's dwellings were caves or holes in rocks or shelters made with a few branches stuck in the ground, with skins or mats thrown over then. They carried them when they migrated to another camp. Such temporary shelters are known as **'Flimsy'.** They are about 3 feet in height, semi-circle in shape with one side always open. In front of it is a place to light the fire for protection from the wild animals and cold winter. During the rains their living condition are pathetic

9.4.8 Hunting

Earlier, the Bushmen hunted animals and gathered wild plants for food, just as the prehistoric people did. Today, however, only a few Bushmen follow the traditional way of life. Hunting plays a greater part than food gathering. They do not cultivate the soil and have no domesticated animals except dogs. They are therefore depend entirely upon hunting.

Usually men go out almost daily to hunt. The hunting methods vary with the season and the prey. The men go out with their sons or other relatives and dogs. They move about with bows and poisoned arrows. Some of the Bushmen hunters are very skilled in the use of disguises and imitate the cries of the young animals. Occasionally, when more food is required, all the Bushmen go in a group for which there is careful preparation before hand. When large game is brought it is in generally shared among all. The hunters keep the valuable hide and sinews and direct the division and distribution of the meat.

9.4.9 Social Life

The Bushmen have practically no tribal organization and very little clan life. Traditionally, the Bushmen families lived in groups that averaged about 25 people. Each group occupied its own territory. During a part of the year, the group moved from place to place within its territory. But at other times, the group stayed for many weeks near a water source with other groups.

Each group has a leader or chief. Most of the activities and social life of the families of the group are under his directions. He also defends the families of the group against intruders. There is a good harmony and fellow feelings within the groups.

Among the other social customs, marriage and traditional dance are unique. Marriage system with the Bushmen is very simple. Some of the Bushmen are monogamists and some are polygamists. Two young people very often simply go off and live together, but usually the young man has to prove his prowess by slaying some strong and fierce wild animal and present it to the girl's father. If the present is accepted, the marriage is finalized. Divorce too is simple. A man or women leaves his or her partner and goes off with some one else.

The Bushmen are passionately fond of dancing, especially at full moon and certain seasons of the year.

The lifestyle of Bushmen is integrated with their environment. Hence there is great struggle for survival. During severe drought they take great care of the women and when hunting, they do not hurt young ones. They use minimum amount of wood, store water in ostrich shells and use almost every part of the animal they hunt. The ostrich egg shells are

used as water containers. They are bartered for iron-knives, spearheads, millets and tobacco. They also barter honey, wax, feathers, ivory, skins and beads.

The life style of Bushmen is a typical example of man's relationship with the natural environment. Today, however, only a few Bushmen follow the traditional life style. Much of their land has been taken away by the other Africans, including the many whites of European descent. Many Bushmen now live in permanent settlements where they depend on welfare schemes. Others work on cattle farms. Some work in the military of South African countries.

9.5 LET US SUM UP

In the text of this unit we have tried to explain some aspects of the way of life of some aboriginal people living and struggling in the equatorial, tundra and desert regions of the world, namely, the Pygmies, the Eskimos and the Bushmen. These are noteworthy differences and diversity in their culture, religion and social and economic organizations. Unfortunately these people are still being exploited by outside world. They also suffer from the consequences of changing climate, constant deforestation and killing of wild life.

For some they are a symbol of spiritual values, to others they are an obstacle to economic progress. Some live according to their traditions, some are on welfare, others work in factories and some others in other professions. They have maintained a close contact with the land, have respect for the earth and the life it supports.

In the last few decades the aboriginals have suffered greatly due to various developmental projects. They have been separated from their homeland and life style, deprived of means of livelihood and forced to adjust into societies in which they feel like aliens.

9.6 KEY WORDS

Blizzard : a strong bitterly cold wind that is accompanied by dry powdery snow/ ice crystals.

Caribou : North American reindeer.

Gale : a term commonly applied to any very strong wind.

Hibernation : To pass the winter, especially in a sleeping state, like certain animals.

Habitat : The environment of an organism or group of organisms.

Ice sheets : a permanent layer of ice covering an extensive tract of land.

Igloos : an Eskimo dome-shaped house (dwelling), especially one built of blocks of snow, during winter.

Kayak : the Eskimo (Inuit) of Northern Canada, Alaska and Greenland, traditionally used boats called as Kayak, to hunt sea mammals.

Parka : a skin jacket with a hood, worn by Eskimos in cold winter.

Sledge : a vehicle on runners for conveying loads or passengers, especially over snow drawn by dogs or reindeer.

Silent trade : a method by which people with no common language could barter goods. It is also called the dumb barter or depot trade.

9.7 QUESTIONS FOR SELF STUDY

1. Describe the primitive and modern life of the Pygmies.
2. In which countries do the Inuit live today? Explain their mode of life.
3. Write a note on any two of the following:
   i). Explain the food, clothing and shelter of Bushmen.
   ii). Give an account of Eskimos traditional way of life.
   iii). Describe the physical features, habitat and food of pygmies.

9.8 FURTHER READINGS

1. Daryall Forde. C.: ***Habitat, Economy and Society***, Methuen and Co. Ltd., London
2. Majid Hussain: ***Human Geography***, Rawat Publication, Jaipur, India

UNIT : 10 TRIBES AND TRIBAL REGIONS OF INDIA

Structure

10.0 OBJECTIVES

After studying this unit, you will be able to

- Define the meaning of tribes.
- Identify with the classification of Indian tribes.
- Analyse the characteristics of tribes in India.
- Identify the geographical distribution of Indian tribes.
- Identify the major tribes of India.

10.1 INTRODUCTION

In preceding lesson we have studied about three important ethnic groups of the world, namely the Pygmies, Eskimos and Bushmen. The habitats of these tribes are associated with three distinct climatic zones of the world. i.e. Equatorial, Polar and Desert regions respectively. Hence naturally their mode of life is varied from one to the other.

In this lesson, let us look into the life of tribals in India. The tribal groups represent an important social category of Indian social structure. India is a country of multiracial stock. Different tribal groups occupy the different geographical locations in the country and having their own lifestyle. The tribal population in India was 67.76 million according to 1991 census.

10.2 MEANING OF A TRIBE

There is no unanimous view among the sociologists and anthropologists regarding the meaning of the term 'tribe'. It has been defined variously. Let us examine some of the definitions:

1. A tribe is a "collection of families bearing a common name, members of which occupy the same territory, speak the same language and observe certain taboos regarding marriage, profession or occupation and have developed a well assessed system of reciprocity and mutuality of obligations" - **D.N. Majumdar**
2. Tribe is "an ethnic category, defined by real descent and characterized by a corporate identity and a wide range of commonly shared traits of culture" - **S.C. Dube**
3. "A tribe is a group of local communities which lives in a common area, speaks a common dialect and follows a common culture" - **Gillin and Gillin**
4. A tribe can be defined as "a group speaking a common dialect and inhabiting a common territory" - **W.J. Perry**

But **Andre Beteille's** is of the opinion that the definitions mentioned above appear to be inadequate in many respects. He identifies some limitations of the anthropological definitions of a tribe when applied to the Indian tribes. i.e. there is no separate political boundary, there is changing linguistic boundary, there is vague cultural boundary, there is vanishing homogeneity of the Indian tribe etc.

Tribes in the Indian context today are normally referred to in the language of the constitution as 'Scheduled Tribe'.

The term tribe is used in discriminately. A few examples of the use of the term **'tribe'** can be cited in this regard – Tribals are commonly referred to as **'Adivasis', 'aboriginals', 'the hill tribes'** (Census), **'primitive tribes', 'Adipraja', 'Girijan', 'Aranyavasis'** etc.

10.3 CHARACTERISTICS OF TRIBES

The following are the some of characteristics of tribes:

1. A tribe is a common territorial community. It means the tribe has a definite territory in which its members reside. i.e. Nagas reside in Nagaland.
2. Every tribe has its own distinctive name. For example; Garo, Khasi, Thodas, Badaga etc.
3. The tribals constitute a connection of families, which normally have blood relationships among themselves.
4. The members of a tribe speak a particular language. Different tribes speak different languages. But they do not have a script of their own.
5. The members of a tribe usually practice ancestral worship and nature worship. The tribal social and political organizations are based on religion.
6. Every tribe has its own lifestyle, - own customs, traditions, morals, values, culture etc.
7. A tribal society is not complex but simple in character. Hunting, fishing and collection of roots, fruits, nuts, berries, honey and forest products are their main means of subsistence.
8. There is less diversity and more unity and uniformity in a tribal group. They have feeling of unity.
9. The members of tribe generally marry within their own group. This is called endogamy, but it is not always.

10.4 CLASSIFICATION OF INDIAN TRIBES

There is no unanimity in the classification of Indian tribes. On the basis of territorial, ethnic and socio-cultural factors, Indian tribes are classified in different ways. They are as follows:

B.K. Roy Burman's Classification

Roy Burman classified the tribal communities of India into five groups on the basis their territorial, ethnic and socio-cultural relations.

1. **The North-East India Region**: It includes the tribals of Assam, Arunachal Pradesh, Nagaland, Manipur, Tripur, Mizos etc. The important tribes of this area are the Nagas, Mizos, Kukis, Khasis, Garos, Ahoms etc.
2. **The Sub Himalayan Region**: It includes Northern Uttar Pradesh, Uttaranchal and Himachal Pradesh of North and North West India. The Gujjars, Bodh, Kinnaurs, Swanglia etc are the main tribes of this region.
3. **Central and East India:** It comprises West Bengal, Bihar, Orissa, Madhya Pradesh, Chattisgarh and Andhra Pradesh. Some tribes of this region are the Santals, Munda, Ho, Oraons, Godi, Chenchu, Koya, Kolam etc.
4. **South India:** It includes the tribals of Tamilnadu, Kerala and Karnataka. The important tribes of this region are Kadu Kuruba, Jenu Kuruba, Hakki pakki, Kadar, Kurumba, Irula etc.
5. **Western India:** It comprises Rajasthan, Gujarat and Maharashtra, the Bhils, Kumbis, Mario, Gonds, Mahadeva Kolis are some of the tribes of this region.

Source of the tribes of mentioned above are generally associated with one particular zone. But, actually many of them are spread over many state of India.

Elwin's classification

On the basis of cultural development of the tribal people Elwin has classified the tribals of India into 4 classes.

1. **Class-I:** refers to those tribes which have been protected from contacts with the other groups on account of geographical conditions. These tribes retained their social organizations, cultures etc in their original form.

2. **Class-II:** refers to those tribes which have been experiencing contact with the other groups, but they have been undergoing changes.

   Even though they retain their tribal mode of life, they exhibit changes due to the influence of non-tribal groups.

3. **Class-III:** tribes which are only in name. They have become backward Hindus. They constitute a large number in the lower section of the Hindu society.

4. **Class-IV:** This class denotes a minority, which have secured the benefits of civilization without injury to themselves. They have adopted the Hindu faith. But they retain their old tribal name, clans and observe the rules of tribal religion.

10.5 GEOGRAPHICAL DISTRIBUTION OF TRIBALS IN INDIA

India has the second largest tribal population in the world next only to Africa. According to 1991 census tribal population accounted for about 8.08% of India's total population. As far as Karnataka is concerned, the tribals share is around 5% of the state's total population.

The tribes in India are spread over the country. But more than 70.8% of the total tribal population is concentrated in six sates. i.e. Madhya Pradesh, Maharashtra, Orissa, Bihar, Gujarat and Rajasthan. These are followed by Andhra Pradesh, West Bengal and Assam. The least tribal population is found in Tripura, Sikkim, Himachal Pradesh, Goa, Punjab, Haryana, Delhi and Chandigarh.

In some states and union territories the tribal population constituted 70 – 95% of the total population of the state territory. In fact Mizoram holds the first rank (94.8%), followed by Lakshadweep (93.4%), Nagaland (87.7%), Meghalaya (85.5%), Dadra and Nagara Haveli (78.9%) and Arunachal Pradesh (63.7%).

High concentration of tribal population (50 – 80%) is in 27 districts including Dadra and Nagara Haveli, Lahul and Spiti (Himachal Pradesh), Banswara and Dungapur districts (Rajasthan), Gumla (Jharkhand), Bastar (Chattisgarh), Valsad (Gujarat), Koraput and Sundargarh (Orissa), Saguaro and Dear (Madhya Pradesh).

Medium concentration of tribal population (20 – 50%) found in 42 districts of the country in the states of Manipur, Tripura, Chattisgarh, Madhya Pradesh, Sikkim and Orissa.

There is low concentration of tribal population in 226 districts (less than 20%) and lowest concentration in 172 districts in the country.

10.6 THE TRIBAL REGIONS

We have already realized that the distribution of tribes in India among the various states is not uniform. They are also not found only in any one particular region alone. Some tribes are predominant in a given region and others in another particular region. For example; there is a concentration of Nagas in Nagaland, Todas in Nigeri hills of Tamilnadu and Saligas in Biligiri Rangana Hills and Mahadeswara hills in Chamarajanagar district of Karnataka Dr. B.S.Guha has given a three fold territorial distribution of the tribals. They are as follows:

1. The North and North-Eastern Region
2. The Central or the Middle Region
3. The Southern Region

1. **The North and North-Eastern Region:** This region is includes Himachal Pradesh, northern Uttar Pradesh, Sikkim and seven North-Eastern states consisting of Assam, Meghalaya, Arunachal Pradesh, Mizoram, Nagaland, Manipura and Tripura. They are in the sub-Himalayan region and the mountains-hills of North Eastern frontiers.

   The important tribes largely found in this region are Naga, Angami, Sema, Garo, Khasi, Chakma, Gurung, Tharus, Bhotiya, Limbu, Lepcha, Mishmi, Aka, Mikir, Rabha, Kachari etc. These tribes mostly belong to the Mangoloids race and speak language belonging to the Tibeto-chinese family. Nearly 12.5% of the total tribal population is found in this region.

2. **The Central Region:** This region includes the mountains and hills of Central India. It lies between rivers Narmada and Godavari and includes Gujarath, Maharasthra, Madhya Pradesh, southern parts of Rajasthan and Uttar Pradesh, Bihar, West Bengal and Orissa. The important tribes of this region are the Gondi, Munda, Kandh, Baiga, Bhils, Bhuiyan, Bhumji, Koli, Savara, Khaira, Oraon, Santhal, Juong etc. Most of these tribes consists aboriginal of the population of India.

3. **The Southern Region:** This region lies to the south of river Krishna and includes Andhra Pradesh, Tamil Nadu, Kerala and Karnataka and also Andaman-Nicobar and Lakshadweep islands. The main tribes of this region are Chenchu, Kota, Kurumba, Badaga, Toda, Kadar, Soliga, Kanikar, Paniyan, Yerava, Urali, Koya, Muthuvan and so on. Most of these tribes are ancient inhabitants of the country. Nearly 65% of the total tribal population of the country is found in this region.

Besides, one more region (fourth) which is small one is added to this list by C.B.Mamoria.

4. **Andaman and Nicobar islands:** This is smallest and isolated tribal region, consisting of only 27,000 tribals and accounts for about 9.54% of the total population of the islands. The Jarawas, Onge, North Sentinelese, the Andamanese and the Nicobarese are the important tribes of this region. But the Andamanese is the smallest tribe and their number is only 19. Though they are numerically the smallest tribes, they are anthropologically very important.

10.7 IMPORTANT TRIBES

India is one of the ancient countries of the world. Therefore there are a number of tribals in the country and a large tribal population. They have their own peculiar ethnic and socio-cultural aspects. They are distributed in various parts of the country. In this lesson we will discuss briefly about some of the important tribes selected region wise.

10.8 NAGAS

Origin of the name

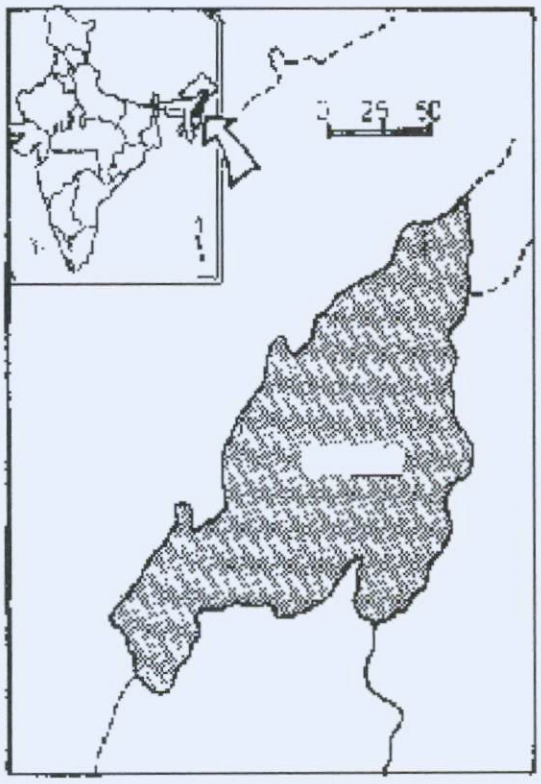
There is no unanimity regarding the origin of the term **'Naga'** and its meaning has been disputed by the social anthropologists. According to Hutton, the term **'Naga'** means the dwellers of Naga hills. In the view of Ptolemy and Shyahb-al-Din Talish the word Naga originated from **'Nanga'** meaning **naked**. According to cultural anthropologists the word **'Naga'** simply means people. They viewed that the correct from of Naga should be **'Noga'**, which is derived from the generic word **'Nog'** or **'Nok'**, both meaning **'people'** in the language of some of the Naga tribes.

According to Gait, the term **'Naga'** has been derived from **'Lok'** or **'Log'** or **'Nok'**, meaning **'folk'** or people (Hindi). Some believe that the Nagas immigrated from the place Naga in Philippines. According to Burmese the term **'Naga'** is derived from the word **'Naka'**, meaning people with pierced ears.

The Naga tribes belong to the Indo-Mongoloid race. It is believed that most probably Nagas moved south-east from Sinkiang a province of China and some of them entered into the present Arunachal Pradesh, through along the Brahmaputra valley. According to the myths and legends of the Nagas, one gather that they have some relationship with the natives of Borneo.

Sub tribes

The Nagas constitute a combination of several sub tribes. There are 19 major tribes, the important ones being the Aos, the Semas, the Angamese, the Chukiangs, the Lhotas, the Sangtains, the Konyaks, the Zilang, the Rengmas, the Changs, the Talamins, the Phoms, the Kachas, the Kabuis, the Marams and the Tangkhuls.



Territory

The Nagas predominately occupy the state of Nagaland and parts of Manipur, Assam and Arunachal Pradesh in North East India. In Nagaland where they account for about 88% of the total population of the state Nagaland. They are in good numerical strength in Manipur fallowed by Assam and Meghalaya and the border districts of Myanmar.

Habitat

The habitat of the Nagas is land-locked, mountainous area, characterized by elevated ridges, spurs and peaks of Naga and Patkoi hills. These are the part of southward extension of the Himalayas. In between the hilly areas, there are plains along a few narrow river valleys. The general elevation of the territory ranges from 900 to 3,800 meters above seal level. The terrain is highly complex. They are covered with dense forest.

The general climate of Naga's land is monsoon type. There are some little variations in temperature and rainfall distribution. The atmospheric temperature ranges from 15° to 26° Celsius. The average rainfall is 250 centimeters a year. However, there is a cold winter and moderately hot and humid summer. More than 80% of the rainfall occurs during the rainy season. In contrast the winter months record relatively less rainfall. But the sky remains occasionally overcart and cloudy during winter. In the month of January the temperature falls to 8°C.

The climatic conditions and the hilly features affects the flora and fauna. The vegetation types (flora) consist of tropical and temperate evergreens and coniferous forests. The low lying areas and ravines are covered with bamboo groves. There are small area of valuable virgin forests and they consists of Mahagony trees which are most valuable species. Ook and Pine and other Conifers trees are also found. Most of hill slopes have left deterious effect by way of shifting cultivation. The land abandoned after shifting cultivation is covered by secondary vegetative growth. i.e. grasses, reeds, bushes and broadleaved soft wood trees.

Land of Nagas has many kinds of monkeys including lemur, languor etc, Elephants, porcupines, rhinoceroses, sealy ant eaters, tigers and wild oxen are common. Besides there are many colourful jungle birds.

Physical traits

As mentioned earlier, the Nagas belong to the Tibeto-Mongolian stock and there are many sub tribes. Hence there is difference in physical stature, but there is not much changes. They are slight difference as in physiques, colour physique, colour and appearance but they have enough in common to distinguish them from other tribes. There are some specific differences between the northern and southern Nagas.

The Southern Nagas have some resemblance to the Chinese. Their stature is medium size, they have flat nose and a face with bulging jaw bones, semi opened eyes, straight black hair etc.

Food

Rice and mutton are the stable food of Nagas. Eggs and fowl meal are generally consumed during festivals and ceremonies. They do not eat the meat of tigers, leopards, wild dogs etc. rice is eaten twice a day with fish, pork, mutton or vegetables. But they do not prefer to consume milk and milk products. Cows are not milehcd, because milk and milk products considered as impure food.

The Nagas prefer to drink madhu or yi (a local brew) on occasions such as marriage and festivals. Usually older men use to drink rice bear. Tea is a popular beverage of the Nagas. Tea is generally taken without milk and sugar. Pan eating with lime and raw betel nuts known as Kowai is common. Tobacco smoking in pipes is also universal among the Nagas.

Clothing

The dress of the Nagas is varies from tribe to tribe and changes all the time. In the olden days cloth could be worn only by the head hunters. Now the situation has changed. The Nagas wear a plain white cloth, locally known as **'subsu'.** The female skirt consists of a piece of cloth about one and a half meter long and about half a meter in width, bound-tightly a round the waist. For the upper part of the body they have waist-coats. The men wear **'lengta'** which consists of a strip of blue or white cloth, 1.2 meter long and 25 centimeters wide. Boys till they are five or six years old wear nothing. In wet weather, men wear slung over their backs rain-shield made of thatching palm. Women wear large **'shan'** hats.

The colour of the dress varies from tribe to tribe. Each Naga tribe has its own favourite colour. For example, the Angamis loin cloth is of dark blue colour, white semas and Lothas have a combination of white and blue cloth, the Aos are fond of red and blue etc. Some Naga tribes wear feathers of birds and skin of animals on their heads and ears.

The Nagas wear very few and simple ornaments. For example, a bunch of the crest feathers of the wild pheasant bound with red wool on the ear, a plantain seed necklace with a big cochshell pendant **'lakup'** in front is worn around the neck or a thick armlet called **'tiwoi'** above each elbow and brass bracelets called **'rambam'** on each wrist, skull cap of bear skin, hats of red goats etc. In recent years the traditional dresses have been replaced by modern dresses. The Naga women has started wearing skirts and blouses. Most of them have given up their traditional **'mekhala'** (shawl) and the teenagers wear slacks and jeans.

Tools

The tools of Nagas include mainly a large chopping knife, known as Dao, spear, bow and arrow. They are used for war and hunting. Dao is the main weapon and is the friend and companion of a Naga throughout his life. The trees are cleared with it and in the past it was used to cut the head of their enemy. Most of the tools of the Naga's are made out of wood and bamboos. The defense weapons of the Nagas are the shields and helmets. More recently the Nagas have started the using guns for the killing of animals.

Economy and occupations

The Nagas are mainly engaged in agriculture and forestry, followed by tertiary and secondary activities respectively. Nearly 75% of the work force is dependent on agriculture. So the Naga economy is essentially agrarian in character. Live stock rearing, forestry, fishery, hunting, mining and quarrying are other occupations of Nagas.

The Nagas are greatly depend on agriculture. The method of agriculture practiced by the Nagas is shifting cultivation, locally known as **'Jhuming'**. It is widely practiced in Nagaland and it is practiced using **'slash and burn'** techniques in the middle of the forest. After cultivating a patch of land for two or three years, the Naga farmers leave the patch regenerate by fallow for a few years. Subsequently they leaving it shift their cultivation to a new location and develops new fields, cultivated as long as it retains sufficient productivity. The main crops are rice and maize. Millet, oil, seeds, potatoes, pulses and sugarcane are also grown.

Shifting cultivation (Jhuming) has been criticized in recent on ecological and socio-economic grounds. The large scale burning of forest causes destruction of natural habitats and the consequent reduction in the species of fauna and flora. This problem needs to be tackled. Measures have been taken up by the government to overcome the ecological problems created by the centuries-old system of shifting cultivation. In recent years its intensity has been reduced. But some Nagas still practice the shifting cultivation.

Nagas today are dependent on the timber industry. Nagaland produces a number of wood for export. It also produce fuel wood and many other forest products. Cutting of forest has resulted in led to soil erosion. Orchard plantations and terraced cultivation are also introduced. Bamboo is a valuable forest products.

Naga people also work as labourers in gardens or do other services and professions.

Hunting and fishing were prevalent at one time. Now they are not the main activities. Head hunting was one of the most striking social activity of the Nagas. But it is now entirely eradicated with the spread of modern education.

Social system

The Nagas are traditionally tribally organized, with strong warrior tradition. Their villages were spread on hilltops until the later part of the 19th century. Now this has been changed. Almost all Naga tribes have a similar dress code, eating habit, customs, traditional laws etc.

The Nagas are simple, straight-forward, hard-working and honest people with a high standard of integrity. They possess a strong sense of self respect and rarely submit to anyone who roughshods over them. A hallmark of their character is their hospitality and cheerfulness.

In respect of Nagas settlement, they traditionally live in villages. The village is a well-defined entity with distinct land demarcation between villages. Generally villages are in small in size and spatially scattered. The houses (thatched huts) are constructed on the slopes of steep hills, cliffs, spurs and sharp slopes. The basic reason for this selection of site need of defence. Because in the past, the Nagas were attacked by the invaders.

The type of Nagas houses vary from tribe to tribe and from village to village. The variations are, however, confined to the front part of the house and the decorations of roof. The roof is made of thatched grasses or palm leaves. The roop is always slanting in order to drain off the rain water quickly and the ceiling is of bamboo matting. Planks are not used at all, the walls and the floor of the house are made of strong bamboo matting. The water supply to the village is generally from a spring below the village.

Each village has a dialect of its own and as such there is a strong sense of social solidarity within it. The people in it are held together by social, economic, political and ritual ties. The impact of modernization is slowly but steadily eroding the centrality of villages as a social unit as large commercial town are rapidly coming up in every region of the Naga hills.

The family was the basic unit of the Naga society. Marriages were usually monogamous and fidelity to the spouse was considered as a high virtue. Marriage within the same clan is not permitted and it amounts to incest. Incestuous couples were ostracized (keeping out) from the villages. The family was the most important institution of social education and social control. These used to be a deep respect for parents and elders.

The system of marriage among the Nagas has been greatly influenced by the physical environmental conditions and the social milieu of the tribes. The marriages take place by mutual consent of the boys and girls.

The **'Morung'** or the bachelor dormitory system, used to be an essential part of Naga life. It was the most important educational set up of the people. The Morungs are grand buildings, constructed at the village entrance or a spot from where the village can be guarded most effectively. On attaining the age of puberty young boys and girls were admitted to their respective dormitories. The Naga culture, customs, traditions, folk tales, wood carving and weaving were taught to the young in the Morungs. Besides announcements of meetings, death message, warnings of impending dangers etc. were made from the Morungs with the beating

of log drums. But this system is no longer in practice among the Nagas tribes, due to the onset of modernity.

Arts and Crafts

The Naga tribes are expert craftsmen. They are known for their equisite handicrafts, particularly weaving pottery, metal work, jewellery and wood carving. Their shawls, bed sheets and scarfs are sold in different markets. They use beads of great variety and in profusion and complexity for their jewellery along with a gamut of materials like grass, shells, stone, teeth or tusk, claws or horns, metal, bone, wood, seeds, hair, fibre etc. Since bamboos are abundant, their well designed bamboo baskets, mats and shields etc. have great attractive.

Folk songs and dances: Folk songs and dances are the very ingredients of the traditional Naga culture. Naga folk songs are both romantic, historical, narrating stories of popular ancestors and incidents, seasonal songs describe various activities carried on during the agricultural season etc. On special occasion where there are communal feasts and celebrations they perform music and dance. Folk dances are mostly performed in groups in synchronized fashion by both men and women. The various indigenous musical instruments used by the people are bamboo mouth organs, cup violins, bamboo flutes, trumpets, drums made of cattle skin and log drums.

Religion: Today, more than 95% of Naga people are Christians. The rest are Muslims or Hindus. The advent of Christianity has changed the Naga society entirely and it bears little semblance to the tribal society that it was a century ago. The most important landmark in the history of the Naga people with considerable social, cultural and political ramification in the spread of Christianity among Naga tribes.

The Nagas do not believe in image or idol worship. Through Christian by faith, they still fallow some of the old practices of tribal religions.

Language: There is no common language among the Nagas. They speak many languages that belong to the Tibeto-Burman language group. However the present official language of the Indian state is 'English' is which a majority of the urban people are fluent.

In conclusion, the mode of life of Naga tribes is still under the control of physical environment. But in recent years the Naga society is undergoing tremendous transformation. The growth of education with the spread of Christianity and development programmes undertaken by the government have all unleashed forces which are churming up the tribal society and rapidly changing its complexion and character.

10.9 THE BHILS

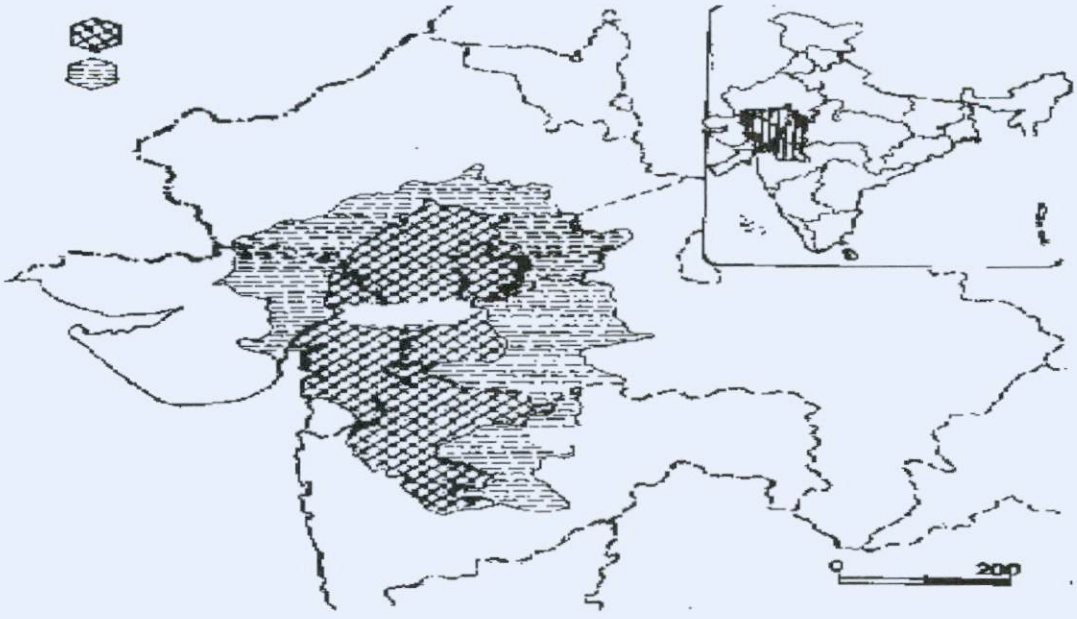
Origin of the Name

The origin of the term **'Bhil'** is associated with the Dravidian word Bil (Billu) meaning bow. In fact in the ancient past the Bhils were known for their skills in archery. Linguistically, the word is associated with Sanskrit verb meaning to pierce, shoot or kill in consequence of their skill in archers. There are some references to them in the epic Mahabharath, they are connected with Ekalavya, who was also a Bhil and Lord Krishna who had fallen a victim to the arrow of a Bhil.

Some anthropologist consider that the Bhils to be a pre-Dravidian tribe who had enjoyed sway over large territory in Rajasthan before they were subjugated by the Rajputh. According to historic evidences, southern Rajasthan and parts of central India were ruled by the Bhil chieftains.

The land of the Bhils

The Bhils are distributed mainly in the four states of India, namely Rajasthan, Madhya Pradesh, Maharashtra and Gujarat. But to a certain extent, they are also found in Chattisgarh, Andhra Pradesh and Karnataka. Their cultural core includes districts of Jhabua, Nimar, Dhar, Ratlam and Mansaur in Madhya Pradesh, Bhilwara, Kota, Dungarpur, Udaipur, Chittorgarh and Banswara in Rajasthan, Panchmahal, Vadodara, Banaskantha, Sabarkantha and Bharuch in Gujarat, Ahmadnagar, Aurangabad, Dhule, Jalgaon and Nasik in Maharashtra.



Habitat

The habitat of Bhils is characterised by varied features of hills, plateaus and forestes on the southern flanks of the Aravallis, Vindyas, Satpuras and Malava plateau. The climate of Bhil's habitat is monsoon type. The temperature is high in the month of June (35°C) and the lowest in the month January (18°C). Mid-June to mid-September is the period of general rains, locally known as **'bassat'.** The rain comes from the south west monsoon. In recent years denuded hilly areas, eroded soil and removal of forests have created many problems for the Bhils.

Shelter

The Bhils live in huts, constructed on small hillocks in the midst of their farmlands. The walls are either of mud and stone or of bamboo. The roofs are usually of clay tiles, the poor people use straw and leaves are roofing materials. The front walls of the huts are generally decorated with paintings which are crude and primitive. Some better-offs Bhils have pucca houses of the modern style. Now a days they use bricks and tiles for their houses. Every house has a corner for a family deity. The village settlement pattern is a scattered one. That is a handicap for the development of social amenities.

Food

By custom and tradition the Bhils are non-vegetarians. They eat meat of a animals and birds which they hunt in the forests. On ceremonial occasions, they use the meal of goats, sheep and buffaloes and invite the whole community. Special food is prepared at the time of festivals.

Though the Bhils are non-vegetarian, maize is their staple food all through the year. Millets are seldom taken as food even during the lean years. Rice is eaten for festivals and feasts. In recent years wheat has also become an important item of food. Rabdi is a common food item which is prepared by boiling flour in butturmilk. Pulses (blackgram, green gram), vegetables, spices, when available are also taken.

The Bhils are very fond of tea. They are much addicted to liquor, prepared from the flowers of **'mahuva tree'** or from the bark of babal.

Clothing

In the past the Bhils used to wear scanty clothes. The long hair of men served as turban called **'pagri'** to protect their head. Their only garments were a pair of short drawers made of bark of a trees. The petticoat of the women was made of the same material and they

wore metal ornaments on their arms and legs. There has been much transformation in the dress of both men and women in recent decades. Now the typical Bhil women dresses is traditional saris (hadla), loose long frock along with pyjama while men wear shirts and dhoti. Those who still cling to old fashion also keep a shawl or a cloth on their shoulders. The younger people have begun to put on shirts and suits.

The Bhils wear ornaments of silver, brass, zinc and nickel. They don't like ornaments of very complex design. The Bhils are fond of ear-rings. On ceremonial occassins, they adorn their wrists with silver bangles. But generally they wear lac and glass bangles.

Tools and implements

The bows, arrows, sword and daggers are the favourite weapons used by Bhils. The first three weapons are mostly made of bamboos. The arrows are two kinds, called **'hario'** and **'robdo'.** They are decorated with various designs. The hario is used for killing big animals, while the robdo is used for killing birds and teaching archery to the young boys. Daggers are used for splitting bamboos and chopping meat or vegetables. Indigenous guns are used by the well-off Bhils. But agricultural implements are more important one.

Economy

The Bhils are mainly dependent on forests and agricultural land for their livelihood. They gather fruits, leaves, nuts and roots and hunt wild animals and birds from the forests. They grow cereals, vegetables and fodder crops. Their method of agriculture is primitive and subsistent in character. There was no irrigation in the past.

Now the Bhils are moving towards the market oriented economy due to increasing pressure on land and use of farmland for non-agriculture purposes. They grow some commercial crops and have irrigation facilities. So in recent years their economy has been diversified. They have also started to migrate to the urban centers. Besides agriculture, they are involved intertiary activities such as running tea shops, cycle repair works, tailoring, collection and selling of tendu leaves. Some of them are employed as teachers, electricians, drivers, masons, fitters etc. Besides they practice pastoral activities, poultry farming, grazing, lumbering, fishing and other service.

Society

The Bhil's society is divided into many groups or clans in different states. Each clan is distinctively named. i.e. Bhillalas, Tadvi, Nair, Nihal, Barela, Kotwal. Similarly some clans have their own sub-castes.

Marriage system: Marriage among the Bhils is not only universal but also compulsory and the unmarried man and women are looked down upon by society. But the marriage customs vary among different sub-groups or clans. i.e. traditional and formal marriage, marriage by capture, widow and divorcee, re-marriage etc. But negotiated traditional marriage is considered as the most prestigious one. The Bhils practice polygamy. Divorce can be sought by either party with the consent of the village panchayat. Child marriage is conspicuous by the absence. Bhils are endogamous.

Religion: The society of Bhils basically patriarehal. The families have great reverence for gods and goddesses. They believe in the Hindu gods like Ram, Hanuman and Shiva besides their Baba Deo and Ghata Deo. They have identified forests and trees with supernatural spirits. The mango, papal, banana and amri are sacred trees. Of these the papal is the most popular. It is worshipped in the month of March. Bhils also worship agricultural tools and implements in the month of July (shrawan) during the festival of Raksha Bhandan. Holi is the most important festival of the Bhils. Holi is called Jogan Mata (mother of the Universe). Diwali is another important festival. On this occasion earthen lamps are lit and the river is worshipped.

Dance and songs: The Bhils take great interest in dance and music. They also arrange nautanki for community celebrations. **Ghoomar** is the most famous dance amongst Bhils. Than Gair is the religious dance drama performed by the men in the month of Shrawan. Colourful costumes are worn for their dances. There are special dances on occasions like marriage. Some dances are performed by men and women together by forming a chain. However, dance is interwoven into the life of the Bhil.

Bhils are highly talented with regard to sculpture and art, they make beautiful horses, elephants, tigers and deities out of clay.

The literacy level is low among the Bhils. But in recent years the trend has been changed and it is expected that in the near future both literacy and higher education will become popular among the Bhils.

At present, a social movement is going on to bring them in the national stream. They have covered a long journey form subsistence economy to modern competitive economy. They are being mobilized to live in compact villages. That will help in overcoming many of their socio-economic and cultural problems.

10.10 THE GONDS TRIBE

Location of Gonds Tribe

Many call the Gonds as the "face of Indian tribes", because their large numbers. They constitute the largest tribal group of India and are spread over vast areas from Madhya Pradesh to Karnataka and from Gujarat to West Bengal. Their largest concentration is in the ditrsicts of Seoni, Narsimhpur, Damoh, Mandla, Balghat, Chindwara, Betul, panna, Sagar and Jabalpur in Madhya Pradesh; Bastar, Raipur, Bijalpur, Rajnandangaon and Durg in Chattisgarh; Bidar and Uttar Kannada in Karnataka; Chandrapura and Wardha in Maharashtra; Adilpur in Andhra Pradesh part of Jharkhand and Bihar.

The land of Gonds mentioned above is rightly called Gondwana land. Historically speaking the Gonds at one time formed a ruling class of that areas. Raza and Ahmed have observed that "the Gond Core region" has been fragmented as a result of incursions by the non-tribal people but the Gond periphery is still intact. According to some the term **'Gond'** is derived from the Talugu word **'Konda'** meaning hill. So it believed that the Gonds are the people of hilly areas. On account of Sanskrit word **'Gonda'** meaning dense forests (Gondaranya) and it is believed that Gonds, are the natives of thick forests. Thus there is unanimity regarding place of origin of the Gonds.

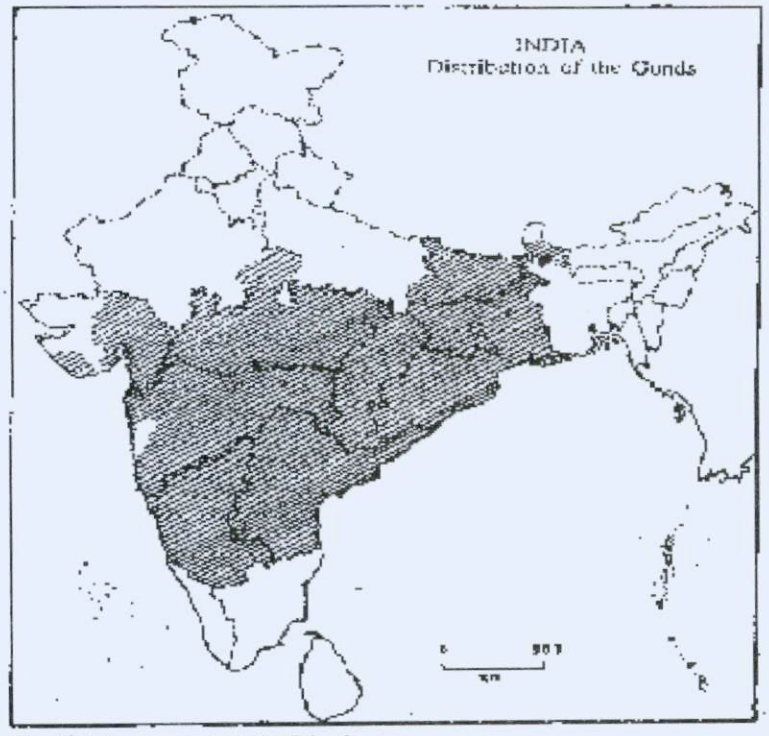


Fig. 10.7 Showing the habitat of the Gonds

The habitat of the Gonds is characterized by hilly and plateau terrain and forested areas between the Vindhyas and the Satpuras as well as the Chotanagpur plateau.

Physical traits: The typical physical traits of Gond tribes are dark complexion, flat and broad nose,, thick lips, attractive eyes, bright teeth, straight and thick hair and short stature.

Language: The main language of Gonds is Gondi which belongs to the ausric family. Beside this they also speak Halvi and Matri languages which have affinities with Indo-Aryan languages. They have good command on Telugu, Hindi, Marathi and other Dravidian languages.

Food: Most of Gonds are meat and fish consumers. Though they prefer to eat rice, jowar and two important millets, known as **'Kodo'** or **'Kutki',** some roots and nuts are also consumed. The **'Koh'** a local liquor is made from millets.

Clothing: Gonds wear minimum clothes. The men have combs in their hair curled over the nape of their necks, strings of cowries (shells), loin cloth and all have an axe. The women folk use saris and blouses. They also wear bead chain, glass bangles - bracelets and ear-rings.

Shelter: Gonds are very conservative and like to remain aloof from the outer world and maintain their old ways of life. They do not like to build their houses near the cross roads. The houses are generally built upon a large bari. They live in small villages of 20-30 families, build their houses (huts) along the east-west street on both sides.

The village site is usually chosen by the village priest, after performing certain religious rituals. Besides, other environmental factors have also been taken into consideration, such as availability of drinking water and fertile land. As a result most of the settlements of Gonds are located along the river banks and perennial lakes or pond. The Gonds also maintain the youth houses, called **'Gotuls',** where both bachelor boys and girls sleep in separate apartments. Generally they are built at the end of the village and its main purpose is to provide security to the villagers. This is like a youth club where they in dance and have music.

Economy: Agriculture is the main occupation of the Gonds. They fallow two types of cultivation, known as **'dippa'** and **'penda'** farming. The first one is shifting cultivation. It is a sort of nomadic farming. The latter is carried on hill scopes as terraced cultivation. They grow barley, millet, corn, rice and wheat. The Gonds carry on soil conservation method. In recent years the percentage of cultivation has declined due to increasing pressure on agricultural land.

Some groups of Gonds are engaged in fishing. i.e. the Kurush, Kewat and Dhimar, Gonds are also engaged in pastoral activities, hunting, collection of forest produce, trade, service and crafts as well. Their hunting implements are the bow and arrow.

Society

There are many sub-groups in Gonds tribe. For exampal, Maria, Muria, Parja, Bhatra, Gadaba, Kurush, Kewat, Dhimar, Saora, Raj Gond, etc. Generally each village has one Gond sept. They have joint family system.

Religon: The Gonds are highly religious minded. They worship **Janani,** the mother of creation, **Pharsa** pen – a piece of iron chain, **Mariai** – the Goddess of the diseases, the **Bhinsen** – the Hindu God. The most important feature of Gonds beliefs in the existence of spirits. Sacrifices are also made to appease a number of deities, who control everything. Gonds also worship the God of households, God fields etc.

Marriage system: The Gonds practice endogonus marriages. Polygamy is also in vogue. Girls marry at the age of 15-16 years and boys at 20-25 years. The Gotuls maintained by the Gonds is a place of matrimonial affairs. Where both unmarried boys and girls live. Usually love affairs may take place, which culminates in matrimonial relationship. Such affairs are kept secret till their marriage materializes. Whenever the secrets are disclosed, the miscreant is severely dealt with and are removed from the membership of the Gotul. So, this is the simple marriage system of Gonds. Divorce is quite common.

Festivals: Keslapur Jathra and Madai are the two major festivals celebrated by the Gonds tribe. At Jathra festival they worship, the snake deity called Nagoba. The most famous attraction at the festival in the **'Gusadi'** dance performed by wearing head gears decorated with peacock feathers, along with cotton cloth around their waist and smearing of ash all over the body. During the festivals Gonds meet their relatives. Sacrifice of goat is also done. In the night they enjoy their togetherness with liquor, dance and tribal music.

10.11 THE TODAS

Location

The Toda people are a small tribe who live in the Niligiris of Tamilnadu in South India (Ooty and Coonoor districts) and the adjoining areas of Karnataka (Chamarajanagar and South Kanara districts). They are spread in the best which extends to about 200 Km2 and is called **'the land of Todas'.**

Habitat

The habitat is characterized by a cool and pleasant climate and rich flora and fauna. The western slopes of the Niligiri hills receive heavy rainfall and are covered by dense evergreen forests. In contrast the eastern side receives less rain and is covered by glasses which facilitate cattle rearing. Hence the entire lifestyle of the Todas is centred round herding of buffaloes.

There are useful trees like white cedar, rose wood, satin wood, ebony and silver oak and animals like leopards, sambars, pigs and wild dogs.

Physical Traits

The Todas are distinct from the neighboring tribes. i.e. Badagas, the Kotas, Irulas etc. They have different physical features – light skin complexion, tall stature, long and narrow nose, brown eyes, long heads and abundant body hair and they are out of place among the dark skinned and short statured pre-Dravidians neighbours. According to some Anthropologists Todas are Proto-Aryans or Proto-Nordics.

Food

The Todas are vegetatians and do not eat meat, eggs and fish, but some villagers eat fish. Buffalo milk is made into butter, butter milk, yogurt, cheese or drunk plain. Rice is main food grain and is eaten with dairy products and curries. They also eat vegetables, roots and nuts, which are collected from the forests. The dairy products are obtained from buffaloes which are reared by them. The food grains are collected from the neighboring farmers of Badaga tribe. But in recent years they have leant to eat all types of food.

Dress

The clothing of Todas is very simple. The Toda traditional dress consists of a single piece of cloth, which is worn like the plaid of a Scottish highlander over a dhoti for men and skirt for women. The borders of the dhoti are painted in red or black colour. Toda women use half of the dhoti to wrap around their head. Men use turban around their head and a blanket or coarse rug is put on any one of the shoulders. Wearing some silver ornaments and tattoo are also a common practice. In recent years the dress code of Todas is modernized.

Houses

The Todas live in villages called **'mund'.** Each mund comprises of about five huts, 3 of which are used as dwellings, one for the buffaloes and the other for sheltering the calves at night.

The Toda huts, are in the shape of half barrel and are usually 3 meters high, 5.5 meters long and 2.7 meters wide. They are built of bamboo fastened with rattan and thatched. The wall of the hut is built of loose stones. The front and back part of the hut are usually built of granite stones. The hut has a small entrance in the front, for protection from wild animals. The front portion of the hut is decorated with the Toda art. Many Todas have abandoned their traditional distinctive huts for concrete houses.

Economy

The sole occupation of the Todas is cattle-herding and dairy work. The centre of their economy rests on buffalo rearing and their dairy products. The Todas move with their buffaloes in search of pastures. Sometimes the whole village community moves along with the buffaloes and their dairy men, called priests. Thus the Todas are a classical example of pastoral nomadism. The Priests (pujaris) milk the buffaloes twice a day in the raining season and morning only during the other seasons. The milk is stored is dairy house where milk products are prepared for sale. In recent years the economic activities of Todas diversified a little and they tied up with the economy of the neighbors.

Society

The Toda society centres on the buffalo. Therefore, rituals are performed for all dairy activities and also for the ordination of dairy men (priests). The religious and funerary rites provide the social context in which complex poetic songs about the cult of the buffalo are composed and chanted.

Fraternal polyandry in traditional Toda society was fairly common. This has now been abandoned. Fraternal polyandry is a practice in which the eldest brother marries a girl who is shared by all the younger brothers. In the seventh month of pregnancy the eldest brother performs the bow and arrow ceremony and is declared as the father of the child. It continues to be so in subsequent birth till another brother performs the ceremony and acquires fatherhood. Marriage is a simple ceremony. Divorce is rare. Women are highly respected.

The female's role in economic or traditional life is not important. Todas religion is animist. They worship **Teikirz;** who is their Supreme God and also worship **On,** his younger brother. The Todas also worship their dairy buffaloes and they have religious ceremony called **Kona shastra,** Now Christianity has reached the Todas and some of them have become Christians.

The Toda tribal court, called **'Noym',** consists of elders in the tribes. This court settles disputes and can impose fines or such other punishments.

The Toda language belongs to the Dravidian family and it has no script. There are two sub-tribes among the Todas: i) Tartharol and ii) Teivaliol. These are again divided into many sub-groups. The forced interaction with civilization has caused a lot of change in the life style of the Todas. They used to be a pastoral people but they now increasingly venture into agriculture and other occupations. They are given "Toda Pattaland" from the government, which is renewed every year for cultivation. The government has also have taken some measures for their socio-economic changes. The health and educational services have been extended and incidences of diseases and infanticide (now abolished) have declined.

10.12 LET US SUM UP

In this lesson we have studied about meaning of tribe, characteristics of tribes, their classification, the tribal regions of India and life of few tribals in India. We can conclude that most tribes live away from the civilized life and are mostly found in remote areas. In India there were many tribes who lived in hills and forests, lived on fruits, nuts, berries, hunting, fishing etc, wore leaves or rags round their loins. Today, most there tribes have come into contact with the civilized community. It has brought about a series of changes in the tribal areas and also in the tribal way of life. At the same time this has been responsible for some of the tribal discomforts and disadvantages.

The several construction works have caused a lot of disturbances in the habitat of the tribals. Hence they have to switch over from their original occupation to other civilized jobs. This factor has enabled the **'subsistence economy'** of the tribals to get transformed into a **'diversified economy'.** Their social system has been changed and their numbers has decline.

Tribals are facing many problems such as problems of geographic separation, economical, social, educational and health problem. Though the central and the state governments have taken much interest in the tribal welfare programmes, projects and schemes, much remains to be done.

Tribal people are economically poor. Majority of them live below poverty line. The innocence, illiteracy and helplessness of the tribals are exploited by the outsiders in various ways.

It is true that the tribals have become conscious of the fact that their ethnic identify is invaded by Christianity and Hinduism. Tribals are confusion now. Some among them have

raised the slogan 'Return to the tribal religion' despite the religious conversion. Lastly industrialization and urbanization have brought about revolutionary change in some parts of tribal India.

10.13 KEY WORDS

Dialect	:	A distinct linguistic form peculiar to a region or social group but which, nevertheless, can be understood by speakers of other forms of the same language.
Habitat	:	The environment of an organism or a group of organism.
Taboo	:	A restriction imposed by social custom.
Jhuming (Jhooming)	:	A local name called by Nagas for the method of agriculture practiced (shifting cultivation).
Morung	:	A communal dormitory for the Nagas bachelors, where both boys and girls stay, constructed at the village entrance from where the village can be guarded most effectively.
Munds (Aros)	:	The Toda villages are called Munds. Each mund has six semi-circular huts, made of bamboos and thatched.
Ghoomar	:	is the most famous dance amongst Bhils tribe.
Gotuls	:	The youth houses of Gond tribe, where both bachelor boys and girls sleep in separate apartments.
Noym	:	The Toda tribal court, consists of elders in the tribes.
Polyandry	:	Polygamy in which a women has more than one husband, was fairly common in Toda tribe.
Animism	:	The attribution of a living soul to plants, inanimate objects and natural phenomena (Todas).

10.14 QUESTIONS FOR SELF STUDY

1) Explain the characteristics, classification and Geographical distribution of Tribals in India.

2) Give an account on primitive and modern life of Nagas.

3) Write a note on any two of the following:

a) The origin, habitat, economy and society of Bhils.

b) The location, food, clothing, shelter and economy of Gond tribe in India.

c) The habitat, economy and society of Toda tribes in India.

10.15 FURTHER READINGS

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UNIT : 11 PATTERNS OF LIVELIHOOD AND VARIOUS ECONOMIC ACTIVITIES – AGRICULTURE

Structure

11.0 OBJECTIVES

After Studying of this unit, you will be able to:

- Discuss the origin of agriculture
- Discuss the nature of agricultural geography
- Examine the factors that are involved in the various of crops in a region
- connect the economic viability of farming operations

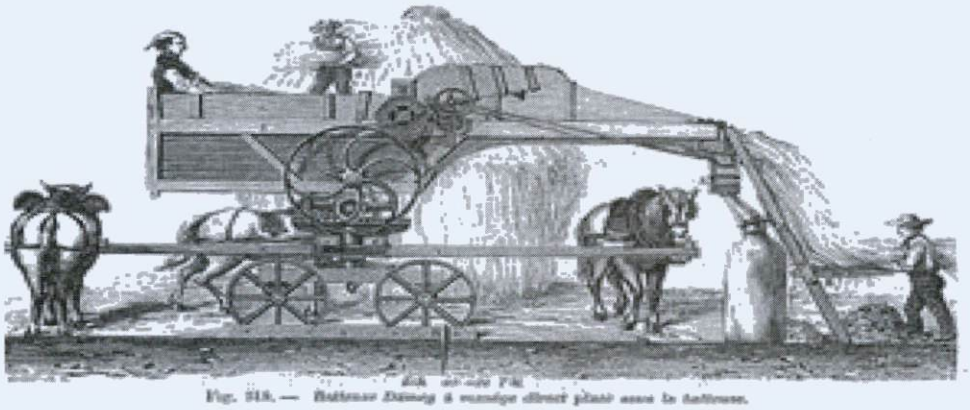
11.1 INTRODUCTION

Agriculture is the cultivation of animals, plants, fungi and other life forms for food, fiber, and other products used to sustain life. Agriculture was the key implement in the rise of sedentary human civilization, whereby farming of domesticated species created food surpluses that nurtured the development of civilization. The study of agriculture is known as agricultural science. Agriculture is also observed in certain species of ant and termite, but generally speaking refers to human activities.

11.2 ETYMOLOGY

The word *agriculture* is the English adaptation of Latin *agricultûra*, from *ager*, "a field", and *cultûra*, "cultivation" in the strict sense of "tillage of the soil" Thus, a literal reading of the word yields "tillage of a field or of fields".

11.3 HISTORY OF AGRICULTURE



Threshing machine from 1881

The **history of** agriculture is the story of humankind's development and cultivation of processes for producing food, feed, fiber, fuel, and other goods by the systematic raising of plants and animals. Prior to the development of plant cultivation, human beings were hunters and gatherers. The knowledge and skill of learning to care for the soil and growth of plants advanced the development of human society, allowing clans and tribes to stay in one location generation after generation. Archaeological evidence indicates that such developments occurred 10,000 or more years ago. Because of agriculture, cities as well as trade relations between different regions and groups of people developed, further enabling the advancement of human societies and cultures. Agriculture has been an important aspect of economics throughout the centuries prior to and after the Industrial Revolution. Sustainable development of world food supplies impact the long-term survival of the species, so care must be taken to ensure that agricultural methods remain in harmony with the environment.

11.3.1 Origins of Agriculture

Agriculture is believed to have been developed at multiple times in multiple areas, the earliest of which seems to have been in Southwest Asia. Pinpointing the absolute beginnings of agriculture is problematic because the transition away from purely hunter-gatherer societies, in some areas, began many thousands of years before the invention of writing. Nonetheless, archaeobotanists /paleoethnobotanists have traced the selection and cultivation of specific food plant characteristics, such as a semi-tough rachis and larger seeds, to just after the Younger Dryas (about 9,500 B.C.E.) in the early Holocene in the Levant region of the Fertile Crescent. There is much earlier evidence for use of wild cereals: anthropological and archaeological evidence from sites across Southwest Asia and North Africa indicate use of wild grain (such as from the ca. 20,000 B.C.E. site of Ohalo II in Israel, many Natufian sites in the Levant and from sites along the Nile in the 10th millennium B.C.E.). There is even early evidence for planned cultivation and trait selection: grains of rye with domestic traits have been recovered from Epi-Palaeolithic (10,000+ B.C.E.) contexts at Abu Hureyra in Syria, but this appears to be a localized phenomenon resulting from cultivation of stands of wild rye, rather than a definitive step towards domestication. It isn't until after 9,500 B.C.E. that the eight so-called founder crops of agriculture appear: first emmer and einkorn wheat, then hulled barley, peas, lentils, bitter vetch, chick peas, and flax. These eight crops occur more or less simultaneously on Pre-Pottery Neolithic B sites in the Levant, although the consensus is that wheat was the first to be sown and harvested on a significant scale.

By 7000 B.C.E., sowing and harvesting reached Mesopotamia and there, in the super fertile soil just north of the Persian Gulf, Sumerian ingenuity systematized it and scaled it up. By 6000 B.C.E. farming was entrenched on the banks of the Nile River. About this time, agriculture was developed independently in the Far East, probably in China, with rice rather than wheat as the primary crop. Maize was first domesticated, probably from teosinte, in the Americas around 3000-2700 B.C.E., though there is some archaeological evidence of a much older development. The potato, the tomato, the pepper, squash, several varieties of bean, and several other plants were also developed in the New World, as was quite extensive terracing of steep hillsides in much of Andean South America. Agriculture was also independently developed on the island of New Guinea.

The reasons for the development of farming may have included climate change, but possibly there were also social reasons (such as accumulation of food surplus for competitive gift-giving as in the Pacific Northwest potlatch culture). Most certainly, there was a gradual transition from hunter-gatherer to agricultural economies after a lengthy period during which some crops were deliberately planted and other foods were gathered in the wild. Although localized climate change is the favoured explanation for the origins of agriculture in the Levant, the fact that farming was 'invented' at least three times elsewhere, and possibly more, suggests that social reasons may have been instrumental.

Ancient Egyptian farmer

Full dependency on domestic crops and animals did not occur until the Bronze Age, by which time wild resources contributed a nutritionally insignificant component to the usual diet. If the operative definition of *agriculture* includes large scale intensive cultivation of land, mono-cropping, organized irrigation, and use of a specialized labour force, the title "inventors of agriculture" would fall to the Sumerians, starting ca. 5,500 B.C.E. Intensive farming allows a much greater density of population than can be supported by hunting and

gathering, and allows for the accumulation of excess product for off-season use, or to sell/barter. The ability of farmers to feed large numbers of people whose activities have nothing to do with material production was the crucial factor in the rise of standing armies. Sumerian agriculture supported a substantial territorial expansion, together with much internecine conflict between cities, making them the first empire builders. Not long after, the Egyptians, powered by farming in the fertile Nile valley, achieved a population density from which enough warriors could be drawn for a territorial expansion more than tripling the Sumerian empire in area.

11.4 Ancient Agriculture

11.4.1 Roman agriculture

A Gallic-roman harvester from a Wall in Buzenol, Belgium

Roman agriculture was highly regarded in Roman culture, built on techniques pioneered by the Sumerians, with a specific emphasis on the cultivation of crops for trade and export. Romans laid the groundwork for the manorial economic system involving serfdom, which flourished in the Middle Ages. By the fifth century Greece had started using crop rotation methods and had large estates while farms in Rome were small and family owned. Rome's contact with Carthage, Greece, and the Hellenistic East in the third and second centuries improved Rome's agricultural methods. Roman agriculture reached its height of productivity and efficiency during the late republic and early empire.

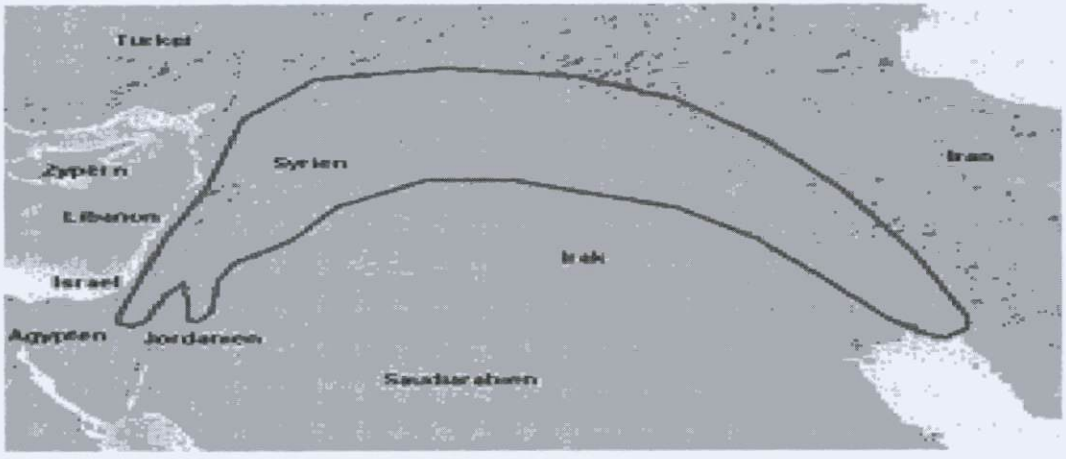
There was a massive amount of commerce between the provinces of the empire; all the regions of the empire became interdependent with one another, some provinces specialized in the production of grain, others in wine and others in olive oil, depending on the soil type.

The Po Valley (northern Italy) became a haven for cereal production, the province of [Etruria] had heavy soil good for wheat, and the volcanic soil in Campania made it well-suited for wine production. In addition to knowledge of different soil categories, the Romans also took interest in what type of manure was best for the soil. The best was poultry manure, and cow manure one of the worst. Sheep and goat manure were also good. Donkey manure was best for immediate use, while horse manure was not good for grain crops, but according to Marcus Terentius Varro, it was very good for meadows because "it promotes a heavy growth of grass." Some crops grown on Roman farms include wheat, barley, millet, kidney bean, pea, broad bean, lentil, flax, sesame, chickpea, hemp, turnip, olive, pear, apple, fig, and plum.

The Romans also used animals extensively. Cows provided milk while oxen and mules did the heavy work on the farm. Sheep and goats were cheese producers, but were prized even more for their hides. Horses were not important to Roman farmers; most were raised by the rich for racing or war. Sugar production centred on beekeeping. Some Romans raised snails as luxury items.

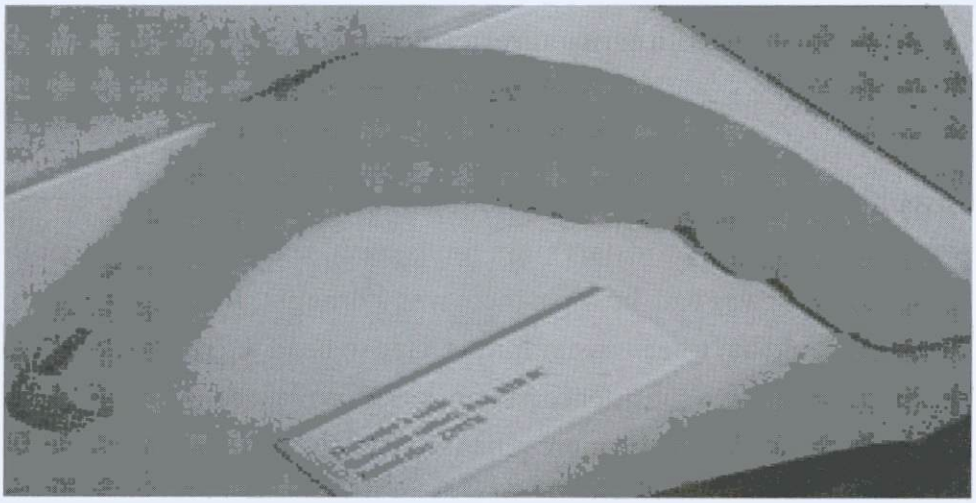
Roman law placed high priorities on agriculture since it was the livelihood of the people in early Rome. A Roman farmer had a legal right to protect his property from unauthorized entry and could even use force to do so. The Twelve Tables lists destroying someone else's crop as punishable by death. Burning a heap of corn was also a capital offense. The vast majority of Romans were not wealthy farmers with vast estates farmed for a profit. Since the average farm family size was 3.2 persons, ownership of animals and size of land determined production quantities, and often there was little surplus of crops.

11.4.2 Sumerian Agriculture



The "Fertile Crescent" of the Middle East.

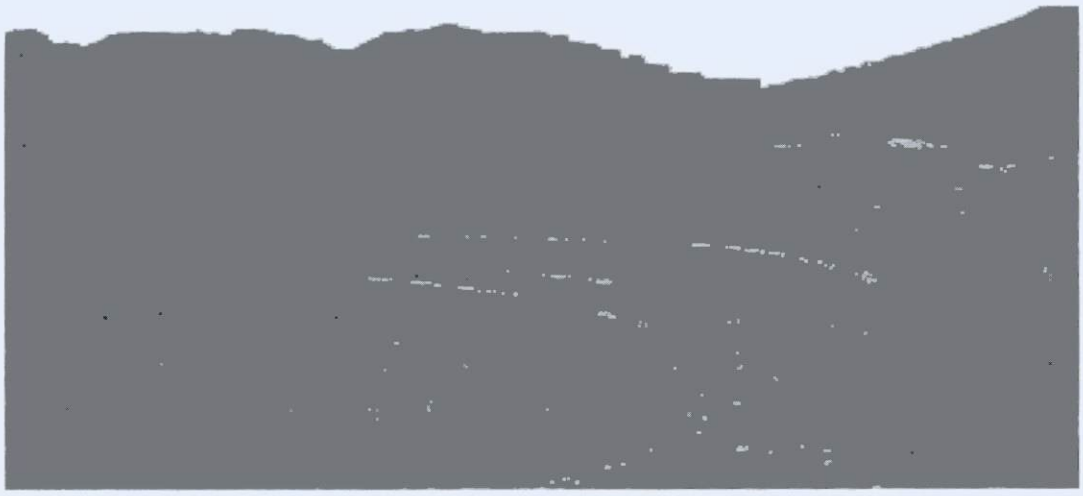
In Sumer, barley was the main crop, but wheat, flax, dates, apples, plums, and grapes were grown as well. While Mesopotamia was blessed with flooding from the Tigris and Euphrates rivers that helped cultivate plant life, the salt deposits under the soil, made it hard to farm. The earliest known sheep and goats were domesticated in Sumer and were in a much larger quantity than cattle. Sheep were mainly kept for meat and milk, and butter and cheese were made from the latter. Ur, a large town that covered about 50 acres (20 hectares), had 10,000 animals kept in sheepfolds and stables and 3,000 slaughtered every year. The city's population of 6,000 included a labour force of 2,500 cultivating 3,000 acres of land. The labour force contained storehouse recorders, work foremen, overseers, and harvest supervisors to supplement labourers. Agricultural produce was given to temple personnel, important people in the community, and small farmers.



Sumerian Harvester's sickle, 3000 B.C.E. Baked clay. Field Museum.

The land was ploughed by teams of oxen pulling light unwheeled plows and grain was harvested with sickles. Wagons had solid wheels covered by leather tires kept in position by copper nails and were drawn by oxen and the Syrian onager (now extinct). Animals were harnessed by collars, yokes, and head stalls. They were controlled by reins, and a ring through the nose or upper lip and a strap under the jaw. As many as four animals could pull a wagon at one time.[3] Though some hypothesize that domestication of the horse occurred as early as 4000 B.C.E. in the Ukraine, the horse was definitely in use by the Sumerians around 2000 B.C.E.

11.4.3Aztec and Maya Agriculture



Intihuatana ruins with agricultural terraces below at Písac, Peru

Agriculture in Mesoamerica dates to the Archaic period of Mesoamerican chronology (8000-2000 B.C.E.). During this period, many of the hunter gatherer micro-bands in the region began to cultivate wild plants. The cultivation of these plants probably started out as creating known areas of fall back, or starvation foods, near seasonal camps, that the band could rely on when hunting was bad, or when there was a drought. By creating these known areas of plant food, it would have been easier for the band to be in the right place, at the right time, to collect them. Eventually, a subsistence pattern, based on plant cultivation, supplemented with small game hunting, became much more reliable, efficient, and generated a larger yield. As cultivation became more focused, many plant species became domesticated. These plants were no longer able to reproduce on their own, and many of their physical traits were being modified by human farmers. The most famous of these, and the most important to Mesoamerican agriculture, is maize. Maize is storable for long periods of time, it can be ground into flour, and it easily turns into surplus for future use. Maize became vital to the survival of the people of Mesoamerica, and that is reflected in their origin, myths, artwork, and rituals.

The second most important crop in Mesoamerican agriculture is the squash. Cultivated and domesticated before maize, dated to 8000 B.C.E. in Oaxaca, the people of Mesoamerica utilized several different types of squash. The most important may be the pumpkin, and its relatives. The seeds of the pumpkin are full of protein, and are easily transportable. Another important member of the squash family is the bottle gourd. This fruit may not have been very

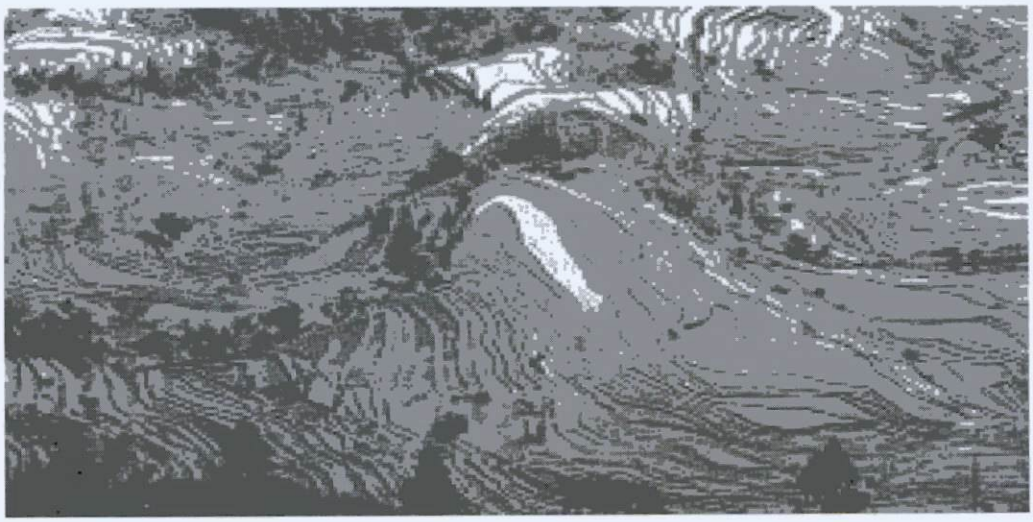
important as a food source, but the gourd itself would have been useful as a water container. Another major food source in Mesoamerica are beans. These may have been used as early as squash and maize, but the exact date of domestication is not known. These three crops formed the centre of Mesoamerican agriculture. Maize, beans, and squash form a triad of products, commonly referred to as the "Three Sisters," that provided the people of Mesoamerica a complementing nutrient triangle. Each contributes some part of the essential vitamin mix that human beings need to survive. An additional benefit to these three crops is that planting them together helps to retain nutrients in the soil.

Many other plants were first cultivated in Mesoamerica; tomatoes, avocados, guavas, chilli peppers, manioc, agave, and prickly pear were all cultivated as additional food resources, while rubber trees and cotton plants were useful for making cultural products like latex balls and clothing. Another culturally important plant was the cacao. Cacao beans were used as money, and later, the beans were used for making another valuable product, chocolate.

The Aztecs were some of the most innovative farmers of the ancient world, and farming provided the entire basis of their economy. The land around Lake Texcoco was fertile but not large enough to produce the amount of food needed for the population of their expanding empire. The Aztecs developed irrigation systems, formed terraced hillsides, and fertilized their soil. However, their greatest agricultural technique was the *chinampa* or artificial islands also known as "floating gardens." These were used to make the swampy areas around the lake suitable for farming. To make chinampas, canals were dug through the marshy islands and shores, then mud was heaped on huge mats made of woven reeds. The mats were anchored by tying them to posts driven into the lake bed and then planting trees at their corners that took root and secured the artificial islands permanently. The Aztecs grew corn, squash, vegetables, and flowers on chinampas.

11.4.4 Chinese agriculture

The unique tradition of Chinese agriculture has been traced to the pre-historic Yangshao culture (c. 5000 B.C.E.-3000 B.C.E.) and Longshan culture (c. 3000 B.C.E.-2000 B.C.E.). Chinese historical and governmental records of the Warring States (481 B.C.E.-221 B.C.E.), Qin Dynasty (221 B.C.E.-207 B.C.E.), and Han Dynasty (202 B.C.E.-220 C.E.) eras allude to the use of complex agricultural practices, such as a nationwide granary system and widespread use of sericulture. However, the oldest extant Chinese book on agriculture is the *Chimin Yaoshu* of 535 C.E., written by Jia Sixia.



Terraced rice fields in Yunnan province

For agricultural purposes, the Chinese had innovated the hydraulic-powered trip hammer by the first century B.C.E. Although it found other purposes, its main function was to pound, decorticate, and polish grain, tasks that otherwise would have been done manually. The Chinese also innovated the square-pallet chain pump by the first century C.E., powered by a waterwheel or oxen pulling a system of mechanical wheels. Although the chain pump found use in public works of providing water for urban and palatial pipe systems, it was used largely to lift water from a lower to higher elevation in filling irrigation canals and channels for farmland.

During the Eastern Jin (317-420) and the Northern and Southern Dynasties (420-589), the Silk Road and other international trade further spread farming technology throughout China. Political stability and a growing labour force led to economic growth, and people opened up large areas of wasteland and built irrigation works for expanded agricultural use. As land-use became more intensive and efficient, rice was grown twice a year and cattle began to be used for ploughing and fertilization. By the Tang Dynasty (618-907), China had become a unified feudal agricultural society. Improvements in farming machinery during this era included the mouldboard plow and watermill. Later during the Yuan Dynasty (1271-1368), cotton planting and weaving technology were extensively adopted and improved.

11.4.5 Indian agriculture

Paddy field in South India

Evidence of the presence of wheat and some legumes in the sixth millennium B.C.E. has been found in the Indus Valley. Oranges were cultivated in the same millennium. The crops grown in the valley around 4000 B.C.E. were typically wheat, peas, sesame seed, barley, dates, and mangoes. By 3500 B.C.E. cotton growing and cotton textiles were quite advanced in the valley. By 3000 B.C.E. farming of rice had started. Another monsoon crop of importance at that time was cane sugar. By 2500 B.C.E., rice was an important component of the staple diet in Mohenjo-Daro near the Arabian Sea.

The Indus Plain had rich alluvial deposits which came down the Indus River in annual floods. This helped sustain farming that formed basis of the Indus Valley Civilization at Harappa. The people built dams and drainage systems for the crops.

By 2000 B.C.E. tea, bananas, and apples were being cultivated in India. There was coconut trade with East Africa in 200 B.C.E. By 500 C.E., eggplants were being cultivated.

11.5 AGRICULTURE IN THE MIDDLE AGES

• • • The Middle Ages owe much of its development to advances made in Islamic areas, which flourished culturally and materially while Europe and other Roman and Byzantine administered lands entered an extended period of social and economic stagnation. This was in great part due to the fact that Serfdom became widespread in Eastern Europe in the middle ages. As early as the ninth century, an essentially modern agricultural system became central to economic life and organization in the Arab caliphates, replacing the largely export driven Roman model. The great cities of the Near East, North Africa and Moorish Spain were supported by elaborate agricultural systems which included extensive irrigation based on knowledge of hydraulic and hydrostatic principles, some of which were continued from

Roman times. In later centuries, Persian Muslims began to function as a conduit, transmitting cultural elements, including advanced agricultural techniques, into Turkic lands and western India. The Muslims introduced what was to become an agricultural revolution based on four key factors :

* Development of a sophisticated system of irrigation using machines such as norias (newly invented water raising machines), dams and reservoirs. With such technology they managed to greatly expand the exploitable land area.

* The adoption of a scientific approach to farming enabled them to improve farming techniques derived from the collection and collation of relevant information throughout the whole of the known world.[15] Farming manuals were produced in every corner of the Muslim world detailing where, when and how to plant and grow various crops. Advanced scientific techniques allowed leaders like Ibn al-Baytar to introduce new crops and breeds and strains of livestock into areas where they were previously unknown.

* Incentives based on a new approach to land ownership and labourers' rights, combining the recognition of private ownership and the rewarding of cultivators with a harvest share commensurate with their efforts. Their counterparts in Europe struggled under a feudal system in which they were almost slaves (serfs) with little hope of improving their lot by hard work.

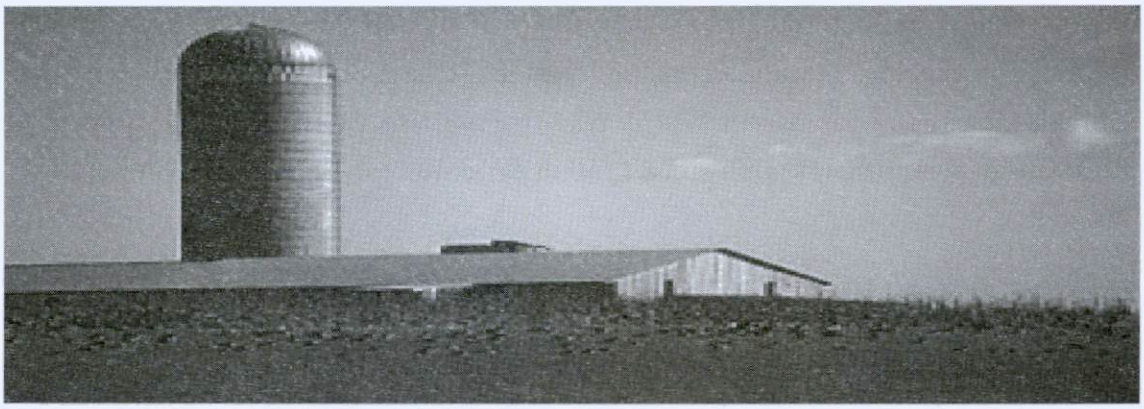
* The introduction of new crops transformed private farming into a new global industry exported everywhere including Europe, where farming was mostly restricted to wheat strains obtained much earlier via central Asia. Spain received what she in turn transmitted to the rest of Europe; many agricultural and fruit-growing processes, together with many new plants, fruit and vegetables. These new crops included sugar cane, rice, citrus fruit, apricots, cotton, artichokes, aubergines, and saffron. Others, previously known, were further developed. Muslims also brought to that country almonds, figs, and sub-tropical crops such as bananas. Several were later exported from Spanish coastal areas to the Spanish colonies in the New World. Also transmitted via Muslim influence, a silk industry flourished, flax was cultivated and linen exported, and esparto grass, which grew wild in the more arid parts, was collected and turned into various articles.

11.6 RENAISSANCE TO INDUSTRIAL REVOLUTION

The invention of a three-field system of crop rotation during the Middle Ages, and the importation of the Chinese-invented mouldboard plow, vastly improved agricultural efficiency.

After 1492 the world's agricultural patterns were shuffled in the widespread exchange of plants and animals known as the Columbian Exchange. Crops and animals that were previously only known in the Old World were now transplanted to the New World and vice versa. Perhaps most notably, the tomato became a favourite in European cuisine, and maize and potatoes were widely adopted. Other transplanted crops include pineapple, cocoa, and tobacco. In the other direction, several wheat strains quickly took to western hemisphere soils and became a dietary staple even for native North, Central, and South Americans.

Agriculture was a key element in the Atlantic slave trade, Triangular trade, and the expansion by European powers into the Americas. In the expanding Plantation economy, large plantations produced crops including sugar, cotton, and indigo, that were heavily dependent upon slave labour.



Storage silo

By the early 1800s, agricultural practices, particularly careful selection of hardy strains and cultivators, had so improved that yield per land unit was many times that seen in the Middle Ages and before, especially in the largely virgin soils of North and South America. The eighteenth and nineteenth century also saw the development of glass houses or greenhouses, initially for the protection and cultivation of exotic plants imported to Europe and North America from the tropics. Experiments on Plant Hybridization in the late 1800s yielded advances in the understanding of plant genetics, and subsequently, the development of hybrid crops. Storage silos and grain elevators appeared in the nineteenth century. However, increasing dependence upon monoculture crops lead to famines and food shortages, most notably the Irish Potato Famine (1845–1849).

The birth of industrial agriculture more or less coincides with that of the Industrial Revolution. With the rapid rise of mechanization in the late nineteenth and twentieth century's, particularly in the form of the tractor, farming tasks could be done with a speed and on a scale

previously impossible. These advances, joined to science-driven innovations in methods and resources, have led to efficiencies enabling certain modern farms in the United States, Argentina, Israel, Germany and a few other nations to output volumes of high quality produce per land unit at what may be the practical limit. The development of rail and highway networks and the increasing use of container shipping and refrigeration in developed nations have also been essential to the growth of mechanized agriculture, allowing for the economical long distance shipping of produce.

The identification of nitrogen and phosphorus as critical factors in plant growth led to the manufacture of synthetic fertilizers, making possible more intensive types of agriculture. The discovery of vitamins and their role in animal nutrition in the first two decades of the twentieth century, led to vitamin supplements, which in the 1920s allowed certain livestock to be raised indoors, reducing their exposure to adverse natural elements. The discovery of antibiotics and vaccines facilitated raising livestock in larger numbers by reducing disease. Chemicals developed for use in World War II gave rise to synthetic pesticides. Other applications of scientific research since 1950 in agriculture include gene manipulation, and Hydroponics.

A Tractor Ploughing an Alfalfa field

Agricultural production across the world doubled four times between 1820 and 1975. It doubled between 1820 and 1920; between 1920 and 1950; between 1950 and 1965; and again between 1965 and 1975, so as to feed a global population of one billion human beings in 1800 and 6.5 billion in 2002. During the same period, the number of people involved in farming dropped as the process became more automated. In the 1930s, 24 percent of the American population worked in agriculture compared to 1.5 percent in 2002; in 1940, each

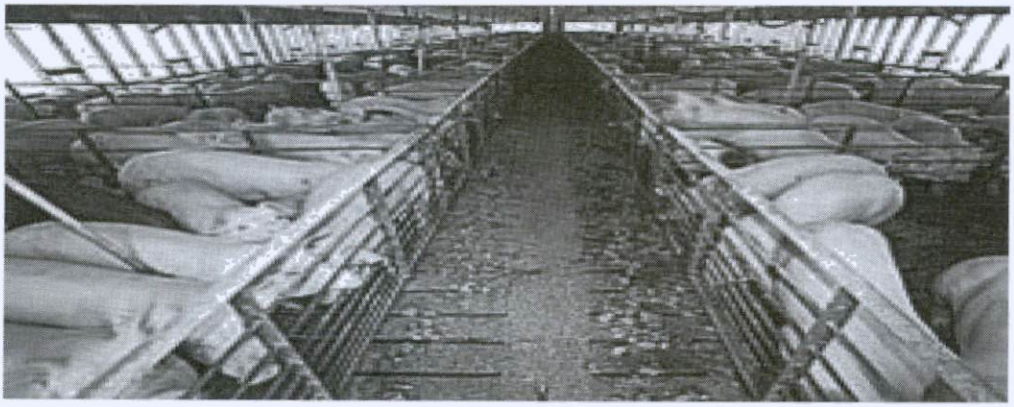
farm worker supplied 11 consumers, whereas in 2002, each worker supplied 90 consumers. The number of farms has also decreased, and their ownership is more concentrated. In the U.S., four companies kill 81 percent of cows, 73 percent of sheep, 57 percent of pigs, and produce 50 percent of chickens, cited as an example of "vertical integration" by the president of the U.S. National Farmers' Union. In 1967, there were one million pig farms in America; as of 2002, there were 114,000, with 80 million pigs (out of 95 million) killed each year on factory farms, according to the U.S. National Pork Producers Council. According to the World watch Institute, 74 percent of the world's poultry, 43 percent of beef, and 68 percent of eggs are produced this way.

11.7 CONTEMPORARY ISSUES

11.7.1 Industrial Agriculture

Industrial Agriculture is a modern form of farming that refers to the industrialized production of livestock, poultry, fish, and crops. The methods of industrial agriculture are techno scientific, economic, and political. They include innovation in agricultural machinery and farming methods, genetic technology, techniques for achieving economies of scale in production, the creation of new markets for consumption, the application of patent protection to genetic information, and global trade. These methods are widespread in developed nations and increasingly prevalent worldwide. Most of the meat, dairy, eggs, fruits, and vegetables available in supermarkets are produced using these methods of industrial agriculture.

While industrial agriculture strives to lower costs and increase productivity, the methods of industrial agriculture also have unintended consequences. The degree and significance of these unintended consequences is subject to debate, as is the question of the best way to deal with these consequences.



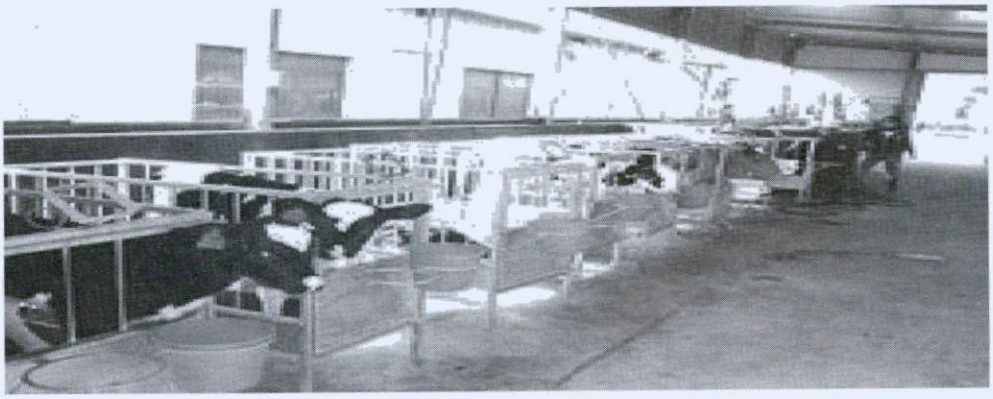
Interior of a typical Hog Confinement Barn

"Confined animal feeding operations" or "intensive livestock operations" or "factory farms," can hold large numbers (some up to hundreds of thousands) of animals, often indoors. These animals are typically cows, hogs, turkeys, or chickens. The distinctive characteristics of such farms are the concentration of livestock in a given space. The aim of the operation is to produce as much meat, eggs, or milk at the lowest possible cost.

Food and water is supplied in place, and artificial methods are often employed to maintain animal health and improve production, such as therapeutic use of anti-microbial agents, vitamin supplements, and growth hormones. Growth hormones are not used in chicken meat production nor are they used in the European Union for any animal. In meat production, methods are also sometimes employed to control undesirable behaviours often related to stresses of being confined in restricted areas with other animals. More docile breeds are sought (with natural dominant behaviours bred out, for example), physical restraints to stop interaction, such as individual cages for chickens, or animals physically modified, such as the de-breaking of chickens to reduce the harm of fighting. Weight gain is encouraged by the provision of plentiful supplies of food to the animals.

The large concentration of animals, animal waste, and dead animals in a small space poses ethical issues. Animal rights and animal welfare activists have charged that intensive animal rearing is cruel to animals. As they become more common, so do concerns about air pollution and ground water contamination, and the effects on human health of the pollution and the use of antibiotics and growth hormones.

One particular problem with farms on which animals are intensively reared is the growth of antibiotic-resistant bacteria. Because large numbers of animals are confined in a small space, any disease would spread quickly, and so antibiotics are used preventively. A small percentage of bacteria are not killed by the drugs, which may infect human beings if becoming airborne.



Holstein calves in individual cages. Revivim, Israel

According to the U.S. Centres for Disease Control and Prevention (CDC), farms on which animals are intensively reared can cause adverse health reactions in farm workers. Workers may develop acute and chronic lung disease, musculoskeletal injuries, and may catch infections that transmit from animals to human beings.

The CDC writes that chemical, bacterial, and viral compounds from animal waste may travel in the soil and water. Residents near such farms report nuisances such as unpleasant smells and flies, as well as adverse health effects.

The CDC has identified a number of pollutants associated with the discharge of animal waste into rivers and lakes, and into the air. The use of antibiotics may create antibiotic-resistant pathogens; parasites, bacteria, and viruses may be spread; ammonia, nitrogen, and phosphorus can reduce oxygen in surface waters and contaminate drinking water; pesticides and hormones may cause hormone-related changes in fish; animal feed and feathers may stunt the growth of desirable plants in surface waters and provide nutrients to disease-causing micro-organisms; trace elements such as arsenic and copper, which are harmful to human health, may contaminate surface waters.

11.7.3 Crops

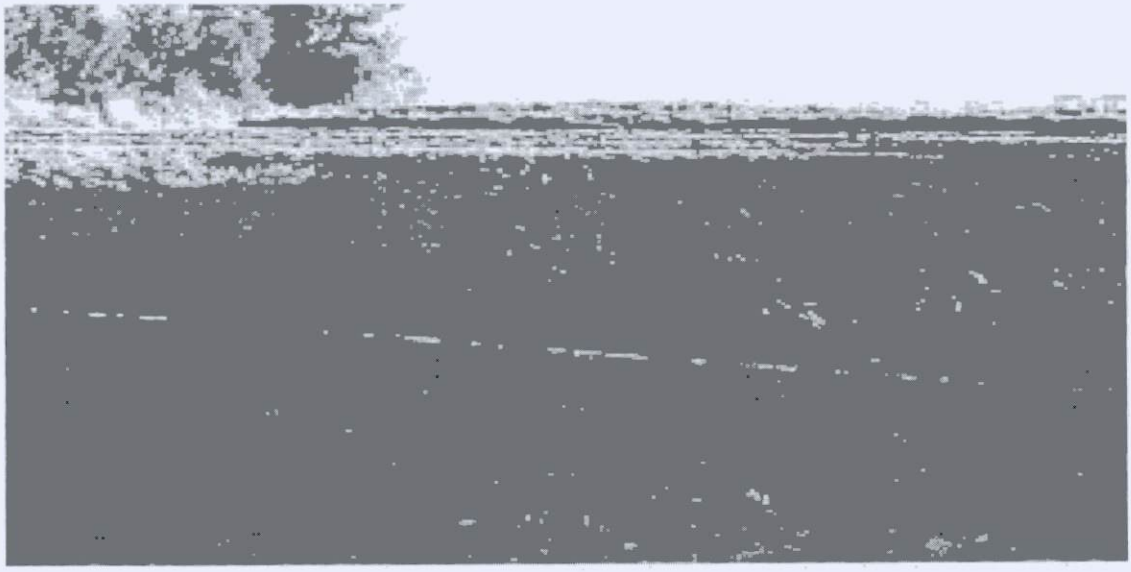
The Green Revolution, the worldwide transformation of agriculture that led to significant increases in agricultural production between the 1940s and 1960s, occurred as the result of programs of agricultural research, extension, and infrastructural development, instigated and largely funded by the Rockefeller Foundation, along with the Ford Foundation, and other major agencies.http://www.newworldencyclopedia.org/entry/History_of_agriculture - cite_note-26 The Green Revolution in agriculture helped food production to keep pace with worldwide population growth. The projects within the Green Revolution spread technologies that had already existed, but had not been widely used outside of industrialized nations. These technologies included pesticides, irrigation projects, and synthetic nitrogen fertilizer.

The novel technological development of the Green Revolution was the production of what some referred to as "miracle seeds." Scientists created strains of maize, wheat, and rice that are generally referred to as "high yielding varieties" (HYVs). HYVs have an increased nitrogen-absorbing potential compared to other varieties. Since cereals that absorbed extra nitrogen would typically lodge, or fall over before harvest, semi-dwarfing genes were bred into their genomes. Norin 10 wheat, a variety developed by Orville Vogel from Japanese dwarf wheat varieties, was instrumental in developing Green Revolution wheat cultivators. IR8, the first widely implemented HYV rice to be developed by IRRI, was created through a cross between an Indonesian variety named "Peta" and a Chinese variety named "Dee Geo Woo Gen."

HYVs significantly outperform traditional varieties in the presence of adequate irrigation, pesticides, and fertilizers. In the absence of these inputs, traditional varieties may outperform HYVs. One criticism of HYVs is that they were developed as F1 hybrids, meaning they need to be purchased by a farmer every season rather than saved from previous seasons, thus increasing a farmer's cost of production.

11.8 RESPONSES TO AGRICULTURAL PROBLEMS

The idea and practice of sustainable agriculture has arisen in response to the problems of industrial agriculture. Sustainable agriculture integrates three main goals: environmental stewardship, farm profitability, and prosperous farming communities. These goals have been defined by a variety of disciplines and may be looked at from the vantage point of the farmer or the consumer.



Organic cultivation of mixed vegetables on an organic farm in Capay, California

Another method to deal with agricultural issues has become the use of Organic farming methods, which combine scientific knowledge and modern technology with traditional farming practices; accepting some of the methods of industrial agriculture while rejecting others. Organic methods rely on naturally occurring biological processes, which often take place over extended periods of time, and a holistic approach; while chemical-based farming focuses on immediate, isolated effects, and reductionist strategies.

Integrated Multi-Trophic Aquaculture (IMTA) is an example of this holistic approach. IMTA is a practice in which the by-products (wastes) from one species are recycled to become inputs (fertilizers, food) for another. Fed aquaculture (fish, shrimp) is combined with inorganic extractive (seaweed) and organic extractive (shellfish) aquaculture to create balanced systems for environmental sustainability (bio mitigation), economic stability (product diversification and risk reduction), and social acceptability (better management practices).

Agricultural practices such as irrigation, crop rotation, fertilizers, and pesticides were developed long ago, but have made great strides in the past century. The history of agriculture has played a major role in human history, as agricultural progress has been a crucial factor in worldwide socio-economic change. Division of labor in agricultural societies made commonplace specializations rarely seen in hunter-gatherer cultures. So, too, are arts such as epic literature and monumental architecture, as well as codified legal systems. When farmers became capable of producing food beyond the needs of their own families, others in their society were freed to devote themselves to projects other than food acquisition. Historians and anthropologists have long argued that the development of agriculture made civilization possible. The total world population probably never exceeded 15 million inhabitants before the invention of agriculture.

11.9 TYPES OF AGRICULTURE

Agriculture is one of the most widespread activities in the world, but its character is not uniform throughout. There are a number of ways to classify agriculture and some of the major criteria which can be adopted include the scale of farming, crop and livestock combinations, intensity of farming, means and ways of disposal of the farm produce and the level of farm mechanization etc. A number of scholars have attempted to identify various types of agriculture. The following are the major types of agriculture in the world

11.9.1 Nomadic Herding

This type is based upon the rearing of animals on natural pastures. This practice is followed by the people of the semi arid and arid regions. They keep moving with their animals in search of natural pastures and lead a nomadic life. The types of the animals reared differ from one region to the other. Northern Africa, parts of Arabia and parts of northern Eurasia are the typical regions of this type of farming. This is a subsistence type of activity.

11.9.2 Livestock Ranching

Under this system of farming also the major emphasis is laid on rearing of animals but the farmers live a settled life. This type of farming has developed on a commercial basis in those areas of the world where large areas are available for animal grazing, such as the low rainfall areas of North America, South America and Australia. Animals are reared mainly for meat and wool and they are kept on large scale farms called the ranches.

11.9.3 Shifting Cultivation

This is the type of farming adopted generally in the rainy tropics. Under this system the land for cultivation is obtained by cleared off the forests with the help of slashing and burning technique and it is cultivated for a few years till the fertility declines or the land is overtaken by the weeds etc. Then the land is abandoned and a new plot is cleared for

farming. This is a subsistence type of farming done manually without much use of animal power or other types of power. This is the subsistence type of activity adopted by the people living in the tropical forest regions of south east Asia. Major emphasis is on the grain crops. This type of farming is now on a decline as due to its land spoiling nature it is being discouraged by the government agencies.

11.9.4 Rudimentary Sedentary Tillage

This is also a subsistence type of activity and it differs from the foregoing type in terms of the fact that the same plot of land is cultivated continuously year after year. Fallowing of land is commonly adopted to maintain the soil fertility and it is also a farming type of the tropical regions. Besides the grain crops, some tree crops such rubber are also grown under this system.

11.9.5 Intensive Subsistence Farming with Rice Dominant

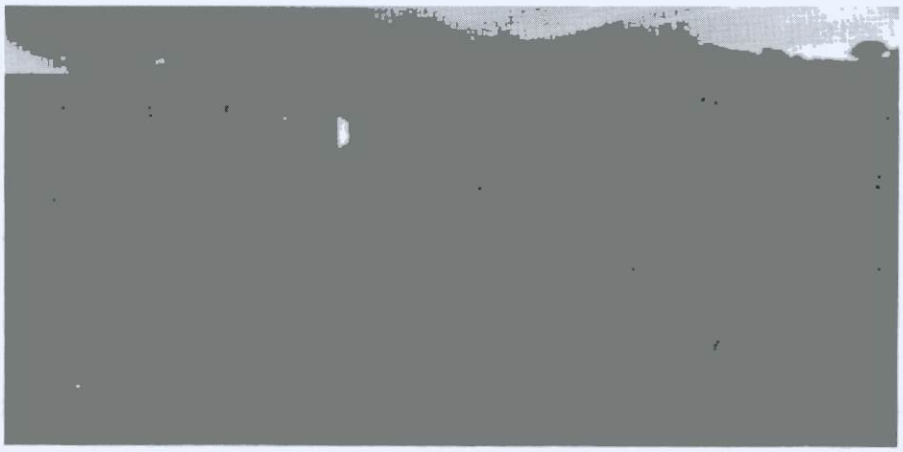
This type of farming is practiced in the areas of tropical regions having a high density of population and receiving a large amount of precipitation. Rice is the dominant crop as it can employ and feed a large number of people per unit of area. Southeast Asian region is the major area of this type of farming. Use of manual and animal power is dominant and effort is made to enhance the productivity per unit of area with the use of manures etc.

11.9.6 Intensive Subsistence Farming Without Rice Dominant

This is a slightly dry climatic variant of the foregoing type and as the amount of rainfall is not very high these regions grow grain crops other than rice, such as wheat and millets. Besides the comparatively less wet areas of Asia, northern Africa and the parts of Middle East this type of farming is commonly practiced in parts of southern Africa and Central America also.

11.9.7 Commercial Plantations

Though practiced over a rather small area, this type of farming is quite important in terms of its commercial value. The major products of this type of farming are the tropical crops such as tea, coffee, rubber and oil palm etc. This type of farming has developed in parts of Asia, Africa and Latin America where the influence of the Europeans has been important during the colonial period. Most of the plantations were developed to provide the tropical crops to the European markets. This is a highly capital intensive farming and most of the crops are tree crops.



11.9.8 Mediterranean Agriculture

The typical rugged relief of the Mediterranean region has resulted in typical live-stock and crop combinations in this region. Wheat and vineyards and citrus fruits are the major crops and the small animals the major livestock reared in the region. Horticulture is a major activity of this region and most of the crops other than these plantations are grown in winter with the help of winter rains.

11.9.9 Commercial Grain Farming

This type of farming is a response to farm mechanization and it is the major type of activity in the areas of low rainfall and low density of population where extensive farming is practiced. Crops are prone to the vagaries of weather and droughts and monoculture of wheat is the general practice. Prairies, steppes and the temperate grasslands of South America and Australia are the main areas of this type of farming.

11.9.10 Livestock and Grain Farming

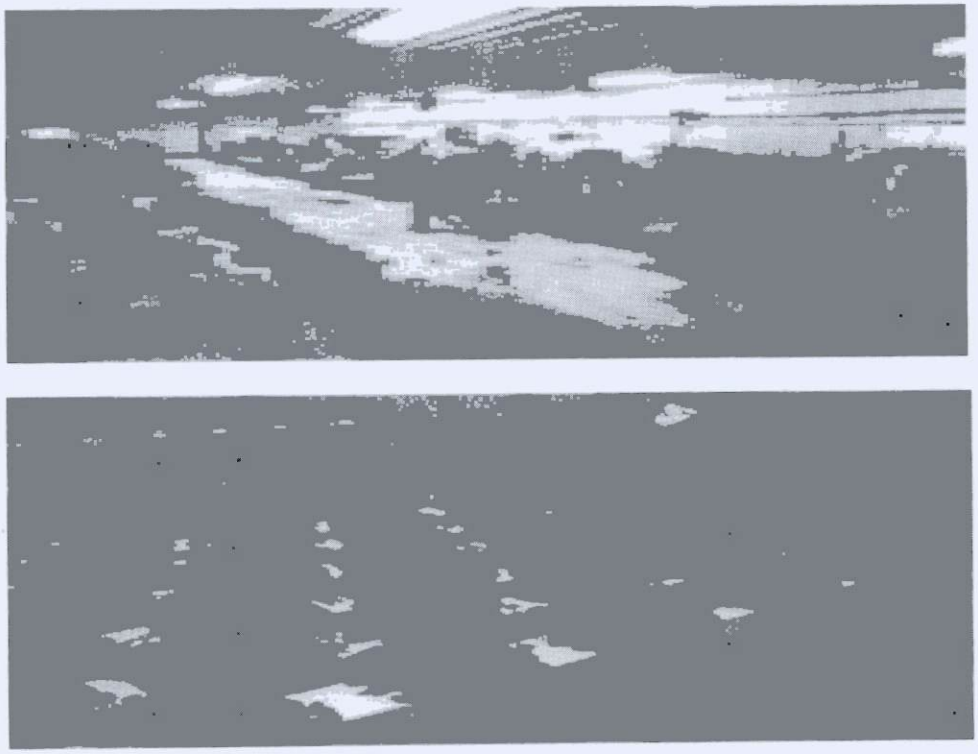
This type is commonly known as mixed farming and this practice has originated in the humid areas of the middle latitudes, except in Asia. Its development is closely related to the market facilities, and it is a typically European type of farming where an effort is made to get the best out of crop farming and animal rearing. Great Britain and New-Zealand are the examples of areas where it is the common practice.

11.9.11 Subsistence Crop and Stock Farming

This type resembles the foregoing type in terms of the crops and type of livestock but differs. In that practically nothing is sold off the farm. This type of farming has been common in areas of middle latitudes with lower fertility of soils or the areas of rough terrain and has declined significantly after the collectivization of farming in Russia which has been one of the major regions where this has been practiced.

11.9.12 Dairy Farming

This type also had its origin in Europe from where it spread to other areas. Close proximity to the market and a temperate climate are the two favourable factors which have been responsible for the development of this type of farming. Countries like Denmark and Sweden have witnessed the maximum development of this type of farming.



11.9.13 Specialized Horticulture

This type of farming has also developed to take advantage of a large demand for the products of horticulture and the areas of large scale urbanisation and high density of population in Europe have been favourable for its development. This type of farming has best developed in the vineyard cultivation areas of France, northern Hungary and the Swiss Lakes regions.

Although Whittlesey's agricultural classification is quite elaborate, the regionalisation on the basis of this classification is not something permanent. Due to changing market demands and the developing agricultural technology, a number of changes have come in the agricultural pattern of the world since Whittlesey's study. Large demands for fruits and vegetables in the urban areas have resulted in modified land use in many parts of the world and such factors impart a dynamic character to the agricultural activity

11.10 SUMMARY

Scientists have attempted to study the origin and spread of agriculture with the help of archaeology, botany, and zoology. Archaeologists, basing their evidence on the last phase of ice Age, believe that agriculture originated around 7000 or 8000 BC.

The industrial revolution in Britain in second half of the 18th century changed the whole face of agriculture. The whole economic fabric of Europe, which was based on agriculture become industrialised in the 19th century and the face of the whole agricultural operations changed.

The activities are cultivation of crops, dairying, and horticulture. Location includes discussion on whether it is a level plain and, if so is it irrigated farming or non-irrigated farming? If it is a hilly area, whether it is terraced farming or shifting cultivation. It also examines if it is mechanised or indigenous farming.

11.11 KEYWORDS

- Mesolithic Age – The middle Stone age,
- Neolithic Age – New Stone Age,
- Cropping Pattern- The type or types of crops grown in a region

11.12 QUESTIONS FOR SELF STUDY

1. Explain the various views on the origin and dispersal of agriculture.
2. What is meant by the Mesolithic and Neolithic Age; and indicate how they are related to origin of agriculture.
3. Explain the different types of agriculture?

11.13 FURTHER READING

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3. Noor Mohammed "Perspectives in Agricultural Geography" Vol-1 to V Concept publishing Company New Dehli
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5. Jashbir Sing "Agricultural Geography.

UNIT : 12 INDUSTRIALISATION AND MODERNISATION

Structure

12.0 OBJECTIVES

After Studying of this unit, you will be able to:

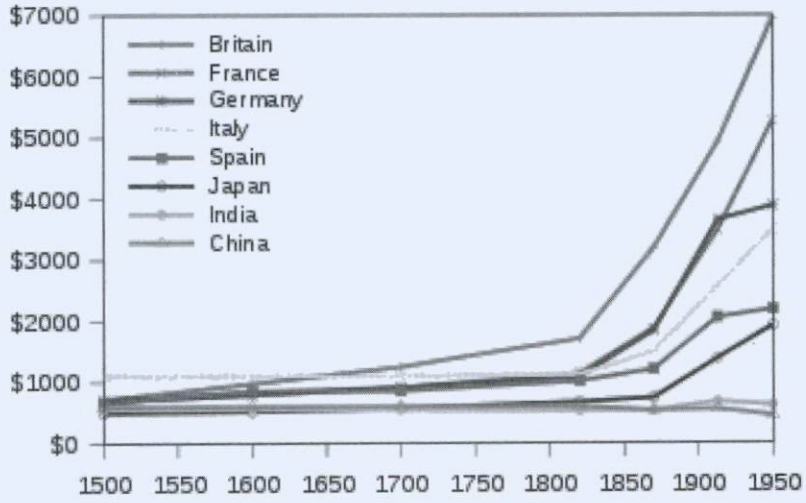
- Analyse the faster growth of national income.
- Identify the reduction of income inequalities.
- Compare Increase incomes and improve the quality of life of poor subsistence farmers through increased productivity and increased share of marketed production;
- Evaluate Improve household food security through the market rather than emphasizing self sufficiency;
- Identify the Provide gainful employment through the secondary benefits
- Compare Promote sustainable use and management of natural resources by developing a land use and management policy and promotion of environmentally friendly technologies.

12.1 INTRODUCTION

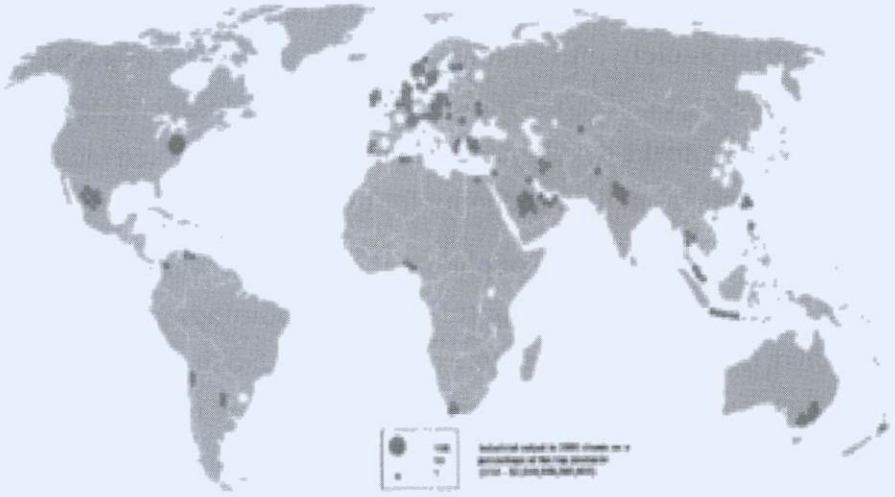
Industrialisation is the process of social and economic change that transforms a human group from an agrarian society into an industrial one. It is a part of a wider modernisation process, where social change and economic development are closely related with technological innovation, particularly with the development of large-scale energy and metallurgy production. It is the extensive organisation of an economy for the purpose of manufacturing.

Industrialization also introduces a form of philosophical change where people obtain a different attitude towards their perception of nature, and a sociological process of ubiquitous rationalisation. There is considerable literature on the factors facilitating industrial modernisation and enterprise development. Key positive factors identified by researchers have ranged from favourable political-legal environments for industry and commerce, through abundant natural resources of various kinds, to plentiful supplies of relatively low-cost, skilled and adaptable labour.

As industrial workers incomes rise, markets for consumer goods and services of all kinds tend to expand and provide a further stimulus to industrial investment and growth. The first country to industrialise was the United Kingdom during the Industrial Revolution commencing in the eighteenth century. By the end of the 20th century, East Asia had become one of the most recently industrialised regions of the world.

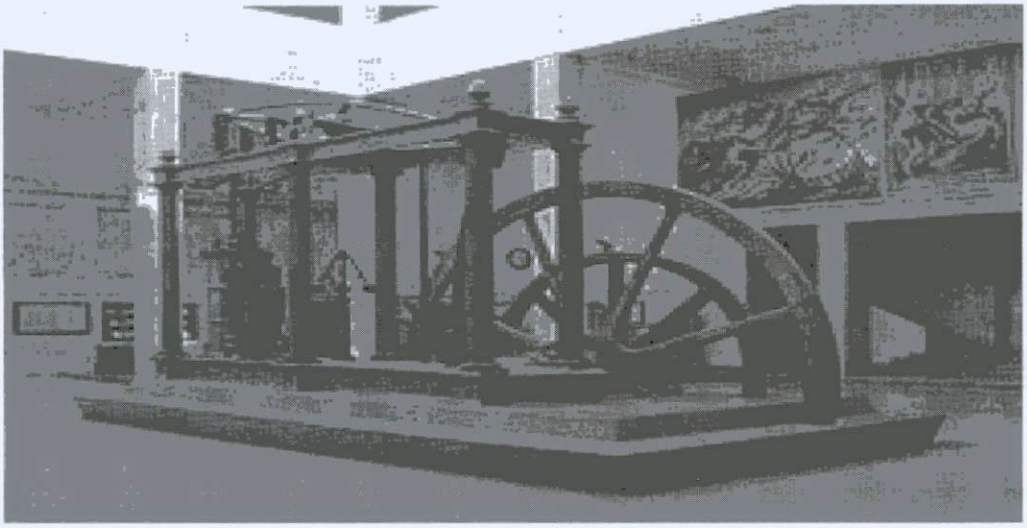


The effect of Industrialization shown by rising income levels since 1500. The graph shows the gross domestic product per capita between 1500 and 1950 in 1990 International dollars for selected nations.



Map showing the global distribution of industrial output in 2005, based on a percentage of the top producer, which is the United States

12.2 HISTORY OF INDUSTRIALISATION



A Watt steam engine, the steam engine fuelled primarily by coal that propelled the Industrial Revolution in the United Kingdom and the world. Most pre-industrial economies had standards of living not much above subsistence, among that the majority of the population were focused on producing their means of survival. For example, in medieval Europe, 80% of the labour force was employed in subsistence agriculture. Some pre-industrial economies, such as classical Athens, had trade and commerce as significant factors, so native Greeks could enjoy wealth far beyond a sustenance standard of living through the use of slavery. Famines were frequent in most pre-industrial societies, although some, such as the Netherlands and England of the seventeenth and eighteenth centuries, the Italian city states of the fifteenth century, the medieval Islamic Caliphate, and the ancient Greek and Roman civilisations were able to escape the famine cycle through increasing trade and commercialisation of the agricultural sector. It is estimated that during the seventeenth century Netherlands imported nearly 70% of its grain supply and in the fifth century BC Athens imported three quarters of its total food supply Industrialisation through innovation in manufacturing processes first started with the Industrial Revolution in the north-west and Midlands of England in the eighteenth century. It spread to Europe and North America in the nineteenth

12.2.1 Industrial revolution in Western Europe

Aplerbecker Hütte, an industrialised area of Dortmund, Germany around 1910. The old town can be seen beyond and some remaining agricultural land is in the foreground

In the eighteenth and nineteenth centuries, the United Kingdom experienced a massive increase in agricultural productivity known as the British Agricultural Revolution, which enabled an unprecedented population growth, freeing a significant percentage of the workforce from farming, and helping to drive the Revolution. Due to the limited amount of arable land and the overwhelming efficiency of mechanised farming, the increased population could not be dedicated to agriculture. New agricultural techniques allowed a single peasant to feed more workers than previously; however, these techniques also increased the demand for machines and other hardware's, which had traditionally been provided by the urban artisans. Artisans, collectively called bourgeoisie, employed rural exodus workers to increase their output and meet the country's needs.

The growth of their business coupled with the lack of experience of the new workers pushed a rationalisation and standardisation of the duties the in workshops, thus leading to a division of labour, that is, a primitive form of Fordism. The process of creating a good was divided into simple tasks, each one of them being gradually mechanised in order to boost productivity and thus increase income.

The accumulation of capital allowed investments in the conception and application of new technologies, enabling the industrialisation process to continue to evolve. The industrialisation process formed a class of industrial workers who had more money to spend than their agricultural cousins. They spent this on items such as tobacco and sugar, creating

new mass markets that stimulated more investment as merchants sought to exploit them. The mechanisation of production spread to the countries surrounding England in western and northern Europe and to British settler colonies, helping to make those areas the wealthiest, and shaping what is now known as the Western world.

The Crystal Palace Great Exhibition. The United Kingdom was the first country in the world to industrialise.

Some economic historians argue that the possession of so-called 'exploitation colonies' eased the accumulation of capital to the countries that possessed them, speeding up their development. The consequence was that the subject country integrated a bigger economic system in a subaltern position, emulating the countryside, which demands manufactured goods and offers raw materials, while the colonial power stressed its urban posture, providing goods and importing food. A classical example of this mechanism is said to be the triangular trade, which involved England, southern United States and western Africa. Critics argue that this polarity still affects the world, and has deeply retarded industrialisation of what is now known as the Third World. Some have stressed the importance of natural or financial resources that Britain received from its many overseas colonies or those profits from the British slave trade between Africa and the Caribbean helped fuel industrial investment.

12.2.2 Early industrialization in other countries

After the Convention of Kanagawa issued by Commodore Matthew C. Perry forced Japan to open the ports of Shimoda and Hakodate to American trade, the Japanese government realised that drastic reforms were necessary to stave off Western influence. The Tokugawa shogun ate abolished the feudal system. The government instituted military reforms to modernise the Japanese army and also constructed the base for industrialisation. In the 1870s, the Meiji government vigorously promoted technological and industrial development that eventually changed Japan to a powerful modern country.

In a similar way, Russia suffered during the Allied intervention in the Russian Civil War. The Soviet Union's centrally controlled economy decided to invest a big part of its resources to enhance its industrial production and infrastructures to assure its survival, thus becoming a world superpower. During the Cold war, the other European socialist countries, organised under the Comecon framework, followed the same developing scheme, albeit with a less emphasis on heavy industry. Southern European countries such as Spain or Italy saw a moderate industrialisation during the 1950s-1970s, caused by a healthy integration of the European economy, though their level of development, as well as those of eastern countries, does not match the western standards.

12.2.3 The Third World

A similar state-led developing programme was pursued in virtually all the Third World countries during the Cold War, including the socialist ones, but especially in Sub-Saharan Africa after the decolonisation period. The primary scope of those projects was to achieve self-sufficiency through the local production of previously imported goods, the mechanisation of agriculture and the spread of education and health care. However, all those experiences failed bitterly due to a lack of realism: most countries did not have a pre-industrial bourgeoisie able to carry on a capitalistic development or even a stable and peaceful state. Those aborted experiences left huge debts toward western countries and fuelled public corruption.

12.2.4 Petrol-producing countries

Oil-rich countries saw similar failures in their economic choices. An EIA report stated that OPEC member nations were projected to earn a net amount of $1.251 trillion in 2008 from their oil exports. Because oil is both important and expensive, regions that had big reserves of oil had huge liquidity incomes. However, this was rarely followed by economic development. Experience shows that local elites were unable to re-invest the petrodollars obtained through oil export, and currency is wasted in luxury goods. This is particularly evident in the Persian Gulf states, where the per capita income is comparable to those of western nations, but where no industrialisation has started. Apart from two little countries (Bahrain and the United Arab Emirates), Arab states have not diversified their economies, and no replacement for the upcoming end of oil reserves is envisaged.

12.2.5 Industrialisation in Asia

Apart from Japan, where industrialisation began in the late 19th century, a different pattern of industrialisation followed in East Asia. One of the fastest rates of industrialisation

occurred in the late 20th century across four countries known as the Asian tigers thanks to the existence of stable governments and well structured societies, strategic locations, heavy foreign investments, a low cost skilled and motivated workforce, a competitive exchange rate, and low custom duties.

In the case of South Korea, the largest of the four Asian tigers, a very fast paced industrialisation took place as it quickly moved away from the manufacturing of value added goods in the 1950s and 60s into the more advanced steel, shipbuilding and automobile industry in the 1970s and 80s, focusing on the high-tech and service industry in the 1990s and 2000s. As a result, South Korea became a major power. This starting model was afterwards successfully copied in other larger Eastern and Southern Asian countries, including communist ones. The success of this phenomenon led to a huge wave of off shoring – i.e., Western factories or Tertiary Sector corporations choosing to move their activities to countries where the workforce was less expensive and less collectively organised.

China and India, while roughly following this development pattern, made adaptations in line with their own histories and cultures, their major size and importance in the world, and the geo-political ambitions of their governments (etc.). Currently, China's government is actively investing in expanding its own infrastructures and securing the required energy and raw materials supply channels, is supporting its exports by financing the United States balance payment deficit through the purchase of US treasury bonds, and is strengthening its military in order to endorse a major geopolitical role.

Meanwhile, India's government is investing in economic sectors such as bioengineering, nuclear technology, pharmaceutics, informatics, and technologically-oriented higher education, exceeding its needs, with the goal of creating several specialisation poles able to conquer foreign markets. Both China and India, particularly the Chinese, have also started to make significant investments in other developing countries, making them significant players in today's world economy.

12.2.6 Newly industrialised countries

The countries in green are considered to be newly industrialising nations. China and India (in dark green) are a special case.

In recent decades, a few countries in Latin America, Asia, and Africa, such as Turkey, South Africa, Malaysia, Philippines, Mexico, Costa Rica, and El Salvador have experienced substantial industrial growth, fuelled by exporting to countries that have bigger economies: the United States, China, India and the EU. They are sometimes called countries. Despite this trend being artificially influenced by the oil price increases since 2003, the phenomenon is not entirely new nor totally speculative.

Western industrialization meant increasing western military and economic pressure in the form of rising imperialism. However there were two significant exceptions to this western pattern in Russia and Japan, who did not produce this new western society. In these two nations there was a noticeable difference from the United States and Australia, who were already very well established within these prior cultures. The responses of Russia and Australia did however make them into expanding and aggressive nations by the end of the 19th century. Neither generated a huge amount of change in the early 19th century.

Japan and Russia both were successful in the fact that they imitated many other societies giving them flexibility. Yet they both had very little in common before the 19th century. Japan was isolated from the world with its ongoing traditions and forms of centralized government. Russia featured a more strong centralized government under the emperor. Both would soon to discover that westernization and industrialism were expanding and their own ways would not hold up against the new changing world of industrialization. In the late 19th century the force for them to being industrializing would become even more prevalent for the success of their nation in these new growing societies.

12.3 SOCIAL AND ENVIRONMENTAL CONSEQUENCES

12.3.1 Urbanisation

The concentration of labour into factories has brought about the rise of large towns to serve and house the factory workers.

12.3.2 Exploitation

Workers have to leave their family in order to come to work in the towns and cities where the industries are found.

12.3.3 Change to family structure

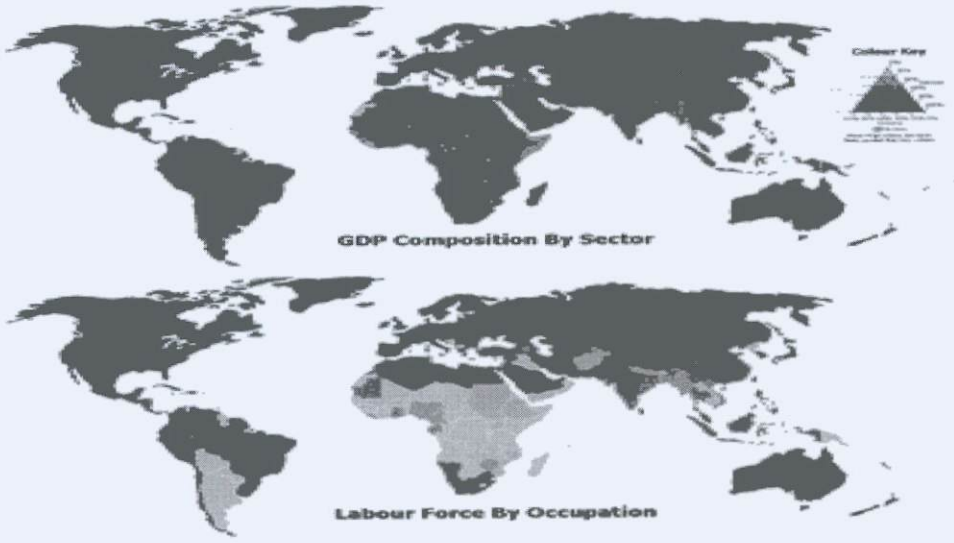
The family structure changes with industrialisation. The sociologist Talcott Parsons noted that in pre-industrial societies there is an extended family structure spanning many generations who probably remained in the same location for generations. In industrialised societies the nuclear family, consisting of only of parents and their growing children, predominates. Families and children reaching adulthood are more mobile and tend to relocate to where jobs exist. Extended family bonds become more tenuous.

12.3.4 Environment

Industrialisation has spawned its own health problems. Modern stressors include noise, air, water pollution, poor nutrition, dangerous machinery, impersonal work, isolation, poverty, homelessness, and substance abuse. Health problems in industrial nations are as much caused by economic, social, political, and cultural factors as by pathogens. Industrialisation has become a major medical issue worldwide.

Countries, such as the United States and China are now looking at ways to manage emissions being let off. China, being one of the fastest growing industrialized countries, releases emissions at a much more rapid rate than any other country. They are burning more fossil fuels and discharge more Carbon emissions. With China's substantial industrialized growth, it is likely that we will see more cars on the road, letting of greater emissions. As more countries begin to develop, the pollution only gets larger, making it harder to improve the air. On one hand, as the economy rises, so does the amount of fossil fuels being burned daily. On the other hand, there is still the question of whether or not economic development could even happen while protecting the atmosphere. The main problem is that developed countries are competing instead of working together. Even if the countries do work together, there is still not enough participation among other countries to do any drastic change. Countries now need to agree on a low emission standard to cease the competition.

12.4 CURRENT SITUATION



GDP composition of sector and lab our force by occupation. The green, red, and blue components of the colors of the countries represent the percentages for the agriculture, industry, and services sectors, respectively.

China in 2010 became the world's largest manufacturer, ending the United States run for over a century, the value of China manufacturing output in 2010 was $1.995 Trillion Dollars or 19.8% of the worldwide total, edging out the United States which accounted for 19.4% worth $1.952 Trillion Dollars.

Currently the "international development community" (World Bank, OECD, many United Nations departments, and some other organisations) endorses development policies like water purification or education. The community does not recognise traditional industrialisation policies as being adequate to the Third World or beneficial in the longer term, with the perception that it could only create inefficient local industries unable to compete in the free-trade dominated political order which it has erected.

The relationship between economic growth, employment and poverty reduction is complex. Higher productivity is argued to be leading to lower employment. There are differences across sectors, whereby manufacturing is less able that the tertiary sector to accommodate both increased productivity and employment opportunities; over 40% of the world's employees are "working poor" whose incomes fail to keep themselves and their families above the $2 a day poverty line.[22] There is also a phenomenon of deindustrialisation, such as in the former USSR countries' transition to market economies, and the agriculture sector often is the key sector in absorbing the resultant unemployment.

12.5 MODERNIZATION

In the social sciences, **modernization** refers to a model of an evolutionary transition from a 'pre-modern' or 'traditional' to a 'modern' society. The teleology of modernization is described in social evolutionism theories, existing as a template that has been generally followed by societies that have achieved modernity. While it may theoretically be possible for some societies to make the transition in entirely different ways, there have been no counter examples provided by reliable sources.

Historians link modernization to the processes of urbanization and industrialization, as well as to the spread of education. As Kendall (2007) notes, "Urbanization accompanied modernization and the rapid process of industrialization. In sociological critical theory, modernization is linked to an overarching process of rationalisation. When modernization increases within a society, the individual becomes that much more important, eventually replacing the family or community as the fundamental unit of society.

Modernization theory and history have been explicitly used as guides for countries eager to develop rapidly, such as China. Indeed, modernization has been proposed as the most useful framework for World history in China, because as one of the developing countries that started late, "China's modernization has to be based on the experiences and lessons of other countries."

Instead of being dominated by tradition, societies undergoing the process of modernization typically arrive at governance dictated by abstract principles. Traditional religious beliefs and cultural traits usually become less important as modernization takes hold.

12.5.1 Theory

According to theories of modernization, each society can develop from traditionalism to modernity, and that those that make this transition follow similar paths. More modern states are wealthier and more powerful, and their citizens freer, with a higher standard of living. According to the Social theorist Peter Wagner, modernization can be seen as processes, and as offensives. The former view is commonly projected by politicians and the media, and suggests that it is developments, such as new data technology or need to update traditional methods, which make modernization necessary or preferable. This view makes critique of modernization difficult, since it implies these developments control the limits of human interaction, and not vice versa.

The view of modernization as offensives argues that both the developments and the altered opportunities made available by these developments are shaped and controlled by

human agents. The view of modernization as offensives therefore sees it as a product of human planning and action, an active process capable of being both changed and criticized.

hModernization emerged in the late 19th century and was especially popular among scholars in the mid-20th century. One foremost advocate was Harvard sociologist Talcott Parsons. The theory stressed the importance of societies being open to change and saw reactionary forces as restricting development. Maintaining tradition for tradition's sake was thought to be harmful to progress and development. Proponents of modernization lie in two camps, optimists and pessimist. The former view holds that what a modernizer sees as a setback to the theory (events such as the Iranian Revolution or the troubles in Lebanon) are invariably temporary setbacks, with the ability to attain "modernism" still existing. Pessimists argue that such non-modern areas are incapable of becoming modern.

12.5.2 Practice

1. ***United States :*** The Progressives in the United States in the early 20th century were avid modernizers. They believed in science, technology, expertise—and especially education—as the grand solution to society's weaknesses. Characteristics of progressivism included a favourable attitude toward urban-industrial society, belief in mankind's ability to improve the environment and conditions of life, belief in obligation to intervene in economic and social affairs, and a belief in the ability of experts and in efficiency of government intervention.

   Paul Monroe, a professor of history at Columbia University, was a member of The Inquiry—a team of American experts at the Paris Peace Conference in 1919. He drew on his experience in the Philippines to assess the educational needs of developing areas such as Albania, Turkey and central Africa. Presenting educational development as instrumental to nation-building and socioeconomic development, Monroe recommended the implementation of a progressive curriculum - with an emphasis on practical, adult, and teacher training - in a national system of education, as a basis for self-development, except in Africa. His approach shaped American cooperation with developing countries in the 1920s and modernization efforts during the 1920s-1930s.

2. ***Germany's "Sonderweg" :*** Many historians have emphasized the central importance of a German Sonderweg or "special path" as the root of Nazism and the German catastrophe in the 20th century. According to the historiography by Kocka (1988), the process of nation-building from above especially during the period of the German Empire (1871–1918), in the following Weimar era, had very grievous long-term

implications, historians have argued. In terms of parliamentary democracy, Parliament was kept weak, the parties were fragmented, and there was a row file level of mutual distrust. The Nazis built on the illiberal, anti-pluralist elements of Weimar's political culture. The Junker elites (the large landowners in the east) and senior civil servants used their great power and influence well into the twentieth century to frustrate any movement toward democracy. They played an especially negative role in the crisis of 1930-1933. The emphasis by Otto von Bismarck on military force amplified the voice of the officer corps, which combined advanced modernization of military technology with reactionary politics. The rising upper-middle-class elites, in the business, financial, and professional worlds, tended to accept the values of the old traditional elites. The German Empire was for Hans-Ulrich Wehler a strange mixture of highly successful capitalist industrialization and socio-economic modernization on the one hand, and of surviving pre-industrial institutions, power relations and traditional cultures on the other. Wehlerý argues that it produced a high degree of internal tension, which led on the one hand to the suppression of socialists, Catholics, and reformers, and on the other hand to a highly aggressive foreign policy. For these reasons Fritz Fischer and his students emphasized Germany's primary guilt for causing World War I.

Hans-Ulrich Wehlerý, a leader of the Bielefeld School of social history, places the origins of Germany's path to disaster in the 1860s-1870s, when economic modernization took place, but political modernization did not happen and the Old Prussian rural elite remained in firm control of the army, diplomacy and the civil service. Traditional, aristocratic, pre-modern society battled an emerging capitalist, bourgeois, modernizing society. Recognizing the importance of modernizing forces in industry and the economy and in the cultural realm, Wehler argues that reactionary traditionalism dominated the political hierarchy of power in Germany, as well as social mentalities and in class relations. The catastrophic German politics between 1914 and 1945 are interpreted in terms of a delayed modernization of its political structures. At the core of Wehler's interpretation is his treatment of "the middle class" and "revolution," each of which was instrumental in shaping the 20th century. Wehler's examination of Nazi rule is shaped by his concept of "charismatic domination," which focuses heavily on Adolf Hitler.

The historiographical concept of a German Sonderweg has had a turbulent history. Nineteenth century scholars who emphasized a separate German path to modernity saw it as a positive factor that differentiated Germany from the "western path" typified

by Great Britain. The stressed the strong bureaucratic state, reforms initiated by Bismarck and other strong leaders, the Prussian service ethos, the high culture of philosophy and music, and Germany's pioneering of a social welfare state. In the 1950s, historians in West German argued that the Sonderweg lead Germany to the disaster of 1933-1945. The special circumstances of German historical structures and experiences were interpreted as preconditions that, while not directly causing National Socialism, did hamper the development of a liberal democracy and facilitate the rise of fascism. The Sonderweg paradigm has provided the impetus for at least three strands of research in German historiography: the "long nineteenth century", the history of the bourgeoisie, and comparisons with the West. After 1990, increased attention to cultural dimensions and to comparative and relational history moved German historiography to different topics, with much less attention paid to the Sonderweg. While some historians have abandoned the Sonderweg thesis, they have not provided a generally accepted alternative interpretation.

3. ***19th century France :*** his seminal book *Peasants Into Frenchmen: The Modernization of Rural France, 1880–1914* (1976), historian Eugen Weber traced the modernization of French villages and argued that rural France went from backward and isolated to modern and possessing a sense of French nationhood during the late 19th and early 20th centuries. He emphasized the roles of railroads, republican schools, and universal military conscription. He based his findings on school records, migration patterns, military service documents and economic trends. Weber argued that until 1900 or so a sense of French nationhood was weak in the provinces. Weber then looked at how the policies of the Third Republic created a sense of French nationality in rural areas. The book was widely praised, but was criticized by some who argued that a sense of Frenchness existed in the provinces before 1870.

4. ***Asia :*** Many studies of modernization have focused on the history of Japan in the late 19th century,http://en.wikipedia.org/wiki/Modernization - cite_note-18 and China and India in the late 20th century For example; the process of borrowing science and technology from the West has been explored.

    - ***Korea :*** Modernizers in Korea in the late 19th century were torn between the American and the Japanese models. Most of the Koreans involved were educated Christians who saw America as their ideal model of civilization. However, most used Japan as a practical model - as an example of how a fellow East Asian

country, which 30 years before was also backward, could succeed in civilizing itself. At the same time, reformists' nationalist reaction against the domineering, colonial behaviour of the Japanese in Korea often took the form of an appeal to international (Western) standards of civilization. The Western-oriented worldview of the early Christian nationalist reformers was complex, multilayered, and often self-contradictory - with 'oppressive' features not easily distinguishable from 'liberational' ones. Their idealized image of the West as the only true, ideal civilization relegated much of Korea's traditional culture to a position of 'barbarism'.

The self-image of Koreans was formed through complex relationships with modernity, colonialism, Christianity, and nationalism. This formation was initiated by a change in the notion of 'civilization' due to the transformation of 'international society' and thereafter was affected by the trauma of Japanese colonization. Through the process of transition from a traditional Confucian notion of civilization to a Western notion of acceptance and resistance, Koreans shaped their civilization as well as their notions of the racial, cultural, and individual modern self. Western Orientalism, in particular, accompanied the introduction of the Western notion of civilization, which served as the background for forming the self-identity of Koreans. The fact that the Japanese version of Orientalism emerged from the domination of Korea by Japan played a critical role in shaping the self-identity of Koreans. Consequently, Korea still maintains an inferiority complex toward Western culture, ambivalent feelings toward Japanese culture, and biased - positive or negative - views of their own cultural traditions. Thus both modernization and colonization have shaped the formation or distortion of self-consciousness of non-Western peoples

The US launched a decades-long intensive development starting in 1945 to modernize South Korea, with the goal of helping it become a model nation-state and an economic success. Agents of modernization at work in Korea included the US Army, the Economic Cooperation Administration, the UN Korean Reconstruction Agency, and a number of nongovernmental organizations, among them the Presbyterian Church, the YMCA, Boy Scouts and the Ford Foundation. Many Koreans migrated to California and Hawaii, and brought back firsthand accounts of modern business and governmental practices that they sought to adapt to Korean conditions.

5. ***Middle East :***

- **Turkey**

  Turkey, under Kemal Atatürk in the 1920s and 1930s, engaged in a systematic modernization program called "Kemalism". Hundreds of European scholars came to help. Together with Turkish intellectuals they developed a successful model of development.

6. ***Latin America :*** Since independence, modernization has been a driving force for Chile's political elites. Ree (2007) analyzes projects of modernization that have been implemented from above since 1964. Despite their ideological differences and very different understandings of what modernity is, these projects shared key characteristics in their construction and implementation, such as the use of developmental theories, their state-orientation, the prominent role of technocrats and state-planning, and the capacity of adaptation in sight of civil unrest. These projects have produced patterns of modernity that have proven to be particularly stable.

12.6 GREECE

The 60's are a time of liberation and vitality, with doubts and against conformism, the youth was activated in many activities by creating various groups which support new ideologies. And this picture is reflected to the music, art and cinema, the urban landscape was being transformed and the technology was being developed very quickly. In the Greek reality of 1960 the arts were dominating and many artists influenced by the American culture. Also in the literature the developments were many and more specific. But developments in the literature were rich and multifarious adding colourful touches to the striking range of the decade. The first years of valuation of Greek modernism begins with the award of Elytis' "Axion Esti" (1960).The industrial revolution and the radicalization of society played a key role in the development of a new rationality in relation to the dominant. The zenith of Modernism was in all forms of art as in painting, poetry, literature, architecture, politics and religion, after the Second World War

The Industrial Revolution was a period from the 18th to the 19th century where major changes in agriculture, manufacturing, mining, transport and technology had a profound effect on the socioeconomic and cultural conditions starting in the United Kingdom, and then subsequently spreading throughout Europe, North America, and eventually the world. The onset of the Industrial Revolution marks the major turning point in human history; almost

every aspect of daily life was eventually influenced in some way. Most notably, average income and population began to exhibit unprecedented sustained growth. In the two centuries following 1800, the world's average income increased over 10-fold, while the world's population increased over 6-fold.

Starting in the later part of the 18th century there began a transition in parts of Great Britain's previously manual labour and draft-animal–based economy towards machine-based manufacturing. It started with the mechanisation of the textile industries, the development of iron-making techniques and the increased use of refined coal. Trade expansion was enabled by the introduction of canals, improved roads and railways. The introduction of steam power fuelled primarily by coal, wider utilisation of water wheels and powered machinery (mainly in textile manufacturing) underpinned the dramatic increases in production capacity. The development of all-metal machine tools in the first two decades of the 19th century facilitated the manufacture of more production machines for manufacturing in other industries. The effects spread throughout Western Europe and North America during the 19th century, eventually affecting most of the world, a process that continues as industrialisation. The impact of this change on society was enormous.

The first Industrial Revolution, which began in the 18th century, merged into the Second Industrial Revolution around 1850, when technological and economic progress gained momentum with the development of steam-powered ships, railways, and later in the 19th century with the internal combustion engine and electrical power generation. The period of time covered by the Industrial Revolution varies with different historians. Eric Hobsbawm held that it 'broke out' in Britain in the 1780s and was not fully felt until the 1830s or 1840s, while T. S. Ashton held that it occurred roughly between 1760 and 1830. Some twentieth century historians such as John Clapham and Nicholas Crafts have argued that the process of economic and social change took place gradually and the term *revolution* is not a true description of what took place. This is still a subject of debate among historians. GDP per capita was broadly stable before the Industrial Revolution and the emergence of the modern capitalist economy. The Industrial Revolution began an era of per-capita economic growth in capitalist economies. Economic historians are in agreement that the onset of the Industrial Revolution is the most important event in the history of humanity since the domestication of animals and plants.

12.7 INDUSTRIAL REVOLUTION

12.7.1 Innovations

The commencement of the Industrial Revolution is closely linked to a small number of innovations, made in the second half of the 18th century:

- **Textiles** – Cotton spinning using Richard Arkwright's water frame, James Hargreaves's Spinning Jenny, and Samuel Crompton's Spinning Mule. This was patented in 1769 and so came out of patent in 1783. The end of the patent was rapidly followed by the erection of many cotton mills. Similar technology was subsequently applied to spinning worsted yarn for various textiles and flax for linen.
- **Steam power** – The improved steam engine invented by James Watt and patented in 1775 was initially mainly used for pumping out mines, but from the 1780s was applied to power machines. This enabled rapid development of efficient semi-automated factories on a previously unimaginable scale in places where waterpower was not available.
- **Iron founding** – In the Iron industry, coke was finally applied to all stages of iron smelting, replacing charcoal. This had been achieved much earlier for lead and copper as well as for producing pig iron in a blast furnace, but the second stage in the production of bar iron depended on the use of potting and stamping (for which a patent expired in 1786) or pudding (patented by Henry Cort in 1783 and 1784).

These represent three 'leading sectors', in which there were key innovations, which allowed the economic take off by which the Industrial Revolution is usually defined. This is not to belittle many other inventions, particularly in the textile industry. Without some earlier ones, such as the spinning jenny and flying shuttle in the textile industry and the smelting of pig iron with coke, these achievements might have been impossible. Later inventions such as the power loom and Richard Trevithick's high pressure steam engine were also important in the growing industrialization of Britain. The application of steam engines to powering cotton mills and ironworks enabled these to be built in places that were most convenient because other resources were available, rather than where there was water to power a watermill.

In the textile sector, such mills became the model for the organisation of human labour in factories, epitomised by Cotton polis, the name given to the vast collection of cotton mills, factories and administration offices based in Manchester. The assembly line system greatly improved efficiency, both in this and other industries. With a series of men trained to do a

single task on a product, then having it moved along to the next worker, the number of finished goods also rose significantly.

12.7.2 Transfer of knowledge

Knowledge of new innovation was spread by several means. Workers who were trained in the technique might move to another employer or might be poached. A common method was for someone to make a study tour, gathering information where he could. During the whole of the Industrial Revolution and for the century before, all European countries and America engaged in study-touring; some nations, like Sweden and France, even trained civil servants or technicians to undertake it as a matter of state policy. In other countries, notably Britain and America, this practice was carried out by individual manufacturers anxious to improve their own methods. Study tours were common then, as now, as was the keeping of travel diaries. Records made by industrialists and technicians of the period are an incomparable source of information about their methods.

- **Transport**

  At the beginning of the Industrial Revolution, inland transport was by navigable rivers and roads, with coastal vessels employed to move heavy goods by sea. Railways or wagon ways were used for conveying coal to rivers for further shipment, but canals had not yet been constructed. Animals supplied all of the motive power on land, with sails providing the motive power on the sea.

  The Industrial Revolution improved Britain's transport infrastructure with a turnpike road network, a canal and waterway network, and a railway network. Raw materials and finished products could be moved more quickly and cheaply than before. Improved transportation also allowed new ideas to spread quickly.

- **Coastal sail**

  Sailing vessels had long been used for moving goods round the British coast. The trade transporting coal to London from Newcastle had begun in medieval times. The transport of goods coastwise by sea within Britain was common during the Industrial Revolution, as for centuries before. This became less important with the growth of the railways at the end of the period.

- **Navigable rivers**

  All the major rivers of the United Kingdom were navigable during the Industrial Revolution. Some were anciently navigable, notably the Severn, Thames, and Trent. Some were improved, or had navigation extended upstream, but usually in the period before the Industrial Revolution, rather than during it.

  The Severn, in particular, was used for the movement of goods to the Midlands which had been imported into Bristol from abroad, and for the export of goods from centres of production in Shropshire (such as iron goods from Coalbrookdale) and the Black Country. Transport was by way of throws—small sailing vessels which could pass the various shallow and bridges in the river. The throws could navigate the Bristol Channel to the South Wales ports and Somerset ports, such as Bridgwater and even as far as France.

- **Canals**

  Canals began to be built in the late eighteenth century to link the major manufacturing centres in the Midlands and north with seaports and with London, at that time itself the largest manufacturing centre in the country. Canals were the first technology to allow bulk materials to be easily transported across the country. A single canal horse could pull a load dozens of times larger than a cart at a faster pace. By the 1820s, a national network was in existence. Canal construction served as a model for the organisation and methods later used to construct the railways. They were eventually largely superseded as profitable commercial enterprises by the spread of the railways from the 1840s on.

  Britain's canal network, together with its surviving mill buildings, is one of the most enduring features of the early Industrial Revolution to be seen in Britain.

- **Roads**

  Much of the original British road system was poorly maintained by thousands of local parishes, but from the 1720s (and occasionally earlier) turnpike trusts were set up to charge tolls and maintain some roads. Increasing numbers of main roads were turnpike from the 1750s to the extent that almost every main road in England and Wales was the responsibility of some turnpike trust. New engineered roads were built by John Metcalf, Thomas Telford and John Macadam. The major turnpikes radiated from London and were the means by which the Royal Mail was able to reach the rest of the country. Heavy goods transport on these roads was by means of slow, broad wheeled, carts

hauled by teams of horses. Lighter goods were conveyed by smaller carts or by teams of pack horse. Stage coaches carried the rich, and the less wealthy could pay to ride on carriers carts.

- **Railways**

  Wagon ways for moving coal in the mining areas had started in the 17th century and were often associated with canal or river systems for the further movement of coal. These were all horse drawn or relied on gravity, with a stationary steam engine to haul the wagons back to the top of the incline. The first applications of the steam locomotive were on wagon or plate ways (as they were then often called from the cast iron plates used). Horse-drawn public railways did not begin until the early years of the 19th century. Steam-hauled public railways began with the Stockton and Darlington Railway in 1825 and the Liverpool and Manchester Railway in 1830. Construction of major railways connecting the larger cities and towns began in the 1830s but only gained momentum at the very end of the first Industrial Revolution.

  After many of the workers had completed the railways, they did not return to their rural lifestyles but instead remained in the cities, providing additional workers for the factories. Railways helped Britain's trade enormously, providing a quick and easy way of transport and an easy way to transport mail and news.

12.7.3 Factories and urbanization

Industrialisation led to the creation of the factory. Arguably the first was John Lombe's water-powered silk mill at Derby, operational by 1721. However, the rise of the factory came somewhat later when cotton spinning was mechanised.

The factory system was largely responsible for the rise of the modern city, as large numbers of workers migrated into the cities in search of employment in the factories. Nowhere was this better illustrated than the mills and associated industries of Manchester, nicknamed "Cotton polis", and arguably the world's first industrial city. For much of the 19th century, production was done in small mills, which were typically water-powered and built to serve local needs. Later each factory would have its own steam engine and a chimney to give an efficient draft through its boiler. By 1746, an integrated brass mill was working at Warmley near Bristol. Raw material went in at one end, was smelted into brass and was turned into pans, pins, wire, and other goods.

12.8 HOUSING

Living conditions during the Industrial Revolution varied from the splendour of the homes of the owners to the squalor of the lives of the workers. Poor people lived in very small houses in cramped streets. These homes would share toilet facilities, have open sewers and would be at risk of damp. Disease was spread through a contaminated water supply. Conditions did improve during the 19th century as public health acts were introduced covering things such as sewage, hygiene and making some boundaries upon the construction of homes. Not everybody lived in homes like these. The Industrial Revolution created a larger middle class of professionals such as lawyers and doctors. The conditions for the poor improved over the course of the 19th century because of government and local plans which led to cities becoming cleaner places, but life had not been easy for the poor before industrialisation. However, as a result of the Revolution, huge numbers of the working class died due to diseases spreading through the cramped living conditions. Chest diseases from the mines, cholera from polluted water and typhoid were also extremely common, as was smallpox. Accidents in factories with child and female workers were regular. Strikes and riots by workers were also relatively common.

12.9 STANDARDS OF LIVING

The history of the change of living conditions during the industrial revolution has been very controversial, and was the topic that from the 1950s to the 1980s caused most heated debate among economic and social historians. A series of 1950s essays by Henry Phelps Brown and Sheila V. Hopkins later set the academic consensus that the bulk of the population that was at the bottom of the social ladder suffered severe reductions in their living standards. During the period 1813-1913 there was a significant increase in worker wages

12.10 POPULATION INCREASE

According to Robert Hughes in The Fatal Shore, the population of England and Wales, which had remained steady at 6 million from 1700 to 1740, rose dramatically after 1740. The population of England had more than doubled from 8.3 million in 1801 to 16.8 million in 1851 and, by 1901, had nearly doubled again to 30.5 million. As living conditions and health care improved during the 19th century, Britain's population doubled every 50 years. Europe's population doubled during the 18th century, from roughly 100 million to almost 200 million, and doubled again during the 19th century, to around 400 million.

12.11 OTHER EFFECTS

The application of steam power to the industrial processes of printing supported a massive expansion of newspaper and popular book publishing, which reinforced rising literacy and demands for mass political participation. During the Industrial Revolution, the life expectancy of children increased dramatically. The percentage of the children born in London who died before the age of five decreased from 74.5% in 1730–1749 to 31.8% in 1810–1829.

The growth of modern industry from the late 18th century onward led to massive urbanisation and the rise of new great cities, first in Europe and then in other regions, as new opportunities brought huge numbers of migrants from rural communities into urban areas. In 1800, only 3% of the world's population lived in cities, a figure that has risen to nearly 50% at the beginning of the 21st century, In 1717 Manchester was merely a market town of 10,000 people, but by 1911 it had a population of 2.3 million.

The greatest killer in the cities was tuberculosis (TB. By the late 19th century, 70 to 90% of the urban populations of Europe and North America were infected with *M. tuberculosis*, and about 40% of working-class deaths in cities were from TB.

12.12 SECOND INDUSTRIAL REVOLUTION AND LATER EVOLUTION

The insatiable demand of the railways for more durable rail led to the development of the means to cheaply mass-produce steel. Steel is often cited as the first of several new areas for industrial mass-production, which are said to characterise a "Second Industrial Revolution", beginning around 1850, although a method for mass manufacture of steel was not invented until the 1860s, when Sir Henry Bessemer invented a new furnace which could make wrought iron and steel in large quantities. However, it only became widely available in the 1870s. This second Industrial Revolution gradually grew to include the chemical industries, petroleum refining and distribution, electrical industries, and, in the twentieth century, the automotive industries, and was marked by a transition of technological leadership from Britain to the United States and Germany.

The introduction of hydroelectric power generation in the Alps enabled the rapid industrialisation of coal-deprived northern Italy, beginning in the 1890s. The increasing availability of economical petroleum products also reduced the importance of coal and further widened the potential for industrialisation.

Marshall McLuhan analysed the social and cultural impact of the electric age. While the previous age of mechanisation had spread the idea of splitting every process into a sequence, this was ended by the introduction of the instant speed of electricity that brought simultaneity. This imposed the cultural shift from the approach of focusing on "specialised segments of attention" (adopting one particular perspective), to the idea of "instant sensory awareness of the whole", an attention to the "total field", a "sense of the whole pattern". It made evident and prevalent the sense of "form and function as a unity", an "integral idea of structure and configuration". This had major impact in the disciplines of painting (with cubism), physics, poetry, communication and educational theory.

By the 1890s, industrialisation in these areas had created the first giant industrial corporations with burgeoning global interests, as companies like U.S. Steel, General Electric, and Bayer AG joined the railroad companies on the world's stock markets.

12.13 CAUSES

The causes of the Industrial Revolution were complicated and remain a topic for debate, with some historians believing the Revolution was an outgrowth of social and institutional changes brought by the end of feudalism in Britain after the English Civil War in the 17th century. As national border controls became more effective, the spread of disease was lessened, thereby preventing the epidemics common in previous times. The percentage of children who lived past infancy rose significantly, leading to a larger workforce. The Enclosure movement and the British Agricultural Revolution made food production more efficient and less labour-intensive, forcing the surplus population who could no longer find employment in agriculture into cottage industry, for example weaving, and in the longer term into the cities and the newly developed factories. The colonial expansion of the 17th century with the accompanying development of international trade, creation of financial markets and accumulation of capital are also cited as factors, as is the scientific revolution of the 17th century.

Until the 1980s, it was universally believed by academic historians that technological innovation was the heart of the Industrial Revolution and the key enabling technology was the invention and improvement of the steam engine. However, recent research into the Marketing Era has challenged the traditional, supply-oriented interpretation of the Industrial Revolution.

Lewis Mumford has proposed that the Industrial Revolution had its origins in the Early Middle Ages, much earlier than most estimates. He explains that the model for standardised mass production was the printing press and that "the archetypal model for the industrial era

was the clock". He also cites the monastic emphasis on order and time-keeping, as well as the fact that medieval cities had at their centre a church with bell ringing at regular intervals as being necessary precursors to a greater synchronisation necessary for later, more physical, manifestations such as the steam engine.

The presence of a large domestic market should also be considered an important driver of the Industrial Revolution, particularly explaining why it occurred in Britain. In other nations, such as France, markets were split up by local regions, which often imposed tolls and tariffs on goods traded amongst them. Internal tariffs were abolished by Henry VIII of England, they survived in Russia till 1753, 1789 in France and 1839 in Spain.

Governments' grant of limited monopolies to inventors under a developing patent system (the Statute of Monopolies 1623) is considered an influential factor. The effects of patents, both good and ill, on the development of industrialisation are clearly illustrated in the history of the steam engine, the key enabling technology. In return for publicly revealing the workings of an invention the patent system rewarded inventors such as James Watt by allowing them to monopolise the production of the first steam engines, thereby rewarding inventors and increasing the pace of technological development. However monopolies bring with them their own inefficiencies which may counterbalance, or even overbalance, the beneficial effects of publicising ingenuity and rewarding inventors. Watt's monopoly may have prevented other inventors, such as Richard Trevithick, William Murdoch or Jonathan Hornblower, from introducing improved steam engines, thereby retarding the industrial revolution by about 16 years.

12.14 LET US SUM UP

According to the original sector classification of Jean Fourastié, an economy consists of a "Primary sector" of commodity production, a "secondary sector" of manufacturing and processing (as paid work), and a "Tertiary Sector" of service industries. The industrialisation process is historically based on the expansion of the secondary sector in an economy dominated by primary activities.

The first transformation to an industrial economy from an agricultural one is called the Industrial Revolution and took place from the mid 18th to early 19th century in certain areas in Western Europe and North America, starting in Great Britain Derby, followed by Germany. This now is called the first industrial revolution

The Second Industrial Revolution describes the later changes that came about in the mid 19th century after the invention of steam engine, internal combustion engine, electricity and the construction of canals, railways and electric power lines. The invention of the assembly line gave this phase a boost

The lack of an industrial sector in a country can be a handicap in improving the country's economy and power, so governments encourage or enforce industrialisation. On the other hand, the presence of industry in a country does not mean in general that it will bring wealth and prosperity to the people of that country. And third, the presence of an industry in one country can make it more difficult for other countries to develop the same type of industry.

This can be seen in the computer- software-, and internet industries. Started from the U.S.A. around the 1990's these industries seemed to spread over the world. But after a period of monopolisation less than a decade long, the globally leading companies are concentrated in the U.S.A. Their economic power and capacity to dominate the media work against the developing of the same types of industry in other states.

12.15 KEY WORDS

Junker elites - The large landowners in the east.

Spinning Mule - A combination of the Spinning Jenny and the Water Frame.

Commodity production - farming, livestock breeding, exploitation of mineral resources.
Industrial Revolution - Diffusion of new social, economic political and industrial ideas and techniques beginning in Great Britain in the late eighteenth century.

12.16 QUESTIONS FOR SELF STUDY

1. **What were the origin and process of diffusion of industrialization?**
2. **What is modernization, explain the history of industrialization?**
3. **Explain the social and environmental consequences of industrialization?**

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UNIT - 13 : TECHNOLOGICAL CHANGES AND THEIRN GEOGRAPHICAL IMPLICATIONS

Structure

13.0 OBJECTIVES

After Studying of this unit, you will be able to:

- Evaluate the Present an overview of the dynamics of technical change that consists of the twin processes of innovation and diffusion.
- Define the concept of innovation and explore its key concepts.
- Examine innovation dynamics at the firm level.
- Identify the general patterns of technology innovation.
- Discuss the characteristics of innovative firms.

13.1 INTRODUCTION

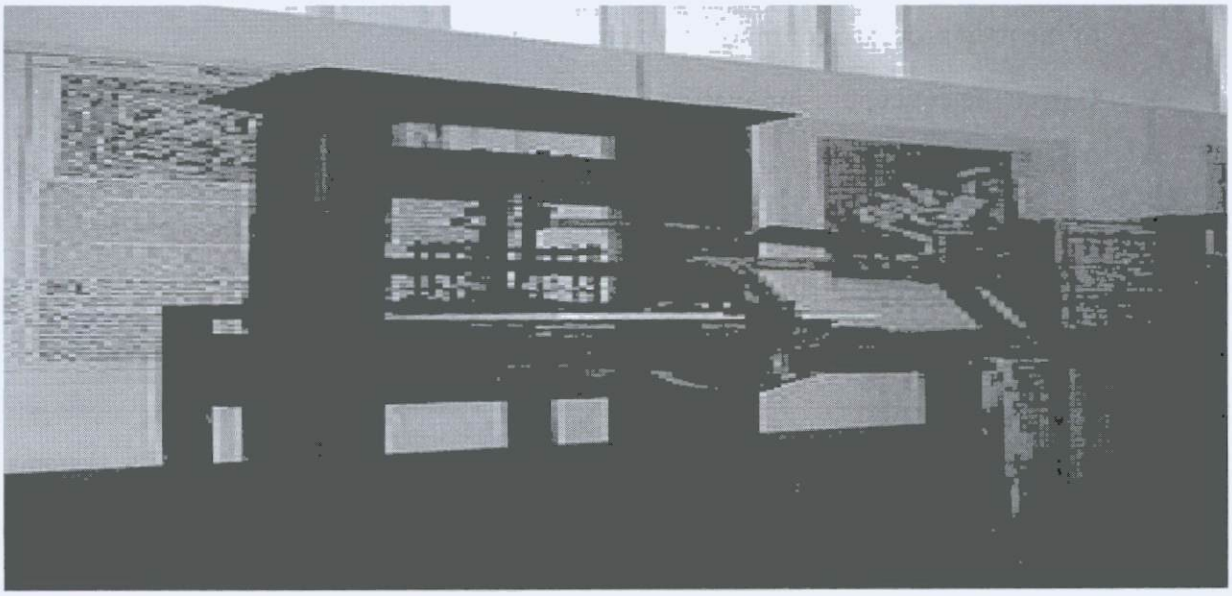
Technology is the making, usage and knowledge of tools, techniques, crafts, systems or methods of organization in order to solve a problem or serve some purpose. The word technology comes from Greek τεχνολογία (technología); from τέχνη (téchnē), meaning "art, skill, craft", and -λογία (-logía),, meaning "study of-". The term can either be applied generally or to specific areas: examples include construction technology, medical technology, and information technology.

13.2 SCIENCE, ENGINEERING AND TECHNOLOGY

Technologies significantly affect human as well as other animal species' ability to control and adapt to their natural environments. The human species' use of technology began with the conversion of natural resources into simple tools. The pre-historical discovery of the ability to control fire increased the available sources of food and the invention of the wheel helped humans in travelling in and controlling their environment. Recent technological developments, including the printing press, the telephone, and the Internet, have lessened physical barriers to communication and allowed humans to interact freely on a global scale. However, not all technology has been used for peaceful purposes; the development of weapons of ever-increasing destructive power has progressed throughout history, from clubs to nuclear weapons.

Technology has affected society and its surroundings in a number of ways. In many societies, technology has helped develop more advanced economies (including today's global economy) and has allowed the rise of a leisure class. Many technological processes produce unwanted by-products, known as pollution, and deplete natural resources, to the detriment of the Earth and its environment. Various implementations of technology influence the values

of a society and new technology often raises new ethical questions. Examples include the rise of the notion of efficiency in terms of human productivity, a term originally applied only to machines, and the challenge of traditional norms.



The invention of the printing press made it possible for scientists and politicians to communicate their ideas with ease, leading to the Age of Enlightenment; an example of technology as a cultural force.

The use of the term technology has changed significantly over the last 200 years. Before the 20th century, the term was uncommon in English, and usually referred to the description or study of the useful arts. The term was often connected to technical education, as in the Massachusetts Institute of Technology. "Technology" rose to prominence in the 20th century in connection with the second industrial revolution. The meanings of technology changed in the early 20th century when American social scientists, beginning with Thorstein Veblen, translated ideas from the German concept of Technik into "technology." In German and other European languages, a distinction exists between Technik and Technologie that is absent in English, as both terms are usually translated as "technology." By the 1930s, "technology" referred not to the study of the industrial arts, but to the industrial arts themselves. In 1937, the American sociologist Read Bain wrote that "technology includes all tools, machines, utensils, weapons, instruments, housing, clothing, communicating and transporting devices and the skills by which we produce and use them." Bain's definition remains common among scholars today, especially social scientists. But equally prominent is the definition of technology as applied science, especially among scientists and engineers, although most social scientists

who study technology reject this definition. More recently, scholars have borrowed from European philosophers of "technique" to extend the meaning of technology to various forms of instrumental reason, as in Foucault's work on technologies of the self.

Dictionaries and scholars have offered a variety of definitions. The Merriam-Webster dictionary offers a definition of the term: "the practical application of knowledge especially in a particular area" and "a capability given by the practical application of knowledge".Ursula Franklin, in her 1989 "Real World of Technology" lecture, gave another definition of the concept; it is "practice, the way we do things around here". The term is often used to imply a specific field of technology, or to refer to high technology or just consumer electronics, rather than technology as a whole.http://en.wikipedia.org/wiki/Technology - cite_note-7 Bernard Stiegler, in Technics and Time, 1, defines technology in two ways: as "the pursuit of life by means other than life", and as "organized inorganic matter."

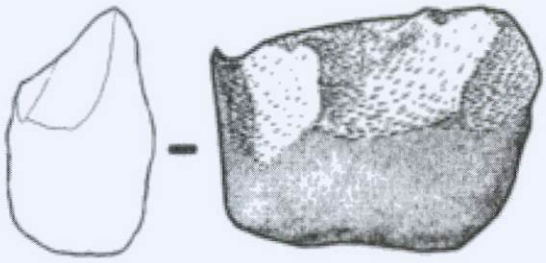
Technology can be most broadly defined as the entities, both material and immaterial, created by the application of mental and physical effort in order to achieve some value. In this usage, technology refers to tools and machines that may be used to solve real-world problems. It is a far-reaching term that may include simple tools, such as a crowbar or wooden spoon, or more complex machines, such as a space station or particle accelerator. Tools and machines need not be material; virtual technology, such as computer software and business methods, fall under this definition of technology.

The word "technology" can also be used to refer to a collection of techniques. In this context, it is the current state of humanity's knowledge of how to combine resources to produce desired products, to solve problems, fulfil needs, or satisfies wants; it includes technical methods, skills, processes, techniques, tools and raw materials. When combined with another term, such as "medical technology" or "space technology", it refers to the state of the respective field's knowledge and tools. "State-of-the-art technology" refers to the high technology available to humanity in any field.

Technology can be viewed as an activity that forms or changes culture. Additionally, technology is the application of math, science, and the arts for the benefit of life as it is known. Not all technology enhances culture in a creative way; technology can also help facilitate political oppression and war via tools such as guns. As a cultural activity, technology predates both science and engineering, each of which formalizes some aspects of technological endeavour.

13.3 HISTORY

13.3.1 Palaeolithic (2.5 million – 10,000 BC)

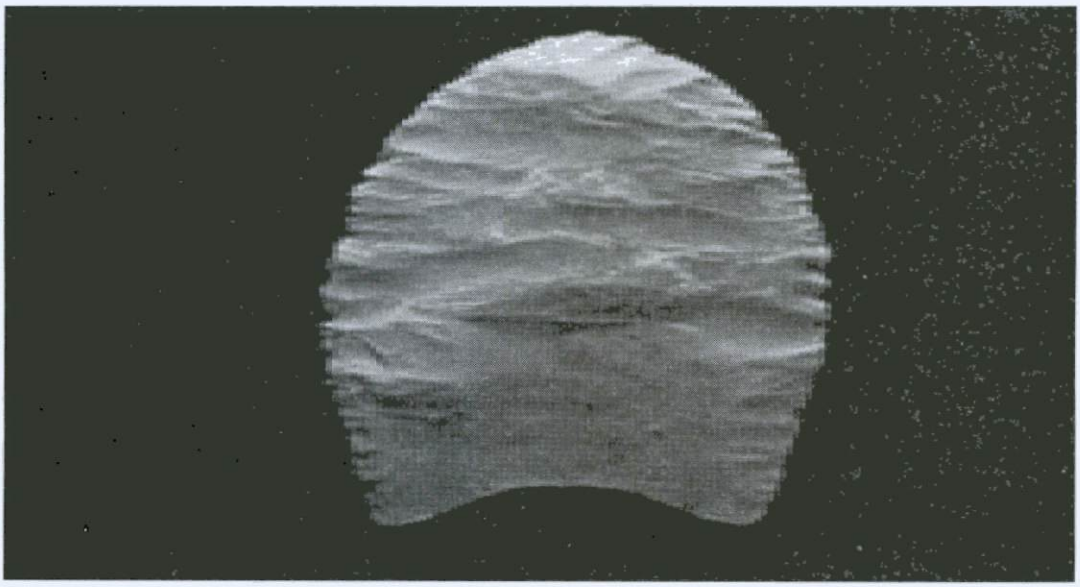


A Primitive chopper

The use of tools by early humans was partly a process of discovery, partly of evolution. Early humans evolved from a species of foraging hominids which were already bipedal, with a brain mass approximately one third that of modern humans. Tool use remained relatively unchanged for most of early human history, but approximately 50,000 years ago, a complex set of behaviours and tool use emerged, believed by many archaeologists to be connected to the emergence of fully modern language.

13.3.1.1 Stone tools

Hand axes from the Acheulian period



A Clovis point, made via pressure flaking

Human ancestors have been using stone and other tools since long before the emergence of Homo sapiens approximately 200,000 years ago. The earliest methods of stone tool making, known as the Oldowan "industry", date back to at least 2.3 million years ago, with the earliest direct evidence of tool usage found in Ethiopia within the Great Rift Valley, dating back to 2.5 million years ago. This era of stone tool use is called the Paleolithic, or "Old stone age", and spans all of human history up to the development of agriculture approximately 12,000 years ago.

The earliest stone tools were crude, being little more than a fractured rock. In the Acheulian era, beginning approximately 1.65 million years ago, methods of working these stone into specific shapes, such as hand axes emerged. The Middle Paleolithic, approximately 300,000 years ago, saw the introduction of the prepared-core technique, where multiple blades could be rapidly formed from a single core stone. The Upper Paleolithic, beginning approximately 40,000 years ago, saw the introduction of pressure flaking, where a wood, bone, or antler punch could be used to shape a stone very finely.

13.3.1.2 Fire

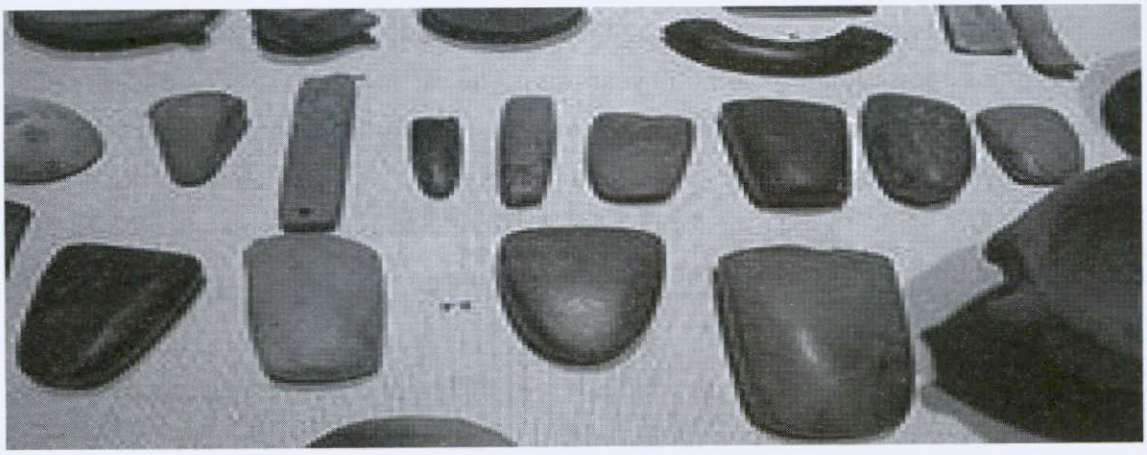
The discovery and utilization of fire, a simple energy source with many profound uses, was a turning point in the technological evolution of humankind. The exact date of its discovery is not known; evidence of burnt animal bones at the Cradle of Humankind suggests that the domestication of fire occurred before 1,000,000 BC; scholarly consensus indicates that Homo

erectus had controlled fire by between 500,000 BC and 400,000 BC. Fire, fuelled with wood and charcoal, allowed early humans to cook their food to increase its digestibility, improving its nutrient value and broadening the number of foods that could be eaten.

13.3.1.3 Clothing and shelter

Other technological advances made during the Palaeolithic era were clothing and shelter; the adoption of both technologies cannot be dated exactly, but they were a key to humanity's progress. As the Palaeolithic era progressed, dwellings became more sophisticated and more elaborate; as early as 380,000 BC, humans were constructing temporary wood huts. Clothing, adapted from the fur and hides of hunted animals, helped humanity expand into colder regions; humans began to migrate out of Africa by 200,000 BC and into other continents, such as Eurasia

13.3.2 Neolithic through Classical Antiquity (10,000BC – 300AD)



An array of Neolithic artefacts, including bracelets, axe heads, chisels, and polishing tools.

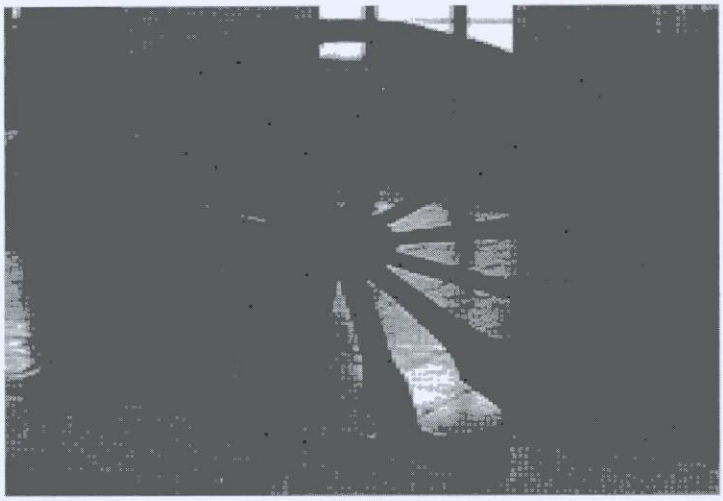
Man's technological ascent began in earnest in what is known as the Neolithic period ("New stone age"). The invention of polished stone axes was a major advance because it allowed forest clearance on a large scale to create farms. The discovery of agriculture allowed for the feeding of larger populations, and the transition to a sedentist lifestyle increased the number of children that could be simultaneously raised, as young children no longer needed to be carried, as was the case with the nomadic lifestyle. Additionally, children could contribute labour to the raising of crops more readily than they could to the hunter-gatherer lifestyle.

With this increase in population and availability of labour came an increase in labour specialization. What triggered the progression from early Neolithic villages to the first cities, such as Uruk, and the first civilizations, such as Sumer, is not specifically known; however, the emergence of increasingly hierarchical social structures, the specialization of labour, trade and war amongst adjacent cultures, and the need for collective action to overcome environmental challenges, such as the building of dikes and reservoirs, are all thought to have played a role.

13.3.2.1 Metal tools

Continuing improvements led to the furnace and bellows and provided the ability to smelt and forge native metals (naturally occurring in relatively pure form). Gold, copper, silver, and lead, were such early metals. The advantages of copper tools over stone, bone, and wooden tools were quickly apparent to early humans, and native copper was probably used from near the beginning of Neolithic times (about 8000 BC).http://en.wikipedia.org/wiki/Technology - cite_note-38 Native copper does not naturally occur in large amounts, but copper ores are quite common and some of them produce metal easily when burned in wood or charcoal fires. Eventually, the working of metals led to the discovery of alloys such as bronze and brass (about 4000 BC). The first uses of iron alloys such as steel dates to around 1400 BC.

13.3.2.2 Energy and Transport



The wheel was invented circa 4000 BC.

Meanwhile, humans were learning to harness other forms of energy. The earliest known use of wind power is the sailboat. The earliest record of a ship under sail is shown on an Egyptian pot dating back to 3200 BC. From prehistoric times, Egyptians probably used the power of the Nile annual floods to irrigate their lands, gradually learning to regulate much of it through purposely built irrigation channels and 'catch' basins. Similarly, the early peoples of Mesopotamia, the Sumerians, learned to use the Tigris and Euphrates rivers for much the same purposes. But more extensive use of wind and water (and even human) power required another invention.

According to archaeologists, the wheel was invented around 4000 B.C. probably independently and nearly-simultaneously in Mesopotamia (in present-day Iraq), the Northern Caucasus (Maykop culture) and Central Europe. Estimates on when this may have occurred range from 5500 to 3000 B.C., with most experts putting it closer to 4000 B.C. The oldest artefacts with drawings that depict wheeled carts date from about 3000 B.C.; however, the wheel may have been in use for millennia before these drawings were made. There is also evidence from the same period of time that wheels were used for the production of pottery. More recently, the oldest-known wooden wheel in the world was found in the Ljubljana marshes of Slovenia.

The invention of the wheel revolutionized activities as disparate as transportation, war, and the production of pottery (for which it may have been first used). It didn't take long to discover that wheeled wagons could be used to carry heavy loads and fast potters' wheels enabled early mass production of pottery. But it was the use of the wheel as a transformer of energy (through water wheels, windmills, and even treadmills) that revolutionized the application of nonhuman power sources.

13.3.3 Medieval and Modern history (300 AD)

Innovations continued through the Middle Ages with new innovations such as silk, the horse collar and horseshoes in the first few hundred years after the fall of the Roman Empire. Medieval technology saw the use of simple machines (such as the lever, the screw, and the pulley) being combined to form more complicated tools, such as the wheelbarrow, windmills and clocks. The Renaissance brought forth many of these innovations, including the printing press (which facilitated the greater communication of knowledge), and technology became increasingly associated with science, beginning a cycle of mutual advancement. The advancements in technology in this era allowed a more steady supply of food, followed by the wider availability of consumer goods.

Starting in the United Kingdom in the 18th century, the Industrial Revolution was a period of great technological discovery, particularly in the areas of agriculture, manufacturing, mining, metallurgy and transport, driven by the discovery of steam power. Technology later took another step with the harnessing of electricity to create such innovations as the electric motor, light bulb and countless others. Scientific advancement and the discovery of new concepts later allowed for powered flight, and advancements in medicine, chemistry, physics and engineering. The rise in technology has led to the construction of skyscrapers and large cities whose inhabitants rely on automobiles or other powered transit for transportation. Communication was also improved with the invention of the telegraph, telephone, radio and television.

The second half of the 20th century brought a host of new innovations. In physics, the discovery of nuclear fission has led to both nuclear weapons and nuclear energy. Computers were also invented and later miniaturized utilizing transistors and integrated circuits. These advancements subsequently led to the creation of the Internet. Humans have also been able to explore space with satellites (later used for telecommunication) and in manned missions going all the way to the moon. In medicine, this era brought innovations such as open-heart surgery and later stem cell therapy along with new medications and treatments. Complex manufacturing and construction techniques and organizations are needed to construct and maintain these new technologies, and entire industries have arisen to support and develop succeeding generations of increasingly more complex tools. Modern technology increasingly relies on training and education — their designers, builders, maintainers, and users often require sophisticated general and specific training. Moreover, these technologies have become so complex that entire fields have been created to support them, including engineering, medicine, and computer science, and other fields have been made more complex, such as construction, transportation and architecture.

13.4 APPROPRIATE TECHNOLOGY

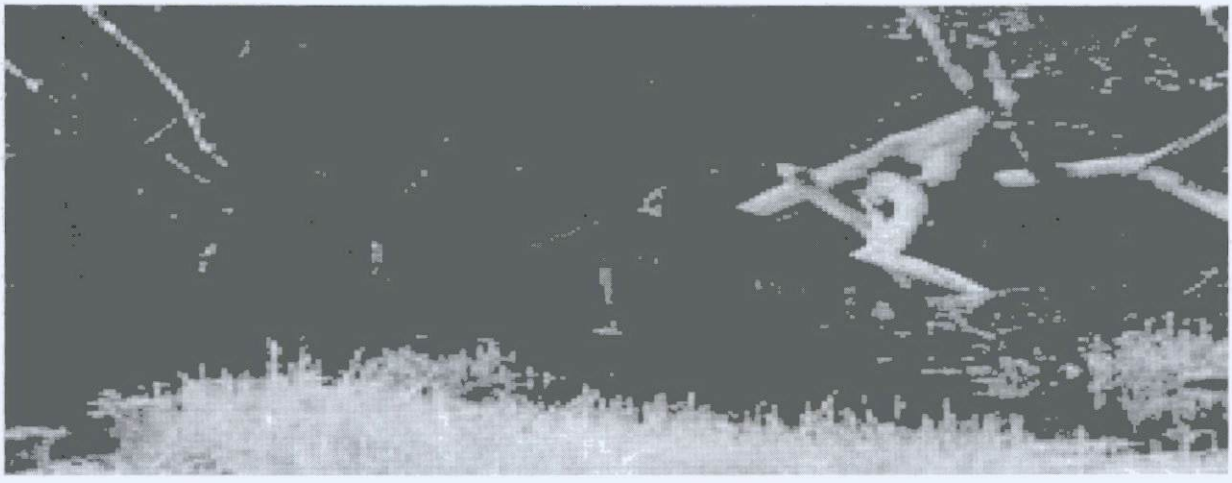
The notion of appropriate technology, however, was developed in the 20th century to describe situations where it was not desirable to use very new technologies or those that required access to some centralized infrastructure or parts or skills imported from elsewhere. The eco-village movement emerged in part due to this concern.

13.5 TECHNOLOGY AND COMPETITIVENESS

In 1983 a classified program was initiated in the US intelligence community to reverse the US declining economic and military competitiveness. The program, Project Socrates, used all source intelligence to review competitiveness worldwide for all forms of competition to determine the source of the US decline. What Project Socrates determined was that technology exploitation is the foundation of all competitive advantage and that the source of the US declining competitiveness was the fact that decision-making through the US both in the private and public sectors had switched from decision making that was based on technology exploitation (i.e., technology-based planning) to decision making that was based on money exploitation (i.e., economic-based planning) at the end of World War II.

Technology is properly defined as any application of science to accomplish a function. The science can be leading edge or well established and the function can have high visibility or be significantly more mundane but it is all technology, and its exploitation is the foundation of all competitive advantage.

13.6 OTHER ANIMAL SPECIES



This adult gorilla uses a branch as a walking stick to gauge the water's depth; an example of technology usage by primates.

The use of basic technology is also a feature of other animal species apart from humans. These include primates such as chimpanzees, some dolphin communities, and crows. Considering a more generic perspective of technology as ethology of active environmental conditioning and control, we can also refer to animal examples such as beavers and their dams, or bees and their honeycombs.

The ability to make and use tools was once considered a defining characteristic of the genus Homo. However, the discovery of tool construction among chimpanzees and related primates has discarded the notion of the use of technology as unique to humans. For example, researchers have observed wild chimpanzees utilising tools for foraging: some of the tools used include leaf sponges, termite fishing probes, pestles and levers. West African chimpanzees also use stone hammers and anvils for cracking nuts, as do capuchin monkeys of Boa Vista, Brazil.

13.7 TECHNOLOGICAL CHANGE

Original model of three phases of the process of Technological Change

Technological change (TC) is a term that is used to describe the overall process of invention, innovation and diffusion of technology or processes. The term is redundant with technological development, technological achievement, and technological progress. In essence TC is the invention of a technology, the continuous process of improving a technology and its diffusion throughout industry or society. In its earlier days, technological change was illustrated with the 'Linear Model of Innovation', which has now been largely discarded to be replaced with a model of technological change that involves innovation at all stages of research, development, diffusion and use.

13.8 MODELLING TECHNOLOGICAL CHANGE

When spoken about "modelling technological change" often the process of innovation is meant. This process of continuous improvement is often modelled as a curve depicting decreasing costs over time

TC is often modelled using a learning curve, ex.: Ct=C0 * Xt^-b

TC itself is often included in other models (for instance climate change models) and was often taken as an exogenous factor. These days TC is more often included as an endogenous factor. This means that it is taken as something you can influence. It is generally accepted that policy can influence the speed and direction of TC (for instance more towards clean technologies). This is referred to as Induced Technological Change.

13.8.1 Invention

The creation of something new, or a "breakthrough" technology. For example, a personal computer.

13.8.2 Diffusion

The spread of a technology through a society or industry. The diffusion of a technology generally follows an S-shaped curve as early versions of technology are rather unsuccessful, followed by a period of successful innovation with high levels of adoption, and finally a dropping off in adoption as a technology reaches its maximum potential in a market

13.9 TECHNOLOGICAL CHANGE AS A SOCIAL PROCESS

Underpinning the idea of technological change as a social process is general agreement on the importance of social context and communication. According to this model, technological change is seen as a social process involving producers and adopters and others (such as government) who are profoundly affected by cultural setting, political institutions and marketing strategies.

13.10 ELEMENTS OF DIFFUSION

Emphasis has been on four key elements of the technological change process:

(1) An innovative technology

(2) Communicated through certain channels

(3) To members of a social system

(4) Who adopt it over a period of time?

These elements are derived from Everett M. Rogers Diffusion of innovations theory using a communications-type approach.

13.10.1 Innovation

Rogers proposes that there are five main attributes of innovative technologies which influence acceptance. These are relative advantage, compatibility, complexity, trial ability, and observability. Relative advantage may be economic or non-economic, and is the degree to which an innovation is seen as superior to prior innovations fulfilling the same needs. It is positively related to acceptance (i.e., the higher the relative advantage, the higher the adoption level, and vice versa). Compatibility is the degree to which an innovation appears consistent

with existing values, past experiences, habits and needs to the potential adopter; a low level of compatibility will slow acceptance. Complexity is the degree to which an innovation appears difficult to understand and use; the more complex an innovation, the slower its acceptance. Trialability is the perceived degree to which an innovation may be tried on a limited basis, and is positively related to acceptance. Trialability can accelerate acceptance because small-scale testing reduces risk. Observability is the perceived degree to which results of innovating are visible to others and is positively related to acceptance.

13.10.2 Communication channels

Communication channels are the means by which a source conveys a message to a receiver. Information may be exchanged through two fundamentally different, yet complementary, channels of communication. Awareness is more often obtained through the mass media, while uncertainty reduction that leads to acceptance mostly results from face-to-face communication.

13.10.3 Social system

The social system provides a medium through which and boundaries within which, innovation is adopted. The structure of the social system affects technological change in several ways. Social norms, opinion leaders, change agents, government and the consequences of innovations are all involved. Also involved are cultural setting, nature of political institutions, laws, policies and administrative structures.

13.10.4 Time

Time enters into the acceptance process in several ways. The time dimension relates to the innovativeness of an individual or other adopter, which is the relative earliness or lateness with which an innovation is adopted.

13.11 ECONOMICS

Technological change is a term that is used in economics to describe a change in the set of feasible production possibilities. Neutral technological change refers to the behaviour of technological change in models. A technological innovation is Hicks neutral, following John Hicks (1932), if a change in technology does not change the ratio of capital's marginal product to labour's marginal product for a given capital to labour ratio. A technological innovation is Harrod neutral if the technology is labour-augmenting it is Solow neutral if the technology is capital-augmenting.

Technological change in the developed countries has important implications for the competitiveness of manufactured exports in Africa. The policy implications of the changing technological conditions are likely to surface at two levels: a focus on monitoring new and emerging technologies with a view to making policy decisions relating to adopting and learning the new technologies at the right time, and an examination of the internal evolution of technological and demand condition.

13.12 DEVELOPMENTS IN SOME NEW TECHNOLOGIES

During the past decade the greatest technological progress has been made in information technology (microelectronics and micro-photonics), space technologies, new materials, nuclear energy, biotechnology, and pharmaceuticals and fine chemicals. Technological change can boost the growth of some industries (and even revitalize declining industries) and cause decline in others. New industries may emerge and old ones may disappear.

Recent technological developments have led to shifts in the composition of factors of production, with a considerable decline in the importance of raw materials, energy and labour inputs and an increase in knowledge intensity. Material-saving innovations have led to a decline in the consumption of natural materials and their replacement by new and advanced materials (especially engineering ceramics and polymers, composites, semi-conductors, opto-electronic materials and amorphous alloys). In addition to replacing natural materials, the advanced materials also improve strength and quality, add flexibility and cut weight. In world trade there has been an increase in the share of manufactured products and in particular high-tech products.

Technological change can result in the redefinition of industry boundaries. Where key factors of success are capable of being shared, the limits between businesses (industries) tend to be blurred (e.g. computers, telecommunications and office automation). Where technological change leads to a reduction in the sharing of the costs of key resources, the result may be de-segmentation of the industry into smaller units. The distinction between manufacturing and services sectors is being blurred by their growing interconnectedness. The competitiveness of manufacturing firms now depends crucially on the quality of their interactions with the services sector, notably business services and key infrastructural services.

In reality, the pattern of manufacturing industry in the highly industrialized countries has changed considerably as services take the lead, with new skill-and-capital intensive services such as informatics gaining ground.. The most economically significant of the new technologies, in terms of the range of new products, cost savings, quality improvements and sectors of

application, is information technology, followed by new materials and biotechnology. The discussion here is confined to information technology as it has been most pervasive and has the greatest economic significance.

The new paradigm in information technology (IT) is characterized by profound changes in the business application of computers, in the nature of the technology itself and in leadership in the use of technology.

Changes in IT use have involved a shift from stand-alone equipment and applications to computer-based networking and new information services. Telecommunications are used to connect IT equipment in the office to equipment on the factory floor. This shift is a response to changes in market conditions. Changing market demands have to be adjusted to more quickly, and just-in-time deliveries and more customized products and services impose their own requirements. The rapid feedback and response which IT permits may spur innovation processes in terms of product and/or service improvements, including improvements in R&D itself.

The application and impact of IT have even permeated many traditional industries (e.g. textiles and clothing), where the need to improve competitiveness has led to the internalization of production and rapid increases in the knowledge-intensiveness of production. This makes the adoption of new technologies a necessary investment in competitiveness. The rapid changes in technology and globalization favour flexibility and innovativeness in the adjustment process. Low labour costs are less effective as a basis of competitiveness, while low educational levels are not conducive to the adoption of new technologies.

Mody and Wheeler (1990) found that clothing and textiles producers in the NICs are facing competition from the exports of the newly invigorated economies of Asia, e.g. China, India, Indonesia, based on low wages. Along with this increase in wage-based competition, sophisticated microelectronics-based systems for clothing and textile production are emerging in the OECD economies. Robotics, in this scenario, is a critical infant industry, with protection of the textiles market expected to give enough time and investible surplus for the OECD manufacturers to consolidate and restructure for automated production. It is hoped that 10 years of phasing out the MFA, as agreed in the Uruguay Round, will provide ample time for this infant industry to mature.

However, semi-automated technology is now viable for a number of operations, resulting in very low wage costs. The advantages of using advanced technologies are most likely to be reflected in shortening the production cycle, thus saving time and working capital and improving

the ability to respond to customer demand at short notice. Some of the areas which are likely to be relevant for technical progress in clothing are: computer design; automatic cutting; flexible sewing and finishing technology incorporating microprocessors; robotic handling; unit production systems; shop-floor controls; logistics; supplier linkages; retail linkages and merchandise control and implementation.

The textile industry has been characterized by continuous incremental technological changes. The industry produces some final products for the consumer market but its main products are inputs (yarn and cloth) into the clothing industry, which normally imposes product and design choice. This makes engineering design more important than product design in textiles. New raw materials are continuously being introduced to the industry but the basic characteristics of the products do not change dramatically. The introduction of microelectronics to machinery control operations has contributed to productivity increases, improved effectiveness and greater reliability, quality and flexibility. While developments in the textile industry are influenced by technological change, one should not lose sight of the influences of other factors such as changes in global demand and developments in the clothing industry and, in particular, the firm strategies of large clothing enterprises.

The share of developing countries in the global textile export market increased from 18.8 per cent in 1973 to 22.7 per cent in 1982 and 28 per cent in 1988. Exports from developed market economies accounted for 62 per cent of international trade in textiles in 1970, falling to 50 per cent in 1980 and to 39 per cent in 1985. At the same time, exports from developing market economies increased from 21 per cent of world trade in 1970 to 36.5 per cent in 1980 and 50.5 per cent in 1985. Within the developing countries, the core of production is moving from the East Asian NICs to the second tier of lower-wage ASEAN countries such as Indonesia, Bangladesh, Sri Lanka, Thailand and the Philippines.

Recent technological developments have occurred in overall mill control, the integration of factory departments, improved quality and reliability and increased flexibility in production. The main technological changes in the past 40 years (1950-90) have been automatic bale feeders, aero feed systems, high-draft spinning, texturizing (with the development of the air-jet method and the false twist method resulting in increases in the speed and quality of yarn), shuttle less looms providing higher speed and better quality and flexibility of the woven fabric, needle-punch machines, transfer printing, rotary screen printing and increasing computer integration in the manufacturing process. The main changes in spinning have occurred in the spinning frame itself, through high-draft spinning and the development of new spinning methods (open-end spinning) which run at much higher spindle speeds. The main effect has been to

reduce the number of pre-spinning steps and limit the need for roving. The newer spinning systems have also reduced the trade-off between productivity, product flexibility and quality. For instance, rotor and air-jet spinning can produce a greater number of yarn counts, of good quality and at high speed, suitable for most applications in knitting and weaving.

There is still a relative advantage in labour costs in developing countries, as shown in Table 4.3. However, a country such as Italy does not have low labour costs, even within the OECD, yet it was the most successful in the OECD both in textile production and exports. This suggests that labour costs do not tell the whole story. The role of technological and organizational factors (including flexible linkages and production chains and contacts with the markets) in ensuring flexibility, fast and timely delivery and reliable high quality needs to be appreciated.

Table 13.1 Main technological developments in various phases of short staple-spinning and their effects on output

Activity/process	**Output (pounds/hr) 1969**	**Output (pounds/hr) 1987**	**Projected output (pounds/hr) 2000**	**% change 1945-69**	**% change 1969-87**
Blender	200	1320	2200	0	560
Cards	18	88	154	157	389
Drawings (ft/m)	800	547	874	700	-32
Lapping	500	836	990	233	67
Combing	50	110	132	78	120
Roving (warp)*	1.75	2	2	73	14
Roving (filling)*	1.30	-	-	87	-
Spinning (warp)*	0.036	0.036	0.048	66	0
Spinning (filling)*	0.023	0.036	0.048	51	55

Source:Adapted from UNIDO, 1990b. p. 202

Note: *Pounds/spindle/hour

Table 13.2 Main technological developments in various phases of short staple-spinning and their effects on capital cost per machine

Activity/process	Cost/unit (US$ 1000) 1969	Cost/unit (US$ 1000) 1987	Projected cost/unit (US$ 1000) 2000	%change 1945-69	% change 1969-87
Blender	4.5	103.4	206.9	228	2198
Cards	6.0	103.4	172.4	171	1623
Drawings	3.2	51.7	103.4	-	1516
Lapping	14.0	124.1	172.4	183	786
Combing	14.5	137.9	172.4	285	851
Roving	26.4	124.1	310.3	212	370
Spinning	21.5	79.5	149.0	340	270

Source: Time Horizons. March 1991

Table 13.3 Labour costs in selected countries 1980 - 90

Country	1980	1990	% change 1980-90
Switzerland	9.65	19.23	99.3
Sweden	10.43	18.70	79.3
Holland	11.68	17.84	52.7
West Germany	10.65	16.46	54.6
Italy	9.12	16.13	76.9
Japan	4.35	13.96	220.9
UK	5.75	10.20	77.4
USA	6.37	10.02	57.3
Spain	4.90	7.69	56.9
Greece	4.03	5.85	45.2
Taiwan	1.26	4.56	261.9
South Korea	0.78	3.22	312.8
Brazil	1.57	1.97	25.5
Turkey	0.95	1.82	91.6
Thailand	0.33	0.92	178.8

Malaysia	-	0.86	-
India	0.60	0.72	20.0
Philippines	0.43	0.67	55.8
Indonesia	0.63	0.25	-60.3
Sri Lanka	0.16	0.24	50.0
Tunisia	1.13	2.82	149.6
South Africa	-	1.57	-
Morocco	0.85	1.28	50.6
Ethiopia	-	0.87	-
Kenya	-	0.63	-
Tanzania	-	0.32	-
Nigeria	-	0.30	-

The relative labour cost advantage is not sufficient reason to delay the selective adoption of new technologies in low-wage economies. In spite of their relative labour cost advantage, some developing countries (especially the Asian countries) are closing the technological gap with developed countries. One indicator of this process is investment in new machinery. In 1988, Asian countries accounted for 46.3 per cent of world investment, ahead of Western Europe (26.1 per cent) and North America (10.5 per cent). South America (3.4 per cent) and Africa (1.9 per cent) seem to have lagged far behind. More investment occurred in new spinning machinery (US$2.8 billion) than for weaving (US$2.5 billion), suggesting an emphasis on modernizing yarn making rather than fabric making.

The clothing industry is less strongly driven by its production technology than textiles, while product design and market considerations were found to be more important. The industry is more segmented, with very differentiated products (in terms of materials, designs and production requirements) for a variety of markets .

In one segment of the clothing industry (that producing basic products) production cost is the main competitive advantage, while in the fashionable goods segment rapid response is the main focal point of manufacture. A third segment producing high-quality clothing has its competitive advantage in variety.

The main phases of clothing manufacture are: the pre-production stages such as design, pattern making, grading, nesting, marking and cutting; the actual production process such as sewing and assembling the product; and the finishing operations, which consist of inspection, pressing and packaging.

The most important technological innovations in the 1970s have been: the use of computers in marketing, inventory control and work-flow management; the use of CAD in grading and marking operations; the use of numerically controlled equipment and computer-aided laser cutting systems, which are faster, are more accurate and reduce material losses; and the use of pre-programmed, dedicated sewing machines in sub-assembly operations.

Sewing technology has developed slowly, with the gradual replacement of electro-mechanical systems with electronics. Three basic types of machine control applications have been developed: the dedication of microprocessors and numerical control units to the operations of specialized work stations; the use of pre-programmable convertible multi-task machines; and the use of operator-programmable sewing machines which, once programmed, take over all functions except guiding the material.

Technological innovations in the finishing phase have been limited to pressing and repairing rejects from the inspection process.

13.13 LET US SUM UP

The distinction between science, engineering and technology is not always clear. Science is the reasoned investigation or study of phenomena, aimed at discovering enduring principles among elements of the phenomenal world by employing formal techniques such as the scientific method. Technologies are not usually exclusively products of science, because they have to satisfy requirements such as utility, usability and safety.

Engineering is the goal-oriented process of designing and making tools and systems to exploit natural phenomena for practical human means, often using results and techniques from science. The development of technology may draw upon many fields of knowledge, including scientific, engineering, mathematical, linguistic, and historical knowledge, to achieve some practical result.

Technology is often a consequence of science and engineering — although technology as a human activity precedes the two fields. For example, science might study the flow of electrons in electrical conductors, by using already-existing tools and knowledge. This new-found knowledge may then be used by engineers to create new tools and machines, such as

semiconductors, computers, and other forms of advanced technology. In this sense, scientists and engineers may both be considered technologists; the three fields are often considered as one for the purposes of research and reference.

The exact relations between science and technology in particular have been debated by scientists, historians, and policymakers in the late 20th century, in part because the debate can inform the funding of basic and applied science. In the immediate wake of World War II, for example, in the United States it was widely considered that technology was simply "applied science" and that to fund basic science was to reap technological results in due time. An articulation of this philosophy could be found explicitly in Vannevar Bush's treatise on post-war science policy, Science—The Endless Frontier: "New products, new industries, and more jobs require continuous additions to knowledge of the laws of nature... This essential new knowledge can be obtained only through basic scientific research." In the late-1960s, however, this view came under direct attack, leading towards initiatives to fund science for specific tasks (initiatives resisted by the scientific community). The issue remains contentious—though most analysts resist the model that technology simply is a result of scientific research.

13.14 KEY WORDS

TC-Technological change, **Technology-** technology includes all tools, machines, utensils, weapons, instruments, housing, clothing, communicating and transporting devices and the skills by which we produce and use them. **Neolithic period** -New Stone Age.

13.15 QUESTIONS FOR SELF STUDY

1 Explain the origin and diffusion of technology

2. Discuss the technological changes in the world

3. Explain different technological elements of diffusion.

13.16 FURTHER READING

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UNIT - 14 : HUMAN SETTLEMENTS, PATTERNS OF RURAL AND URBAN SETTLEMENTS

Structure

14.0 OBJECTIVES

After the studying of this unit, you will be able to

- Identify the human settlements both rural and urban
- Discuss the size and spacing of rural settlements
- Appreciation of morphological structures, functional classification of towns and their hierarchical Order

14.1 INTRODUCTION

The term "human settlements" refer to any gathering of human dwellings that are economically viable. Defined by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) as "human communities," human settlement types include any known form of structures. Hamlets, urban agglomerations, urban outgrowths, and semi-clustered settlements meet the definition of human settlements. Human settlements occur wherever human beings gather and attempt commerce. In other words, Human Settlement means cluster of dwellings of any type or size where human beings live. For this purpose, people may erect houses and command some area or territory as their economic support-base.

14.2 TYPES OF RURAL SETTLEMENTS

Rural settlements may be divided in to four types.

1) Compact,

2) Semi Compact,

3) Semi Sprinkled, and

4) Dispersed rural settlements.

14.2.1. Compact rural settlements

It is known as nucleated, clustered, or compact rural settlement. In this type the houses are located and the streets are very narrow. The narrow lines function like nervous system in human body. The streets connects center of the village with periphery and vice versa. Tank, temple, Banyan tree, fort and land lords house are center of attraction of the village around which houses are located. In these, are the amount of rainfall is sufficient for agriculture practices, the soil is fertile and the concentration of population in relatively high. In India the

compact rural settlements are found in northern plains besides the western plains of peninsular India. In compact settlement the satellite settlements are absent and the main village expands in different direction in a star or rectangular shape.

14.2.2 Semi compact rural settlements

It may be called quasi compact settlement. In this type besides the main human settlement one or more satellite settlements are found which are linked with the foot path or metalled or unmetalled road. The characteristics feature of semi compact area is liable to occupational flood, the transport development is relatively poor and one habitation is closely related with the neighboring village for low income group. Such settlements are the labour reserve for the land lords, mostly agricultural labors reside in a satellite settlement. In semi compact settlement the Population density is 250 to 500 persons per sq km and the area is flood plain of rivers. In this area the water table in relatively low in comparison with compact settlement.

14.2.3 Semi sprinkled settlements

Semi sprinkles or helmeted rural settlement is a characteristic feature in areas of high water table innumerable rivers and mountainous and forested areas of high relief where the facets of land is completely divided up. These types of settlements are also prevalent in semi desert areas. This type of settlement are found in the scarp belt of Chotanagpur plateau, Himalaya foothills and semi desert areas of Karnataka, Maharashtra, Madhya Pradesh and parts of Rajasthan and Gujarat .In the areas of semi sprinkled settlements, the environmental pollution in relatively low.

14.2.4. Dispersed rural settlements

Wherever the houses are found quite apart from each other due to low sustainable capacity of land then it is known as dispersed or sprinkled rural settlement. Thus dispersed rural settlement is a chrematistic feature of rough terrain intense flooding areas, desert lands and the land which is water logged for a long time. This type of settlement is found in Ganga delta, Thar Desert of Rajasthan and mountainous tracks of Himalaya. Here the facets of land are completely divided up due to undulating topography, extremes of climate and poor productively of soil. Compact rural settlement in the product of permanent agriculture, productive land favorable climatic conditions where as dispersed rural settlement in found in areas as disposed rural settlement is found in areas of rugged topography where the landscape itself divided in to various facets leading to dispersed rural settlements.

14.3 PATTERNS OF RURAL SETTLEMENTS

The rural settlement pattern has varied patterns by reasons of contrast in the arrangement of their street and houses. They are visible in the landscapes of all the countries. The rural settlements pattern is of different types. They are;

14.3.1 Linear Pattern

Such a pattern is easily recognized by the simple arrangement of houses along a line or a series of lines, such settlements are found along higher levees, Ox-bow lakes or abandoned river channels. The ribbon pattern resulting from the attractive force of the street are called "Street village" in England and Germany. Such patterns are quite uncommon in India, reasons the roads are younger then the villages they pass by and are later super positions on the rural landscape.

14.3.2 Rectangular Pattern

There are rectangular or square pattern of rural settlements which enjoy the universal importance. In India our ancient villages were mostly planned on rectangular or square patterns. When the cultivated plots and groves, etc all confirm to rectangular or square pattern the settlement follow their character. With in the broad rectangular or square forms a number of subsidiary patterns may be distinguished, example hollow rectangle, L shaped or T shaped plans in different parts of the world.

14.3.3 Star like Pattern

It is associated with nodal location of settlement where several roads converage at a site and the row of houses spread along the roads in all direction. Such patterns of rural settlements are found in Western Europe, Yangtze valley in China and India Gangetic plain in Punjab, Hariyana and Upper Ganga Yamuna doab.

14.3.4 Circular pattern

Such patterns are the remnants of the ancient walled villages. The circular pattern is a thing of the past when it developed as a result of agglomeration of dwellings around that of a land lord or chief of whom the village looked for protection. Some time a semi circular plan may develop a crescent shape of horse- shoe shape along a meander or a bend of stream or an ox bow lakes.

14.3.5 Amorphous Pattern

When the valley land dotted with several hamlets and individual from stead, all being linked by foot paths with the main hamlet; such a loose pattern many are termed as amorphous or nebular. Spate used this word for the rural settlements of west Bengal and Bangladesh.

14.4 SIZE AND SPACING OF RURAL SETTLEMENTS

The variation in size and spacing of rural settlement is a physically established fact due to variation in environmental conditions. According to Mukherjee "The co variation of spacing of rural settlements depends on such fundamental factors as fertility of land, productivity of agriculture, nature of crops grown, agronomic characteristics, availability of water, density of population, mode of living and several other factors.

The formula for determining the spacing of rural settlement is based on their density in rural areas. Walenty Wineed derived a formula to determine the frequency of towns in any area. He assumes that the best figure to use for inter-settlement distance is equal to the square root of the area derived by the number of settlements with that area.

$D = \bar{v} A/N$ Where D is the average distance between the settlements, A is the total area and N is the number of settlements with in that area.

The method applied for size of the rural settlements is as follows.

$S=P/N$ Where S is the average size of population per village, P is the rural population of the anchal and N is the number of villages in the anchal.

In India the size and spacing of rural settlements are mainly dependent upon three factors

a) Effects of floods,

b) Natural fertility of soil, and

c) Surface configurations.

14.4.1 The Nearest Neighbor Analysis

Nearest Neighbor is generally measured as crow flies distance in between originally devised by Clark and Evance (1954) who were plant pathologist. The measure provides a departure from observed spatial distributions to a theoretical random distribution between agglomerated and uniform patterns. This scalar distribution is known as R scale of nearest neighbor scale. And its value can be calculated from the formula

Rn= $\bar{r}$A/$\bar{r}$E where $\bar{r}$A=?r/N

Where 'r' is the distance from each point to its nearest neighbor which is the actual straight line distance and estimated mean distance

$\bar{r}$E=1/2 $\sqrt{\bar{}}$ N/A Where, N is the number of rural settlements and A is the area.

If the R value is Zero, then it is clustered, 1 is random and 2.15 is approaching uniform.

14.5 THE CENTRAL PLACE HIERARCHY

14.5.1 Christaller's Central place Theory

The **Central Place Theory** applies to settlement geography in the sense of explaining the relative size and spacing of settlements. Walter Christaller, the German geographer who developed this model based on rural Germany in the late 1920s, built his theory on four key assumptions:

(1) Firstly, he theorized that people living in a small settlement, such as a hamlet, would obtain many of the goods required for everyday life in the hamlet itself, but occasionally they would have to travel further afield - say, to a nearby village - in order to obtain something more specialized, or goods that were not available in their village. Similarly, people living in villages would have far greater access to more services and goods, and would only need to travel to a nearby market town very occasionally in order to obtain something very specialized. In other words, all settlements act as a central place to greater or lesser degrees.

(2) His second premise was that all of these 'central places' (hamlets, villages, etc) vary in the range and quality of goods and services they offer, and that it is these variations that force a certain hierarchy among the settlements.

(3) Thirdly, Christaller theorized that if a certain measure of land that had no variation in terms of climate, vegetation or population (an area which he called an isotropic plain), the ideal spatial organization of settlements would evolve as follows:

4) Christaller, however, also had to incorporate human behavior into his theory, as human nature dictates where, why and how settlements accumulate and develop. To this end, he assumed that people are likely to make rational decisions when obtaining goods or services (implying that they are likely to choose the nearest location offering goods, and not travel far for no good reason).

In addition, the threshold is an important concept in Christaller's study. This is the minimum number of people needed for a central place business or activity to remain active and prosperous.

This then brings in the idea of low-order and high-order goods. Low-order goods are things that are replenished frequently such as food and other routine household items. Because these items are purchased regularly, small businesses in small towns can survive because people will buy frequently at the closer locations instead of going into the city.

High-order goods though are specialized items such as automobiles, furniture, fine jewelry, and household appliances that are bought less often. Because they require a large threshold and people do not purchase them regularly, many businesses selling these items cannot survive in areas where the population is small. Therefore, they often locate in large cities that can serve a large population in the surrounding hinterland.

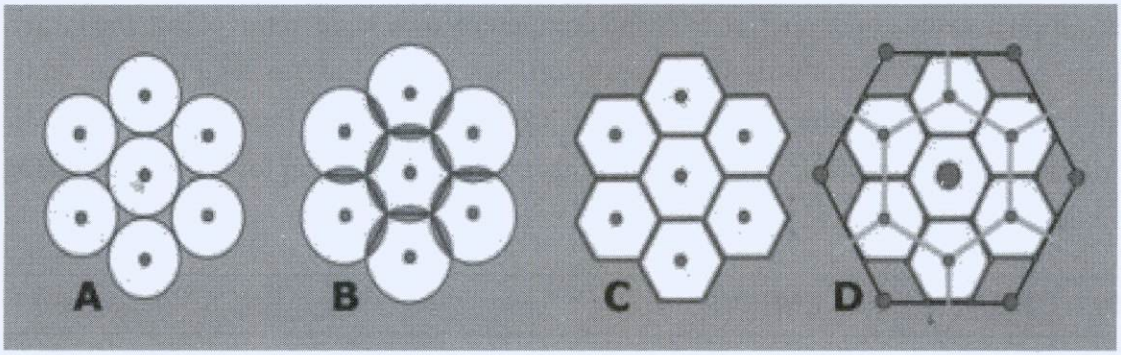
14.5.2 Central Place Theory Geometry and Ordering

If visually imagined, the central place is located at the vertexes (points) of equilateral triangles. They then serve the evenly distributed consumers who are closest to the central place. As the vertexes connect, they form a series of hexagons- the traditional shape in many central place models.

This shape is ideal because it allows the triangles formed by the central place vertexes to connect and it represents the assumption that consumers will visit the closest place offering the good.

In addition, the central place theory has three orders or principles. The first is the marketing principle and it is shown as K=3 (K is a constant). In this system, market areas at a certain level of the central place hierarchy are three times bigger than the next lowest one. The different levels then follow a progression of threes, meaning that as one moves through the order of places, the number of the next level goes up three times. For example, when there are two cities, there would be six towns, 18 villages, and 54 hamlets.

There is also the transportation principle (K=4) where areas in the central place hierarchy are four times bigger than the area in the next lowest order. Finally, the administrative principle (K=7) is the last system and here, the variation between the lowest orders and highest orders increase by a factor of seven. Here, the highest order trade area completely covers that of the lowest order, meaning that market serves a larger area.



The diagram above illustrates Christaller's Central Place Theory's idealized distribution of settlements. In A, small central places (hamlets, for example) offer their services to a sphere of influence, or potential market area. Although the business owner is satisfied with a unique market area to call his own, business expansion dictates that his market area is enlarged so that more people can be served. In B, each business owner's market area has been expanded, but now overlaps with that of his competitor. Since this is not an ideal business position to be in, a compromise is reached between neighboring business owners. The resulting structure is the honeycomb as seen in C. Further development results in D, where a network of low-, middle- and high-order service areas is demarcated. The lowest order is the original blue honeycomb structure, with small central places at its intersections; the middle order is represented by the orange hexagonal system, and the highest order is represented by the black hexagon on the outside. Note the increase in size of central places and their relationship with one another.

14.5.3 Losch's Central Place Theory

In 1954, German economist August Losch modified Christaller's central place theory because he believed it was too rigid. He thought that Christaller's model led to patterns where the distribution of goods and the accumulation of profits were based entirely on location. He instead focused on maximizing consumer welfare and creating an ideal consumer landscape where the need to travel for any good was minimized and profits were held level, not maximized to accrue extra.

14.5.4 Central Place Theory Today

Though Losch's central place theory looks at the ideal environment for the consumer, both his and Christaller's ideas are essential to studying the location of retail in urban areas today. Often, small hamlets in rural areas do act as the central place for various small settlements

because they are where people travel to buy their everyday goods. However, when they need to buy higher value goods such as cars and computers, they have to travel into the larger town or city - which serves not only their small settlement but those around them as well. This model is shown all over the world, from rural areas of England to the United States' Midwest or Alaska with the many small communities that are served by larger towns, cities, and regional capitals.

14.6 URBAN SETTLEMENTS

16.6.1 The origin of towns

Urban generally means relating to cities and towns. Towns are of many different sizes, ranging from small country towns, sometimes smaller than village, to cities with several million inhabitants. What distinguishes towns from rural settlements is not their size but the economic activities of their inhabitants. Therefore the definition of urban settlement is however a difficult one. Most of the countries define their urban settlements on the basis of size of population. The size may vary from country to country.

14.6.2 Classification of Towns

The definition of urban center is highly variable from country to country. In order to make the international data comparable, the United Nations (1958) suggested that the data on urban population should also be presented according to a standardized scale. In accordance with this recommendation of the U.N.O the census of India also classifies the urban places in to the following six categories

Class I, those having a population of 100,000 or more

Class II, those having a population between 50,000 and 99,999

Class III, those having a population between 20,000 and 49,999

Class IV, those having a population between 10,000 and 19,999

Class V, those having a population between 5,000 and 9,999 and

Class VI, those having a population below 5,000

14.7 FUNCTIONAL CLASSIFICATION OF TOWNS

Towns can be classified on the basis of their functions. They are

a) Central place functions (performed for a continuous are)

b) Transport functions (performed along lines of communications)

c) Special functions (Trade, mining administration, culture)

John W. Alexander has distinguished between basic and non basic functions of towns: Basic functions are those providing goods and services for export out of the urban area while non basic functions are those whose resultant goods and services are consumed with in the city.

M. Aurooussean has made an attempt to classify towns in to six categories.

14.7.1 Administrative towns:

Administration is the most important function of towns. In this category capital city occupies the first rank, but there is a hierarchical order running from natural capital to state capital, district headquarters, sub divisional and block headquarters. Example of state capitals like Lucknow , Jaipur and Patna

14.7.2 Defense Towns :

Defense has been an important function of towns in the past as well as the present. Many towns grew around forts like Calicut and Kalinagar.The main purpose is to provide necessary security and protect the integrity and sovereignty of the county. They include fort towns, garrison towns, air base, naval base, and cantonments Example Allahabad, Lucknow, Delhi, Channai, Kolcutta..

14.7.3 Cultural centers:

The cultural towns were often religious places and pilgrimage centers like Mecca, Madena Roam, Jerusalem, Hardwar, and Rameshwar.

14.7.4 Production centers:

Industry has acted as a centrifugal force for the economic growth of towns. The type and scales of industries determine their size and urban centers. Ex. Jamshedpur, Kanpur, Ahmadabad.

14.7.5 Communication centers:

Transport has always played an important role in the origin and growth of towns. There are three types of transport centers like Collection centers, Transfer centers, and distribution centers.

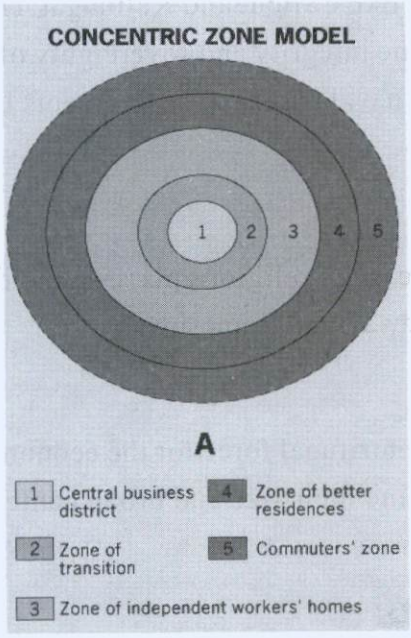
14.7.6 Recreation centers:

Recreation centers fulfill the leisure needs of the people and stimulate their mental and physical health. They also promote tourism. They include health resorts, tourist centers, holiday resorts and hill stations. Ex. Mumbai, Ahmadabad, Bangalore, Chandigarh

14.8 URBAN MORPHOLOGY

Urban morphology includes both structure and form of the built up area of the city. The urban landscape of a town evolves through the process of histogenesis, pattern formation and morphogenesis. Morphogenesis is the stage when the morphological character of the city is closely associated with the functional character. The centripetal force works in response to the intra urban migration due to overcrowding in the heart of the city. The attraction of a site acts as both centripetal and centripetal force. The urban morphology is the product of several processes and factors like the site and situation.

14.9 MODELS OF CITY STRUCTURES

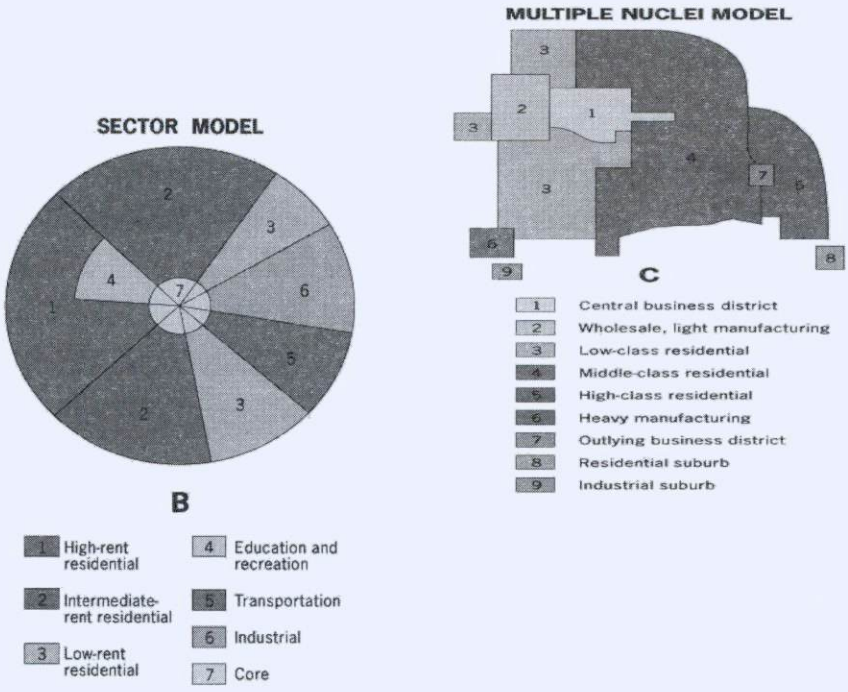


Cities are not simply random collections of buildings and people. They exhibit functional structure: they are spatially organized to perform their functions as places of commerce, production, education, and much more. One of the most important forces determining where certain buildings or activities are located within a city deals with the price of land. This tends

to be the highest in the downtown area and declines as one move outwards from the center. The United States is the only country in the world in which the majority of the people live in the suburbs. In every other country the majority resides in either rural or urban areas. Before proceeding, it is important to define some commonly used terms in referring to city structure. The **central business district (CBD)** (or "downtown") is the core of the city. High land values, tall buildings, busy traffic, converging highways, and mass transit systems mark the American or European CBD. An **urban zone** is a sector of a city within which land use is relatively uniform The term **central city** is often used to denote the part of an urban area that lies within the outer ring of residential suburbs. A suburb is an outlying, functionally uniform part of an urban area, often (but not always) adjacent to the central city. All of these urban regions or zones lie near or adjacent to each other and together make up the **metropolis**. The term **hinterland** is a German word meaning the "land behind" the city (the surrounding service area).

14.9.1 The concentric zone model

As cities evolved, they displayed increasing complexity over time. The **concentric zone model** (A) resulted from a study of Chicago in the 1920s by Ernest Burgess. This model was drawn up at a time when the full impact of the Industrial Revolution came to bear on the American City. Burgess recognized five concentric functional zones. At the center was the CBD (1). The zone of transition (2) was characterized by residential deterioration and encroachment by business and light manufacturing. The zone of independent workers' homes (3) was primarily occupied by the **bluecollar** (wage-earners, manual laborers) labor force. The zone of better residences (4) consisted mainly of the middle-class. Finally, the commuters' zone (5) was the suburban ring, consisting mostly of **white-collar** workers who could afford to live further from the CBD. This model was dynamic. As the city grew, the inner zones encroached on the outer ones. Remember, the model was developed for American cities and had limited applicability elsewhere. It has been demonstrated that pre-industrial cities, notably in Europe, did not at all followed the concentric circles model. For instance, in most pre-industrial European cities, the center was much more important than the periphery, notably in terms of social status. The Burgess concentric model is consequently partially inverted in these instances.



14.9.2 Hoyt's sector model

In the late 1930s, Homer Hoyt's **sector model** (B) was published, partly as an answer to the drawbacks of Burgess' concentric zone model. As technology dealing with transportation and communication was improving, growth alone created more of a pie-shaped urban structure. Hoyt discovered that land rent (for residential, commercial, or industrial) could remain consistent all the way from the CBD to the city's outer edge.

14.9.3 Multiple nuclei model

In the 1940s, Chauncy Harris and Edward Ullman, arguing that neither of the earlier models adequately reflected city structure, proposed the **multiple nuclei model** (C). This model was based on the notion the CBD was losing its dominant position and primacy as the nucleus of the urban area. Several of the urban regions would have their own subsidiary but competing "nuclei." As manufacturing cities became modern cities and modern cities became increasingly complex, these models became less and less accurate.

14.10. LET US SUM UP

Geographers consider rural settlement as manmade habitat on the rural landscape based on primary occupation. The size, spacing, form and functions of rural settlement and their origin and distribution are essentials of the subject. There are some common concepts in settlement geography which have linked the rural and urban settlements together in a single unifying bond. The separation of rural from urban studies may be permissible, but it should not stand as a barrier between the two. Rural settlement geography as a branch of human geography includes a large number of topics such as house types, patterns, morphology, functions, spatial distribution and rural urban relationship. These must all be examined thoroughly in order to understand the vast and distinct subject.

14.11 KEY WORDS

Human settlements- rural and urban settlements- functional Classification of towns- size and spacing of settlements- models of city structures-

14.12 QUESTIONS FOR SELF STUDY

1. Distinguish between urban and rural settlements
2. Explain the different type of rural settlements.
3. Discuss the patterns of rural settlements with examples
4. Explain the main factors that govern the size and spacing of rural settlements.
5. Discuss the assumptions, key concepts, and principles of Christaller's theory?
6. Explain the origin and classification of towns.
7. Discuss the functional classification of towns by J.W Alexander
8. Critically examine the models of city structure and explain the multiple nuclei theory of Harris and Ullman

14.13 FURTHER READING

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UNIT - 15 : SOCIAL PROCESS IN CITY

Structure

15.0 OBJECTIVES

After studying this unit, you will be able to

- Analyse the social processes and structure of urban society.
- Make out thesocio-economic structures, which differ, from other forms of settlements.
- Recognize the differs in relation to their socio-economic situations.

15.1 INTRODUCTION

In any human community changes are common and also continuous. The changes are normally related to social, cultural, economic and political dimensions. Change in any one of these will have its effects on other dimensions of the society also. **The social processes as a noun involves in the formation of groups of persons. It is a process in which human beings are grouped. As the cities goes on expanding, the people of the city groups in one or the other forms.** This kind of formation of social groups among the urban population is known as urban social process. Urban centres are unique in their characteristics and each city has its own social processes which gives it a typical social patterns.

15.2 EVOLUTION OF URBAN FUNCTIONS AND CHANGES – A RETROSPECT

The human populations of some areas of the world, in significantly large number started accumulating during the ancient period. Initial settlements were tiny hamlets were grown into villages through the increase of its natives and sometimes grew large attracting increasing number of people when they were built in most convenient locations. These were ideal to carry out various functions. Thus in course of time they grew large and became towns as early as late Neolithic. Once a village became town, once the towns have emerged the accumulation of people and all kinds of activities in unordered arrangement began to create problems of different kinds. Solutions to problems were gradually sought by changing some arrangements in the structure of the settlements. As towns became more numerous and grew larger the problems were also multiplied. The problems of these towns finally produced some planning and order in the urban structure.

The cities irrespective of where they were in the historical past were usually founded by a ruler and has combined the elements of religious and political leadership. The city was a formalized settlement, symbolic of the power of the ruler and of the existence of the state and of the society of which it was the capital.

The newly founded city took certain elements of form and shape in pursuit of certain objectives and to form lines of access throughout the city. The rulers palace, the chief temple, important civic buildings and a wall/fort with formal gates and defensive works were first established. In the first cities certain economic activities were located outside the city and in the later phase some functions were arranged inside the city itself. As the cities were expanded through planning several aspects of urban life were arranged such as residential quarters for particular classes, the cities acquired the character of zoning and also segmentation each one for a particular group usually based on their occupation or caste. In case of a city took over by another ruler, the new administrator made some arrangements in the layout of its political and religious structure and institutions to facilitate his administration of the city.

The present cities have the legacy of the past. Once the cities were established and grew larger in population there were innumerable problems and called for rearrangement of the streets, buildings, layouts. The cities expanded and extended beyond the forts and walls. Different cultural systems were involved in the cities. The cities continues to be the creative and dynamic symbol of the living system to which rural and the surrounding people are attracted as expressing the preferred way of life within their culture realms. Thus the cities even today are the centres of respective cultures where they are. Most of the people seek its values while disliking many problems of the cities. The cities by larger number of people also known for better life. However the large cities of the world are so large and complex, so varied and have lot of problems. Such cities are described as too big, too crowded, too full of immigrants, too noisy, too smelly too commercialized, too heartless, too impersonal, too wild, too uncontrolled etc. Thus the modern cities have become highly complex overwhelmed by their large size and population.

15.3 MODELS OF URBAN STRUCTURE – A REVIEW

However the social scientists observe the large number of people in the urban centres are not distributed randomly both in the old cities or the cities built in the recent past. The people tend to concentrate in different neighbourhoods depending on their social characteristics. Each one of the broad social group of the urban society occupying a particular piece of land or located in particular part of the society, the urban society presents a well ordered social system. Each one of these social segments are depended on all other segments. Thus social order is well established through a long process which is associated with the history of the city itself. There are three well known models which explains the spatial distribution of different social groups within an urban area. These are the concentric zone, sector and multiple nuclei models.

a, The concentric zone model

It is the first model to explain the distribution of social groups within urban areas. It was proposed by a sociologist E.W. Burgess in 1923. He had poposed this theory after the study of Chicago city. According to him, the city grows outwards expanding from a central area. The expansion takes place in the form of concentric zones. The precise size and width of the rings varies from one city to another. However, the outgrowth is commonly in the form of concentric zones. Burgess stated that there will be five concentric zones in the city each zone with unique features.. These are:

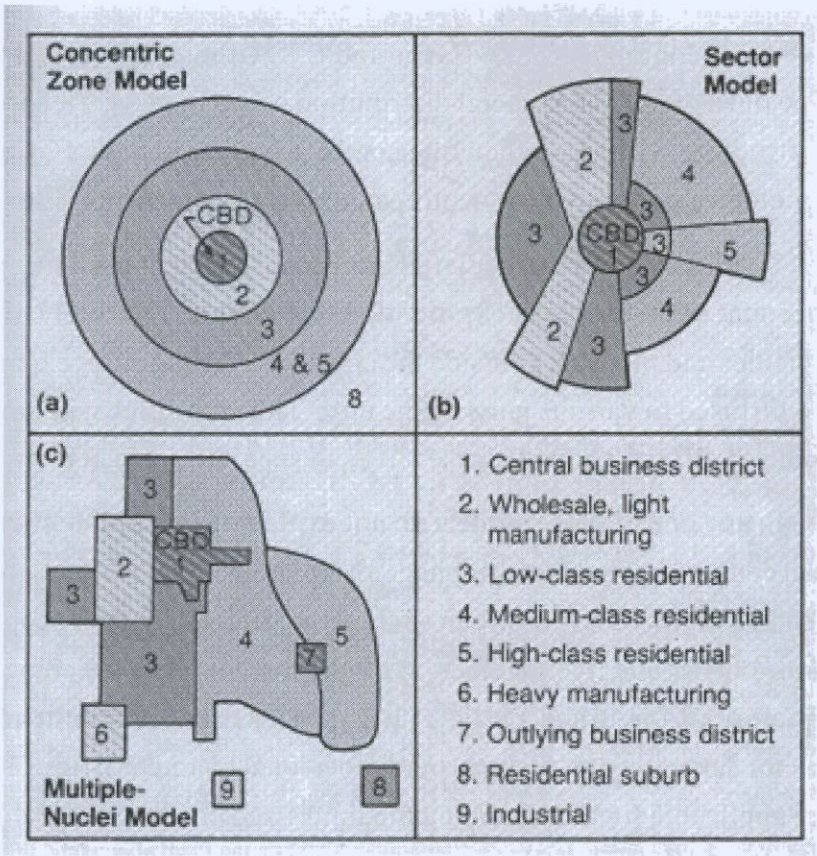
i. **Central Business district (CBD):** It is the central part of the city known for business. It is also the focus of transport to which people visits to purchase their daily requirements. It is also called 'downtown'. As the area is known for non-residential, its activity closes in the night and get depopulated. So it is also called central blight.

ii. **Zone of transition:** The CBD is surrounded by the zone in transition. As the CBD expands, the nearest area bear its pressure and gets gradually changed. Thus this area has the features of demolishing of old and construction of new buildings. It is the zone where most of the slums are located and the labour class people who works in the CBD live here as they are not afford to commute every day into the working area. Immigrants to the city first live in this zone in small units, which are formed by dividing the earlier buildings. This zone also accommodate rooming houses for individuals. As the accommodation is cheap with minimum facilities immigrants prefers this area first.

iii. **Zone of low class housing:** It is the third zone of the city next to transition. It is the zone of lower working class. Most of the people of this zone work in factories and offices. These are forced to live in their old houses as they are comparatively low income group and they are not afford to travel or commute to offices from long distances. These are most common in all the cities.

iv. **Middle or Medium class housing:** It is the zone of middle class housing. These are either independent or semi-detached houses occupied by the people of sufficient income and have sufficient accommodation and facilities. Newly built houses are common here.

v. **High class or commuters zone**: It is the zone of high income group. It is away from the slums as well as industries. As the residents of this zone have their own vehicles commutes to their working place in the city every day. The houses are quite large with all amenities.



The concentric zone theory states that when the city expands the people goes on moving from one zone to another in relation to their income and social status. Thus the rich class finally reach the outskirts with luxuries and the poor people are left with zone 2 or zone 3. The middle class people tends to live in zone 3 and zone 4. Thus social process takes place continuously in the urban areas.

b. The Sector model:

A second theory of urban structure as well as social process was developed by a land economist Homer Hoyt in 1939. It was also based on Chicago study. According to Hoyt the city develops in the form of series of sectors or divisions rather in the form of rings. Different activities expands from the city centre in the form of wedges or sectors. As such there will be high class housing zone, middle class housing sector, low class housing zone, an industrial zone and at the centre there will be CBD with tall buildings. Thus the best housing will be in a sector beginning from the CBD top to the edge of the city. He had showed that highest social class move outward and live in the edge in large bungalows with high rise compound.

c. The Multiple nuclei model

In 1948 two geographers C.D. Harris and E.L. Ullman developed the multiple nuclei model. It is the third of the major social distribution urban models. According to this the city is a complex structure with more than one centre around which activities revolves. These nodes could include a port, business centre, an university, an airport etc.

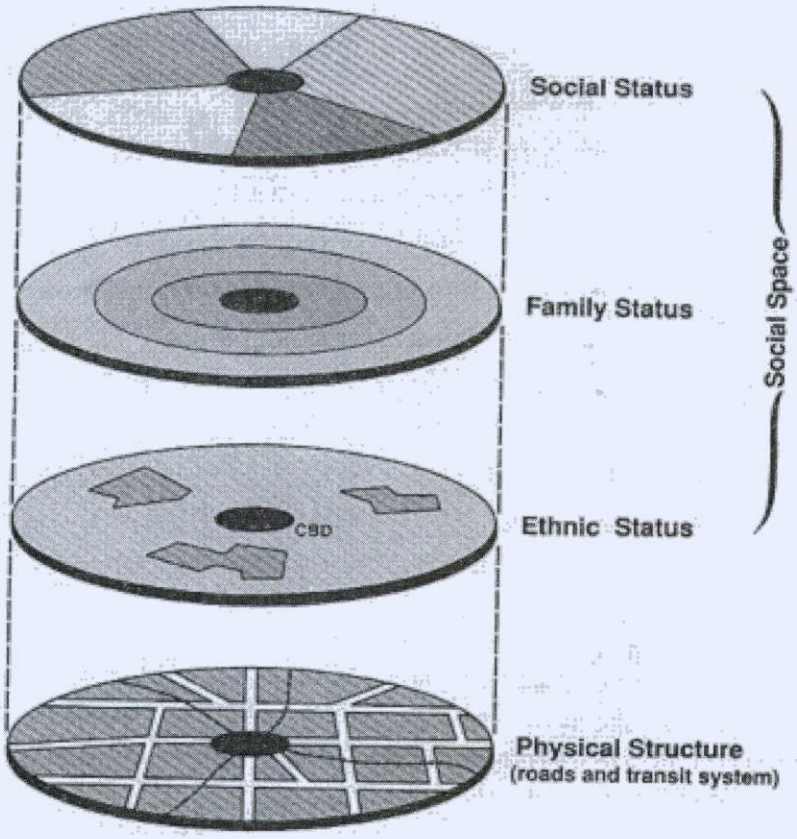
Some activities cluster at particular points because of their need for specialized facilities and also an account of historical background. For example, relatively highly educated live near the universities and industries outside the cities, etc. As the cities expands the commercial activities also diffused to various parts of the city. Thus the cities will have multiple centres and even people of different social classes lives in separate areas at many locations.

Although any one of these models do not explain the complete social processes of the complex urban centres, but help geographers to explain where different groups of people live in a city. Even in a multi-religious urban society like India, UK etc., people of same religion forms a separate cluster and live together. If all the three models are combined together, they get a better picture of the urban society. It is because that people tend to live in certain locations in a city depending on their particular personal characteristics. The concentric zone model is more applicable for an expanding medium sized cities whereas the other two models are suitable for large cities.

15.4 SOCIAL AREAS OF THE CITIES

Although too simplistic, these classical urban models provides an insight into the complex urban society. Social segregation is one of the common feature of cities. The larger and more economically and socially complex cities have strong tendencies for their residents to segregate themselves into groups. The most important factors behind the social segregation are the social status, family status and ethnicity. In a large city with its diversified population, this territorial behavour may be a defence against the unknown or the unwanted, a desire to be among similar or known people, a response to income constraints or a result of social and institutional barriers.

Most people feel more secure when they are near those with whom they can easily identify. In the traditional societies these groups are families, class or tribes. In modern urban society people group according to income, occupation, social status, language, ethnicity and so on. Many of these groupings are fostered by the size and the value of the available housing. Even the land developers make use of the behaviour of the people and plan the houses suitable for different social groups.



Urban Social Processes

a. **Social Status:** The social status of an individual or a family is largely determined by income, education, occupation, etc. In Indian society even caste is also considered. The factors of

b. social status varies from one society to another. Large houses with good number of rooms indicate high status. There are many levels of status and people tend to filter out into neighborhoods where most of them are of similar ranks. People with similar social status are grouped in separate clusters even when they are moved away from the original points of the city.

b. **Family Status:** Even the family status also play an important role in the urban social process. Usually average age of the head of family decreases away from the city centre. Older people are more in the older part of the city and the new generation seeks housing in the outskirts.

c. **Ethnicity:** In the urban social process ethnicity also an important factor. It is sometimes more important than even social status and family status. There are large homogeneous urban areas of ethnic identification. It means some of the areas are identified with people of particular ethnic origin. In the western cities blacks and Asians live in particular areas in large number which almost appear like replica of Asian or African culture. Even in India some areas are dominated by the residents of some religion or castes. Every city in the USA have one or more areas of black people with their own social status, income and housing etc. Even the housing rent, land value are also influenced by the people who reside in particular areas.

Institutional Controls : The urban social processes are also influenced by institutional controls. Land use arrangements and growth patterns of cities world over are regulated by the authorities. Layouts are either formed or allowed to be formed by the private sectors through laws. Land use also influences social processes. An industrial zone normally is surrounded by labourers of lower income. In the recent years large hotels, corporate offices, professional services, sports complexes, recreational centres are getting established at the outskirts of the city. Sometimes these are called 'edge cities' dominated and owned by the "rich class of the society". Through institutional planning suburbs were formed in every city. These have caused redistribution of population not only spatially but also socially. Younger, wealthier and better educated leave the central city to settle in the suburbs. The poor, older, least advantaged urbanites are left out in the city centre. Comparatively women population is more in the inner cities where they live near their working places.

15.5 LET US SUM UP

Though large complex urban societies appears haphazard, there is a tendency of social processes which makes the segregation and groupings based on various factors. Each city is unique with its own social processes but there are certain common features which can be identified easily. The present urban social processs of a city have also its roots in the historical past during which the city was evolved. There are three models of urban social processes namely, the concentric zone, sector and multiple nuclei models which explains the broad features of urban social process. Further the social areas of the city is largely influenced by four important factors such as social status, family status, ethnicity and institutional controls. Thus the cities are the unique social units influenced by several factors. The social processes are the continuum in evolving social order in the urban areas.

15.6 KEY WORDS

Social process, social groups, urban model, concentric zone model, sector model, multiple nuclei model, CBD, down towns, central blight, zone of transition, low class housing, middle class housing, commuters zone, social areas, social status, family status, ethnicity.

15.7 QUESTIONS FOR SELF STUDY

1. Define urban social processes. How there are associated in the history of urban evolution?
2. Give an account of the urban models.
3. What are the social areas of the cities? Explain the factors associated with the social areas

15.8 FURTHER READING

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UNIT - 16 : CITIES IN DEVELOPING COUNTRIES

Structure

16.0 OBJECTIVES

After the studying of this unit you will be able to

- Identify the various factors for the growth of cities in developing Categories
- Discuss the environmental impact of urbanization in cities
- Classify the mitigate the environmental problems

16.1 INTRODUCTION

Cities have been the driving force in economic and social development. Urbanization is associated with higher incomes, improved health, higher literacy, improved quality of life and other benefits. These benefits, however, are accompanied by environmental and social conditions. These include a diversity of problems ranging from lack of access to clean drinking water to urban air pollution and greenhouse gas emissions. The primary cause for these problems is a rapidly growing population and the fact that governments are unable to provide even the basic needs to their citizens.

The South Asian region as a whole is experiencing rapid urban growth, but is still predominantly rural. The urban growth rate remained high throughout the 1970- 90 periods. During the 1980s, urban population in the developing countries of the region grew at the rate of 3.0 to 6.5 per cent per annum, which was the second fastest urban growth rate in the world. Currently, 28.33 per cent of the South Asian population lives in urban areas. The annual growth rate is estimated around 3 per cent in a span of five years. In addition to economic activity, major demographic forces determine urban growth. Some of the chief forces driving urbanization today are the shifting of jobs from agriculture to industry and the concentration of economic opportunities in urban areas. In the earlier upsurges of industrialization, rapid urban growth was largely fuelled by rural-urban migration. Migration from rural to urban areas has contributed around 40 per cent of urban population growth during 1970-90 in most developing countries in the region. Another contributor to urban growth is the reclassification of city boundaries, which can result in dramatic changes in sizes of urban centers.

16.2 MIGRATION

Migration from rural to urban areas is one of the important factors leading to the growth of cities. In the South Asian region, around 40 per cent of the urban population growth has

been construed to be the result of migration during 1970-1990. In India, rural/urban change is evidenced in the increasing proportion of urban population: between 1941 and 1971; the proportion almost doubled. In 1971, 20.22 per cent of India's population lived in urban areas. During 1971- 81, the urban population grew by 46 per cent while the rural population registered a growth by only 19 per cent. Figures on rural-to-urban migration are difficult to pin down, but it is believed to account for 40 to 60 per cent of the annual urban population growth in the developing world.

16.2.1. Temporary Migration

The most significant migration in the region involves temporary workers. The six countries of the Gulf are important host countries for temporary migrants and provide employment for millions of foreign workers. A majority of these workers come from South Asia. Nearly one million workers from South Asia – mostly from Bangladesh, India, Pakistan and Sri Lanka - immigrate each year to the Middle East. Despite the employment of temporary labour migrants, Gulf countries do not encourage nor accept permanent immigrants. Although Bangladesh, India, Pakistan and Sri Lanka have a high participation in temporary labour migration, permanent settlement abroad is common only among Indians and Pakistanis. Migration is also encouraged by conflicts, whether internal or external. South Asia has the fourth largest concentration of refugees in the world. A majority of displaced persons who have crossed international borders in this region are not regarded as 'refugees' by the host governments. They are usually treated as 'undesirable aliens' or 'illegal immigrants'. In Sri Lanka alone, more than a million people have been rendered homeless within their own country by the 12-year-old ethnic conflict. In India, nearly 2,50,000 Kashmiri Hindus and Muslims have become internally displaced.

16.3 EMPLOYMENT OPPORTUNITIES

Unemployment is a pressing concern in most cities in the South Asian countries because the formal economies are unable to absorb the enormous influx of workers. Given the urbanization rates, these cities are now experiencing intense demands for jobs. As a result, a substantial number of the developing world's urban poor makes its living through subsistence activities or informal jobs - namely, production and exchange outside the formal market. These jobs run the gamut from providing services such as garbage collection and domestic help, to providing goods such as food and building materials in small stores, to small-scale clothing manufacturing.

16.4 URBAN POVERTY

Several factors, including structural adjustment programmes, economic crisis and massive rural-to urban migration, have contributed to an increasing number of urban poor since the 1980s. Available poverty figures are likely to underestimate the extent of urban poverty because global data is scarce. The issue is complicated by the fact that definitions of poverty differ from country to country. In some countries, the poverty line is set at the same level for both urban and rural areas, not taking into account the higher costs of living in cities. Poverty can neither be adequately described as just a lack of economic resources, nor as a lack of access to basic needs. Poverty also involves relative deprivation or inequality in access to income and material goods and services - and in most countries, income inequalities are wider in the city than in the countryside.

16.4.1 Environmental Implications of Urban Poverty

The urban poverty has implications for the urban environment and its quality of life. For one, the urban poor bear the greatest burden of urban environmental risks because of the situations which they are forced to live in – in the sprawling squatter settlements of the cities in the developing world.

16.4.2 Slums and squatter settlements

A large number of rural migrants are unwelcome additions to an already inflated urban unemployment situation. These migrants are forced to settle in slums and squatter settlements characterized by high population densities, poor quality of housing, lack of water supply, sanitation and waste disposal facilities, which can lead to spread of communicable diseases. Regardless of country, the fundamental issue for the urban poor is access to land. Land occupied by urban poor is often unsuited for settlement; much of that land is often illegally occupied, and therefore characterized by insecurity of tenure. Fearing that provision of infrastructure and public services will be taken as de-facto legitimization, governments usually decline to serve these sections. Illegality is closely linked to government unwillingness to recognize community based organizations seeking to secure basic infrastructure and services.

16.5 STRESSED INFRASTRUCTURE AND MANAGEMENT SYSTEMS

Urban areas affect the environment in three major ways: through the conversion of land to urban use, the extraction and depletion of natural resources, and the disposal of urban waste. The impacts of this pollution are experienced both locally and at great distances from the source. For instance, domestic and industrial discharges contaminate air, land and water

much beyond the immediate vicinity. The increased levels of consumption characteristics of the population of urban areas lead to generation of copious quantities of waste. These problems warrant major concerns on three accounts: firstly, the prevailing pattern and trend of urbanization is even more material- and energy intensive. Secondly, the discharge of pollutants in cities is particularly harmful because they are concentrated, and thirdly, the financial, institutional, technological and infrastructure systems available to help control these problems in the region at present seem to be inadequate.

16.5.1 Urban Waste

Increasing population, urbanization, industrialization and rising and changing consumption patterns are resulting in the generation of increasing amounts of solid waste across the entire region. By the year 2020, an additional 1.5 billion people will be added to Asia's population, and with the rapidly swelling urban population the requirement for infrastructure and services too would increase manifold. Solid waste collection and disposal is one such service which needs to be adequately provided to ensure an urban environment conducive for living.

16.5.2 Solid waste

Solid waste in urban settings is municipal and industrial solid waste. Although Asian cities have a lower rate of waste generation than cities in the West, their quantum of waste is high owing to their higher levels of population density and low technology. The tropical Asian climates, with a high degree of rainfall and humidity, aggravate the problem of solid waste disposal, especially as the common waste disposal method is open dumping. As countries become richer and more urbanized, their waste composition also changes. The substantial increase in the use of paper and packaging is probably the most obvious change. The next most significant change is the higher proportion of plastics, multilateral items and consumer products and their related packaging material in the solid waste.

Improper collection and disposal of solid waste: The collection of refuse presents peculiar problems, as household wastes are thrown out indiscriminately. Unskilled labour is used to clean the streets and collect the garbage. It is estimated that 20-50 per cent of the solid waste generated remains uncollected, even though up to half of the local operational expenditures often goes towards waste collection. In low-income or squatter settlements, garbage collection is often nonexistent, as these settlements fall outside "official" service areas, or trucks are unable to manoeuvre along their narrow unpaved streets. Even if collected, municipal solid waste disposal remains a problem in many cities. Municipal solid waste sites often handle

both domestic and industrial waste, including hazardous wastes, without proper disposal processes, toxic chemicals from the wastes leach into water supplies. With rise in living standards, the amount of organic content in the waste declines, and that of nonbiodegradable wastes such as metal, plastic and glass increases. The Indian urban population is expected to produce far more waste per capita than its rural population. The difference between the rural and urban population waste generation rates also exists in Bangladesh, where the rural population generates only 0.15 kg per capita per day, while its urban counterpart generates 0.4-0.5 kg per capita per day (*World Bank 1998*). In fact, South Asian cities are drowning in their own waste. In New Delhi, India, 3,880 tones of garbage is produced each day, yet only 2,420 tonnes is collected for disposal. Dhaka in Bangladesh manages to collect 50 per cent of the waste produced by its city. It has been estimated that the total amount of land required per year for the disposal of this waste would be 95 hectares (234.65 acres). Kathmandu, Nepal, faces similar challenges.

While there is considerable variation in the collection of waste and its transport in South Asia, there are some common issues. The most important of these is the irregularity or lack of municipal service for squatter settlements or congested low-income areas. Collection rates vary from 20-90 per cent of the total municipal wastes. The frequency of scheduled collection is partly governed by climate, and by the system in use. In the Indian subcontinent, temperatures are high and the system is often 'open' (i.e., the street containers and transfer points are not covered and the waste is exposed). Irregular and inadequate collection is usually a function of the legal and economic status of the neighborhood. Many illegal settlements are not entitled to waste services. A contributing factor is that municipal collection crews have less incentive to pick up garbage from poor neighborhoods as the wastes contain fewer recyclables that the collectors can sell. Recyclables are extensively traded - even internationally - particularly in the subcontinent. For instance, almost all the recyclables of Nepal are exported to India, this trade being controlled by Indians. Surplus materials from Kolkata, India are exported to Bangladesh. The most lucrative cross-border trade is that from Afghanistan to Pakistan (*www.makingcitieswork org/*).

16.5.3 Hospital waste:

Wastes from hospitals may be either biodegradable or non-biodegradable. These may be paper, glass, tin cans, injection needles, human waste, blood, body fluids, etc. The biodegradable wastes can be disposed off easily, but chemical wastes such as corrosive acids can be inflammable and hazardous. A few hospitals are adopting waste management techniques such as segregation and incineration. However, there is still a problem in handling wastes in this sector.

16.5.4 Industrial waste

The process of industrialization has contributed to the accumulation of toxic chemicals at an alarming rate. These toxic materials can cause acute illness or death. The sedimentation of toxic substances in air, water and soil pollute the entire ecosystem. Many industrialized countries have targeted South Asia for dumping their hazardous wastes. This is perhaps due to less stringent environmental standards and lack of regional cooperation on controlling the waste trade. With economic growth and complexity of economic production, the rate of hazardous waste generation is also expected to increase in the near future. While there has been some success in involving the private sector in the construction and operation of high technology solutions such as incineration and treatment, a lot more needs to be done in collection and disposal services to deal with the extra waste. Most countries are now focusing on low-cost and potentially highly effective technology for waste reduction and avoidance, including economic instruments and recycling schemes.

16.5.5 Impacts of Improper Solid Waste Management

The current/existing handling and disposal practices of solid wastes result in the several hazards that are associated with them. It promotes micro-organisms and vectors that breed diseases and generates noxious odors. Improper solid waste management can lead to pollution of air, soil and water. Indiscriminate dumping of wastes contaminates surface and groundwater supplies. In urban areas, solid waste clogs drains, creating stagnant water, which function as breeding grounds for insects and which can lead to floods during rainy seasons. Uncontrolled burning of waste and improper incineration contributes significantly to urban air pollution. Greenhouse gases are generated from decomposition of organic wastes in landfills and the untreated leachate pollutes surrounding soil and water bodies.

16.5.6 Integrated Solid Waste Management (ISWM)

An effective, efficient and sustainable waste management system is still lacking in the region's urban areas. Integrated solid waste management is defined as the selection and application of appropriate techniques, technologies and management programmes to achieve specific waste management objectives and goals. Understanding the relationship between various waste related activities makes it possible to create an ISWM plan where individual components compliment one another. Waste hierarchies are usually established to identify key elements of an ISWM plan. The general waste hierarchy accepted by industrialized countries comprises of the following order - Reduce, Reuse, Recycle, and Recover through physical, chemical or biological processes. The cost of collection, treatment and disposal, in such cases, needs to be reduced through various mechanisms.

The main objectives of this strategy should be:

- Prioritize waste avoidance over recycling, and recycling over the other forms of environmentally sound disposal methods.
- Reduce non-avoidable wastes as far as possible.
- Maintain the content of hazardous substances in wastes at as low a level as possible.
- Guarantee environmentally sound residual waste treatment and disposal as basic requisites for human existence.

Cities are using a variety of regulatory and economic instruments to reduce industrial wastes. Effluent charge systems, for example, impose fees on industrial facilities according to the quantity and quality of pollutants discharged. These systems are more economical than regulatory mechanisms and hence, effective in inducing firms to reduce pollution loads. Cities should encourage the separation of industrial wastewaters from the domestic wastewater streams, and ask for separate treatment of industrial wastes or pre-treatment before they are discharged into sewers. Greater attention towards segregation of different kinds of wastes at the collection point itself will reduce the cost of disposal. Toxic waste should be collected and disposed of separately. Biodegradable waste should be tackled locally to avoid storage and transportation over long distances. In developing countries the municipal system handles only a fraction of the waste generated in a city. In many cities in Asia, more wastes are dealt with by a vast network of urban waste pickers. In Bangalore, India, street and dump pickers gather an estimated 500 metric tonnes of post consumer waste daily, compared with only 37 metric tonnes gathered by municipal workers.

16.5.7 Urban Water Quality

Ever increasing urban populations and their growing amounts of wastes have over-taxed the natural recycling capabilities of local rivers and lakes. Of the many problems associated with urban effluents, nutrient loading or eutrophication of local waters is one of the most serious. Nutrients are essential plant foods, but excessive amounts can cause radical plant growth – such as massive algal blooms, for example — that block the sunlight that other organisms need. As the plants die and decompose, the dissolved oxygen in the bottom waters is depleted – a condition that is deadly for fish and other aquatic life. Wastewater treatment facilities are inadequate in many cities of the South Asian region. At many places, untreated industrial wastes are discharged directly into canals and rivers, thus creating conditions for the spread of diseases.

16.5.8 Urban health and safety hazards

Health and safety issues also arise from improper solid waste management. Human faecal matter is commonly found in municipal waste. Insects are attracted to the waste and can spread diseases such as cholera and dengue. Using water polluted from solid wastes for bathing, cooking, irrigation or for drinking can expose individuals to diseases, organisms and contaminants. Various diarrheal and other diseases are spread via the faecal-oral route, and this route is much better facilitated where water supplies and sanitary conditions are inadequate. Providing adequate supplies of water for urban populations is both difficult and expensive. Many cities in developing countries have already tapped all existing water supplies and now must bring water from great distances or reprocess used water. Better management and reduction of losses from leaks and diversions could facilitate this problem.

16.5.9 Urban Transportation

During this century, the transportation sector has achieved the status of a key stimulant of economic growth. Expansion of the sector in terms of vehicle fleets, infrastructure, passenger and freight kilometers has also created a host of environmental problems. Consumption of non-renewable energy sources, adverse impacts on land use, emission of air pollutants, oil slicks in marine environment, and growing congestion on urban roads are some of the problems associated with transportation growth. In particular, transportation systems are a major contributor to the decay of urban environment and reduced quality of life in metropolitan areas due to their contribution to atmospheric emissions, noise and risk of accidents. Besides, the transport infrastructure has encroached into agricultural forest and urban land resources, which are becoming increasingly scarce in the region. There are instances of significant loss in agricultural land and deforestation caused by the construction of transport corridors. Perhaps the most serious and pervasive impacts of construction of transportation corridors stem from the draining of resources from rural to urban areas with the appearance of sprawling and unplanned urban settlements leading to numerous environmental problems. The trends in the transport sector clearly depict a pattern of expansion in every mode of transport. The expansion is, however, not uniform across different countries or different modes. In both cases, road transport remains the most dominant mode in the region. In fact, the rapid growth of road transport – particularly the increasing proportion of private vehicles – is relentlessly degrading the region's environment. Despite the fact that railways constitute one of the most energy efficient and environment-friendly means, their growth is quite moderate. The process of modernization of the railway system, however, is underway in many developing countries of the region. India has electrified about 25 per cent of its total track length. Air transport systems in the region exhibit a growth pattern similar to that of the other transport modes.

16.5.10 Inefficient traffic planning and related problems

It is not the extent of the transportation system that is a cause for alarm from an environmental standpoint. What might have worrying shift. The concentration of population and economic bases in large cities, combined with inadequate investment in transportation infrastructure, has led to unplanned expansion and poor energy efficiency in the sector, which has resulted in adverse effects on the environment. Congestion is perhaps the most visible manifestation of the failures in urban transportation planning. It undermines the central purpose of the automobile: ready access to people, goods and services. Clogged city streets exert a major toll on economic productivity and exacerbate air and noise pollution. In many cities at the peak period, traffic creeps along at less than 10 km per hour. Congestion is the result of insufficient road network, thus even a relatively few vehicles can cause an intense gridlock. Yet, expanding the road network is rarely an adequate solution. Such improvements are beyond cities' financial resources. Increasing vehicular pollution in major urban centers is becoming an area of growing concern. Poor maintenance of vehicles, degraded condition of roads and use of dirty fuels primarily precipitate the problems of air and noise pollution arising from operation of motorised vehicles. Traffic congestion and related pollution also have other negative impacts on urban areas. Potential tourists have been staying away to avoid pollution and congestion.

16.5.11 Traffic noise

Data collected along heavily travelled roads in Mumbai in India indicate sound levels of 65 to 85 dB. The noise of thousands of vehicles operating in close proximity to people leads to hearing loss, stress and many psychological disorders. Poor conditions of vehicles in developing countries further aggravate the problem. Noise pollution from higher volumes of road traffic is a threat to the residents of major urban settlements.

16.5.12 Growth in motor vehicle ownership

Income levels greatly influence the mode of transport people use and the number of trips they make. In general, with the rise in incomes there is a marked increase in vehicle ownership. For those who can afford them, cars provide a fast, convenient and relatively inexpensive mode of travel. The estimated total number of registered vehicles in the region in 1992 was over 130 million, with an annual growth rate of 3 to 4 per cent. However, increased automobile ownership leads to increased travel. In some countries, the number of trips by cars is growing faster than the number of cars.

16.5.13 Urban Air Quality

Urban air quality has deteriorated largely on account of growth in industrial activity, transportation needs and energy production. Flyash, combined with emissions from the increased use of coal, has emerged as a major environmental concern in the region. It is estimated that about 35- 40 million tonnes of flyash is generated by thermal power plants each year in India, of which a mere 2-3 per cent is recycled. The effects of burning coal and the resultant air pollution tend to spread over large areas, resulting in acid deposition in areas near the coal burning plants as well as further away. In India, ambient air quality status derived from a network of 290 stations covering 90 towns and cities in recent years indicates that while Suspended Particulate Matter (SPM) is consistently critical in many cities, the concentration of nitrogen oxides and sulphur dioxide is also increasing and is already transiting from moderate to high to critical levels. As estimated, 2,000 metric tonnes of air pollutants are emitted into the atmosphere every day. Vehicular sources contribute about 63 per cent of total pollutants emitted, followed by 29 per cent by industries and thermal power plants, and 8 per cent from the domestic sector (*TERI, 1996*). The recent order of the Indian Supreme Court disallowing registration of private non-commercial vehicles failing to conform to Euro-II fuel emission norms, in the National Capital Region (NCR) from April 1, 2000 onwards has added novel dimensions to the public debate on eco-friendly and sustainable urban transport systems. In Nepal, vehicular emission is the major cause of deteriorating air quality due to the use of substandard or adulterated fuel. In Dhaka, 50 per cent of SO2 and NO2 emissions are contributed by vehicular traffic. Also, the numerous brick kilns operating seasonally all over Bangladesh use coal as their source of energy. In Bhutan, incidences of air pollution arise from heating appliances that use fuel wood, and vehicular emissions.

16.5.14 Effects on the global environment

Vehicular emissions affect not only local environments and economies, but also the global ecosystems. Vehicles account for 14 per cent of the world's emissions of carbon dioxide - the primary greenhouse gas in the global warming threat. Nitrogen oxides and hydrocarbons act together to form ozone, also a greenhouse gas. The presence of another vehicular emission, carbon monoxide, can lead to a higher ambient concentration of methane which is another potent greenhouse gas. Finally, chlorofluorocarbons, leaked from air conditioners of vehicles, are not only potent greenhouse gases, but also the main known cause of atmospheric ozone depletion. Currently, the countries of the region are placing a high emphasis on the end-of-pipe approaches to address the problem of air pollution, largely manifested in regulations concerning vehicular emission standards. Fiscal and technological measures have also been undertaken to reduce pollution. Other measures include:

- ***Improving public transportation facility:*** The challenge is to expand and improve the transportation system and thereby discourage over-reliance on privately owned cars.
- ***Cleaner fuels:*** Alternative fuels including compressed natural gas (CNG) and LPG are receiving increased attention as potential pollution reducers. CNG is being already used in Indian public transport buses. A high priority for developing countries is to reduce lead content in gasoline. Zero emission vehicles could greatly improve air quality, health and quality of urban life.
- ***Vehicle inspection and maintenance:*** Older vehicles account for a disproportionate share of air pollution. A badly maintained old vehicle can emit 100 times more pollutants than a properly maintained modern vehicle. Effective inspection and maintenance programmes can reduce emissions from old vehicles and ensure good condition of new vehicles. Such programmes need more attention in developing countries.

16.6 CONSUMERISM

16.6.1 Energy Demand

Urbanization has a profound impact on the amount and type of energy consumed. Along with population growth, economic development and industrialization, urbanization is one of the principal forces driving the increase in global energy demand. Although traditional rural societies rely heavily on human and animal energy and on nearby wood or fuel, urban societies today are characterized by their reliance on fossil fuels and electricity. These patterns of energy use lead to different environmental impacts. In the developing world, the per capita energy consumption remains low. In South Asia's urban centers, the consumption of energy is more than in its rural belts primarily because of the use of more home appliances run by electricity as well as the use of private transport. Urban dwellers are more likely to travel to work via energy intensive modes of transportation. Urban manufacturing and industry are more energy-intensive than traditional farming.

16.6.2 Water Demand

The South Asian region has enormous reserves of water, but it still suffers from urban water supply problems. The growing demand for water, along with poor water resource management and mounting pollution levels, contributes to water supply problems in and around cities. Urbanization is leading to changes in lifestyle and consumption patterns, which, in turn, is leading to increased demand for water. Industrial demand for water is also on the rise. As

the number of people in urban areas increases, so does the demand for food and hence for irrigation in agricultural areas which are close to cities. These pressures can quickly result in a consolidated demand for water that surpasses local water supply. Poor water management practices exacerbate local water shortages. Water is usually priced much lower than the actual cost of treating and distributing it (in part because of government subsidies), leaving little incentives for households and industries to conserve the resource. Inefficient water distribution system is another major source of water loss. Water scarcity is also closely linked to water quality. According to a World Bank report, many cities of South Asia have to make do with leaking water supply pipelines, which means that between 20-50 per cent wastes seep into the public water supply system. Freshwater lakes and rivers provide affordable and easily accessible water, but uncontrolled discharge of domestic sewage and industrial effluents into them has left many urban rivers heavily polluted and their water unsafe for use. Consequently, cities search for water supplies well beyond their boundaries - which lead to conflicts. Such conflicts among urban, industrial and agricultural users may assume particularly severe proportions in the South Asian region. Already struggling with uneven distribution of water resources and local water scarcity, the urban population of this region is expected to double in less than 25 years. In India, total water demand is projected to double by 2025. Although agriculture will still claim bulk of water supplies, demand is growing fastest in urban and industrial sectors and is projected to reach 135 per cent over 40 years.

16.7 TOWARDS SUSTAINABLE CITIES

16.7.1. Environment Priorities for South Asian Countries Towards sustainable cities:

Sustainable development is defined as meeting the needs of the present without undermining the resource and ecological base of the future generations. Cities are clearly central to meeting the goals of sustainable development. The majority of the world's population will soon live in towns and cities. World-wide city-based producers and consumers already account for most of the renewable and non-renewable resource consumption and waste generation. These long-term ecological concerns are relevant to cities in the developing world. As these cities grow and prosper, their consumption of resources and generation of wastes will rise accordingly, unless actions are taken now to promote the efficient use of resources and minimization of waste. The challenge for all cities is to seek new management approaches that provide for the needs of urban residents, as well as protect environmental resources on which human life depends.

16.7.2 Integrated transportation and land use patterns

Two major issues that pose great challenges to policymakers in the transport sector is energy efficiency and pollution control. A multi-pronged approach, using innovative regional and sectoral development policies, is needed to address the current transportation problems related to environment, and also to seek proactive means of addressing future developments. While it might be difficult and costly to impose stringent emission standards, fiscal measures can be employed to lower prices of lead-free gasoline and energy efficient vehicles that are also low on emissions. Adoption of new traction technologies employing electric and other low-emission motors can be actively explored too. The region has undertaken some fiscal and technological measures to reduce pollution as well. For example, charges have been introduced on leaded gasoline. The use of compressed natural gas (CNG) is being considered as a comparatively less polluting alternative. It is of utmost importance to build energy-efficient mass transit systems for commuters in the existing major cities, as well as those for the transportation of goods and people between major industrial and population centers. This requires huge amounts of investment as well as considerable planning and design, for which the countries of the region need to be extensively assisted. The existing road networks in major cities and between them need to be vastly improved to create a reasonable flow of traffic. This would also ensure reduction in levels of harmful emissions per km of travel. This measure should be taken in conjunction with measures designed to reduce traffic volume. An attempt should be made to disperse further economic activity regionally rather than concentrate it in large urban centers. The decentralized production centers so formed should, however, be designed to integrate various types of manufacturing activities into creating relatively closed regional sub-economies, rather than specialized ones dependent on large volumes of trade flows between regions. It might be useful, in this context, to promote information and communication technologies so that people can work from bases close to where they live and submit work, talk and conduct meetings through the electronic media. Land is recognized as valuable in its natural state and is not simply seen as a raw material for urbanization. Transportation infrastructure development rather than land use planning may be far more influential in determining where development will take place. Without coordination of land use and transportation planning at the outset, chances are that cities will develop increasingly car-dependent forms.

16.7.3 Infrastructure planning

Community participation: Essential services such as water supply, sanitation and garbage collection in low-income settlements are not readily provided by individual action.

Neither does increase in individual family income necessarily lead to improvements in neighborhood living conditions. Instead, these are neighborhood and community issues requiring collective action. However, if people do not feel a sense of security in their households or in the fact that they are members of a community, they are not likely to devote their energies to improving environmental conditions.

Awareness of waste management and conservation: Cooperation and participation of the community in solid waste management is essential in implementing any solid waste management strategy. Reduction, reuse and recycling of waste cannot be performed without such an active participation. In fact, community involvement in the decision-making process in developing solid waste management strategies should be encouraged at its inception to make the implementation of any solid waste management programme a success. The national policies should be aimed at reduction of waste by encouraging producers and consumers through education and awareness. Sorting of waste at source plays an important role for getting private sector partnership in solid waste management, especially in the recycling industry. With the increasing recognition of the value of informal waste collection for urban functioning, efforts are now under way in a number of cities to integrate these activities into formal urban economy and minimize the health and safety risks of waste collection for those whose livelihood depends on it. Many of these efforts are driven by NGOs or community-based organizations, and face the organizational and financial difficulties common to voluntary efforts. As a result, few projects have led to city-wide programmes, and many have not survived even on a small scale. In cities of the developing world, only a fraction of urban sewage is treated. This is partly because of the costs of collecting and treating urban sewage is high. Therefore, lower cost treatment options are clearly needed. Another option involves the reuse of municipal wastewater. Bio-solids can be separated out, composted and reused as fertilizer, while the treated effluent can be used to irrigate landscaping or crops or to feed aquaculture ponds. Innovative technologies alone will not suffice. Especially in the developing world, there is a critical need to develop the institutional capacity to plan, finance and efficiently operate and maintain conventional wastewater treatment systems.

16.8 LET US SUM UP

Developed nations have a higher percentage of urban residents than less developed countries. However, urbanization is occurring rapidly in many less developed countries, and it is expected that most urban growth will occur in less developed countries during the next decades. The world's population is quickly becoming urbanized as people migrate to the

cities. In 1950, less than 30% of the world's population lived in cities. This number grew to 47% in the year 2000 (2.8 billion people), and it is expected to grow to 60% by the year 2025.

The rapid growth of urban areas is the result of two factors: natural increase in population and migration to urban areas. Today the movement of people from rural to urban areas is most significant. The urbanization process involves changes in the economic, social and political structures of a region. Rapid urban growth is responsible for many environmental and social changes in the urban environment and its effects are strongly related to global change issues. The rapid growth of cities in developing countries strains their capacity to provide services such as energy, education, health care, transportation, sanitation and physical security. Because governments have less revenue to spend on the basic upkeep of cities and the provision of services, cities have become areas of massive sprawl, serious environmental problems, and widespread poverty.

One of the major effects of rapid urban growth is "urban sprawl"- scattered development that increases traffic, saps local resources and destroys open space. Urban sprawl is responsible for changes in the physical environment, and in the form and spatial organization of cities. In developing countries, poorly planned urban development is threatening our environment, our health, and our quality of life.

16.9 KEY WORDS

Sustainable, CNG, LPG, Social status, community status

16.10 QUESTIONS FOR SELF STUDY

1. Explain the factors responsible (push and pull factors) leading to the growth of Cities in developing countries
2. Discuss the environmental impact of urbanization in developing countries
3. Discuss the planning strategies suggested in mitigating the environmental Problems in developing countries

16.11 FUTURE READINGS

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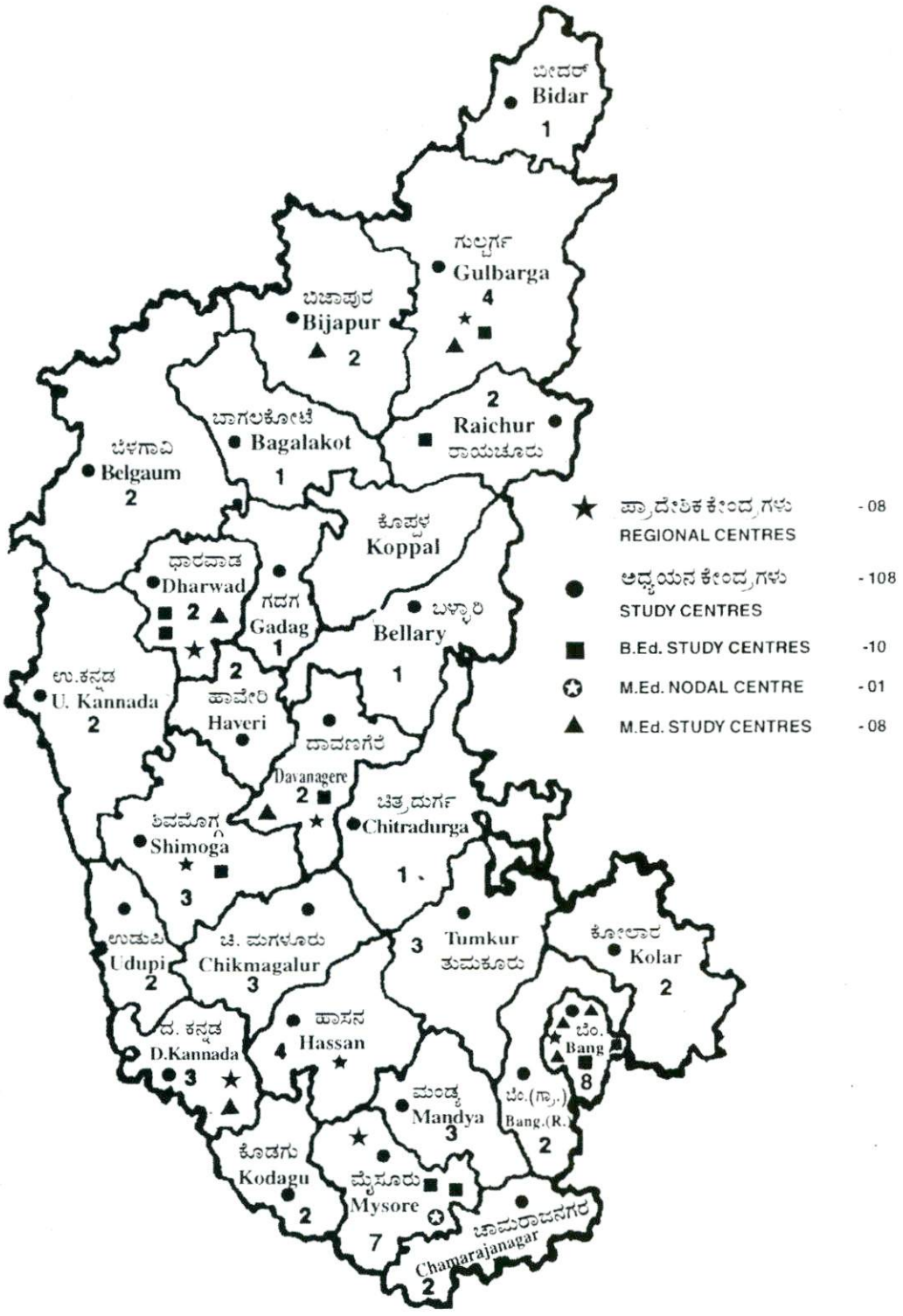
Regional and Study Centres of Karnataka State Open University



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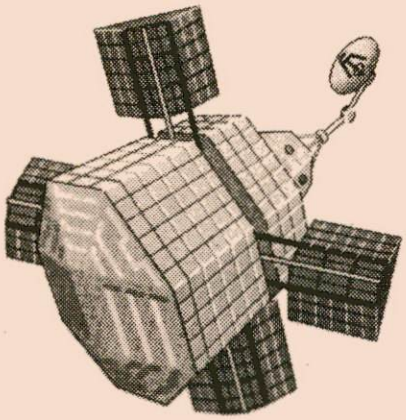

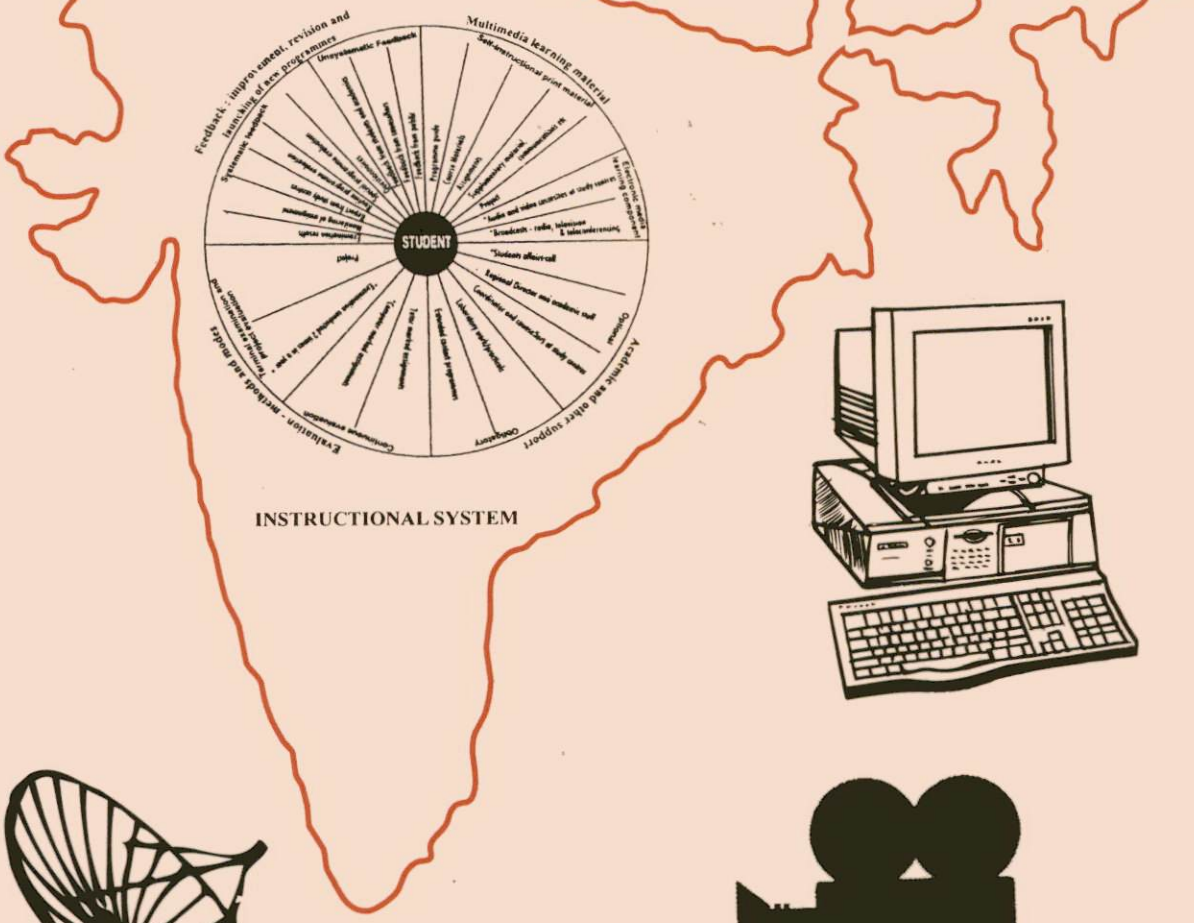

INSTRUCTIONAL SYSTEM