UNIT 4 ENVIRONMENT AND HUMAN RELATIONSHIP

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4.0 INTRODUCTION

In all societies, we find reciprocal relationship of man and his environment. This is evident from the fact that human beings explore the components of environment. Environmental factors like biotic and abiotic factors are found to be distributed in different geographical regions of the world. How people establish a reciprocal relationship is possible to understand only when, we study the world in various geographical zones. We can categorize the different areas according to the vegetation and climatic conditions which brought certain regions of the world under a zone or umbrella of environment to which people respond and develop relationships.

4.1 OBJECTIVES

After reading this unit, you will be able to:

- explain the climatic zones of the world;
- analyse the man-environment interaction and its nature of interdependence;
- describe the triangulation of nature, culture and personality; and
- discuss the environmental responses to development.

4.2 MAN AND ITS CLIMATIC ZONES

When we say climatic zones, it means environment and its settings in different parts of the world. The geographical and environmental characteristics may not be absolutely uniform in each of the climatic zone but they have many things in common. Environment and climate are directly related to one another in the sense that they reciprocate one another. Climatic factors are responsible for the

changes of environment of a particular region and vice versa. Environmental regions according to the geographers have characteristic combinations of terrain type, soil type, climate, plant type and resource covers. Again, world vegetation is controlled by the climate and it has been divided into tropical, dry, temperate, cold and polar (Koeppen's classification) regions.

A) Humid Tropical Climate:

- **The Tropical Rain Forests or Equatorial Climate:** This includes regions like the Amazon basin, the Congo basin, South-east Asian islands. Temperature is high throughout the year with an average of 27^0C, heavy rainfall of annual 250 cm is prevalent.
- **The Savanna Climate:** This includes areas like the Sudan, African plateau, tropical grassland of Northern Australia, the Llanos of Guiana highland of South America and the Campos of Brazil. Conventional Rainfall occurs during the summer and rest of the year remains dry. Temperature is high all the year round with annual rainfall of 160 cm. This place is characterized by tropical grassland with scattered deciduous trees.
- **The Monsoon Climate:** The places includes India, South-east Africa, Northern Australia, the Guinea Coast of South Africa, and the Pacific coast of Columbia. The monsoon climate is represented by seasonal reversal winds with rainfall and drought which is caused by the annual temperature differences between continents and oceans. Temperatures are high and low during the summer and winter respectively.

B) Dry Climate:

- **The Desert Climate:** This includes the Sahara, the Arabia, the Thar, South-western USA, South-western Africa, and Central Australia. Annual temperature is 38^0C. Scarcity of water is the typical character of it.
- **The Steppe:** This is found in North America and Eurasia. These are the dry lands with 30 cm annual rainfall temperate grasslands. Trees are scarce due to scanty rainfall.

C) Humid Mid-latitude Climate:

- **The Mediterranean Climate:** This includes areas around the Mediterranean Sea, Central California, Central Chile, Southern part of South Africa, south-eastern and south western part of Australia. Warm and dry summers, mild temperature winter, moderate rainfalls are present. Vegetation is not luxuriant but contains small trees with broad leaves.
- **The Humid Sub-tropical Climate:** : It is found in the South-eastern United States , Uruguay, Argentina, Southern Brazil, Eastern China, Southern Japan, Eastern coastal belt of Australia. These areas are characterized by typhoons, hurricanes, hot and humid summer.
- **The Marine West European Climate**: This includes most part of Europe, northern and southern American narrow coastal belts, New Zealand, South-eastern tip of Australia. Weather remains unpredictable throughout the year.

D) Humid Mid-latitude Climates:

- **The Taiga Climate:** This region covers western Alaska to Newfoundland in North America and from Norway to the kamchetka peninsula in Eurasia. It has short summer. Vegetation is soft-wood coniferous forests.
- **The Cool East Coast Climate:** It covers the area of North-eastern coast of America, Northern china, Japan, Korea and lower Danube plains.
- **The Continental Climate:** It covers Poland and Baltic states, central Russian plain, northern states of North America, central parts of Canada. It has short and warm summer.

E) The Polar Climate:

- **The Tundra Climate:** It covers the Northern Hemisphere, Arctic Ocean and islands, Ice-free shores of Iceland and Greenland. Vegetation comprises of grasses, mosses and lichens.
- **The Ice-cap Climate:** No vegetation is found due to heavy coverage of ice.

F) Climate of Highlands: It covers mountaineous regions of the Alps, the Himalayas, the Tibetan plateaus, the Rockies and the Andes.

This climatic as well as vegetative distribution is the most important aspect of understanding natural environment. It sets the habitation of different kinds of plants and animals providing a blue print to the mode of existence and survival of human beings and their culture. The geographical distribution of nature influences human beings directly or indirectly. The process of human settlement, construction of houses, agriculture, irrigation, domestication of animals, forestry, transport and communication are all related with the climatic conditions and vegetative components. The nature of vegetation and climate makes man face the vagaries of nature and in due course of time man learnt to use various means and methods of technology for his existence and transformed himself into modern man. This led to the development of knowledge into various belief patterns, morals, norms and rules or later on known as culture passing from one generation to the other.

4.3 MAN-ENVIRONMENT INTERACTION

Man-environment interaction is very important, since the time of human evolution. Nature has provided habitat for adaptation to a particular environment. The relationships of man and environment vary from one society to another depending on the surrounding environment. There are many perspectives in relation between culture (man) and environment. Here, we take environment as the product of nature and vice versa. However, these two are always used interchangeably. Culture has evolved in a natural setting or environment and culture itself gives meaning and understanding to the environment around. We see nature or environment as a dichotomy to culture. When a child is born he is taken as a biological entity. It is only the cultural notion which gives a meaning to the biological entity or being, by determining his or her gender. It is in this sense, that there exists a distinction between sex and gender. While the former is biological the latter is cultural. Here, it means nature represents the biological

world and culture represents the mental construct. We always have taken man or culture and environment or nature as a dichotomy (man-environment or culture-nature dichotomy) however; if we consider it in detail we would be able to see a dualism rather than the dichotomy. It implies that both are interdependent to one another. E.g. when we study Indian culture, we will find how it has been drawn from nature and related it to one another i.e. religion is based predominantly on nature and its products like scared groves, the Sun, the Moon etc. This belief of nature and its resources in the form of religion is a part of Indian culture, ideology that has been reflected in the form of traditions and customs and day to day life. Thus, the man-environment relationship gives meaning to understand the dichotomy and dualism. Understanding the people or the environment of a natural setting is possible only when we study the cultural features of the area. The interaction of man and its surrounding environment may take place in several ways.

4.3.1 Environment- Culture- Personality Studies

The basic understanding of the cultural practices was taken as the character or temperament or personality of the members of a particular group in a society. We have similarity and differences in personality or character traits among the members of a group because of the culture, its continuity and practices. All the personality traits are shaped by the culture as well as the environment in which an individual has been brought up. Culture is embodied in an individual character through enculturation and also the environment which shapes the culture of members.

Let us see, how personality can be studied from different perspectives. It is considered as traits, habits, attitudes, roles and status, ideas and values of the members of society which is neither good nor bad but unique to its own culture and environment. It is acquired and influenced by social interactions or product of the relationship of mankind and environment. The personality formation of an individual or members of a group is always influenced by culture and environment.

Environment is one of the factors which plays an important role in the personality formation of an individual. It is because of the fact that different geographical areas have resulted into cultural groups of different personalities. For example, Eskimos have different cultural personality than the American Indians because of the different geographical regions. The culture of the tribes of Andaman and Nicobar Islands have different personalities based on their exposure to different environment. The people who are in the Port Blair are totally advanced while, the Nicobaries or Sompens of the area are still practicing hunter gathering lifestyle. Their personality is still shaped in relation to their environment. Likewise, people who inhabit the hills and plains of India have different culture personalities as they belong to different geographical environment. The cultural practices, characters of the members of the fellow tribes inhabiting the hilly regions and forested tracts or interior regions of the hills are different from the inhabitants of plain regions. They develop a personality which is suitable and meaningful to their environment. This same tribe or community when migrate to the plain regions more or less adopt the personality and cultural practices of the plain people which makes themselves totally different from the fellow inhabitant tribes

of the hill region. Therefore, the environment has shaped the cultural practices which in turn determines the personality of the group or individuals.

Besides, the environment, cultural experiences and heredity also play important role in personality formation. The culture of a particular region is really influential in shaping the personality of the group. The culture personality study by Ruth Benedict, an American anthropologist as well as a folklorist shows that people from the same geographical area do have different personality due to their differences in the cultural practices. She has studied three cultures namely Peublo Zuni, Dobu and Kwakiutl. The Pueblo are the peace loving, co-operative, kind, helpful, and good natured. They respect the tradition and group integrity. They perform rituals for the benefit of the community while, the Dobu of Melanesia are exactly in contrast with the Pueblo in temperament and character. Conflict, competition, violence are very common. They use magic for harming others. The third category, the Kwakiutl are materialistic and live after prestige and status. From these examples Benedict concluded that the understanding of cultural differences has been influenced by the characters, temperament and overall personality which have been shaped by the physical and cultural environment.

Abram Kardiner, an American Psychoanalyst studied the Marquesas islanders, a Polynesian island culture. The main cultural practice among them is female infanticide, an issue of social adaptation. They practice this act of female infanticide due to limited supplies of food and this also acts as a means to control the population keeping the population within the limited food supply. However this creates a problem of excess male population in the society resulting in the system of polyandry where females spend most of their days with different husband and at local beauty shops maintaining the status and beauty. This resulted in frustration, fear, anxiety among the children. They were left neglected and men folk also suffer from the same. Jealousy and enmity crept amongst them. The hatred of women has been portrayed in the ceremonial taboos, folktales and legends of Marquesas. So, the occurrence of food scarcity led to the institution of polyandry, absence of discipline in childhood and thus the effect of social environment shaped by the physical environment can be observed in the general personality of the Marquesas. Same is the case with the personality type of the Toda of Nilgiri hills which is different from the Munda and Oraons of Central India.

So, from the above accounts of different communities we come to know that cultural practices shaped the personality of a group and this cultural personality is directly or indirectly shaped by the physical and social environment. The understanding of man-environment interaction through the cultural practices expressed in terms of different personality brings about diversity in culture and personality. This diverse nature would continue from time to time in their respective cultures and personality until and unless major changes or factors influence the particular society or compel them to bring changes. As we have already discussed the nature of society and its dynamics, through the cultural practices in relation to their environment let us take some areas which would show the dynamics of natural environment to development. Many areas such as tourism, urban agriculture, and conservation of nature would bring closer to the understanding of man-environment relationships in a broader perspective.

Check Your Progress 1

Note: a) Use the space given below for your answer

b) Compare your answers with those given at the end of the unit

1) Name the climatic zones of the world. Discuss it in the light of human habitation.

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2) Explain the nature of man and environment relationship. How personality has been shaped by culture?

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4.4 ENVIRONMENT: RESPONSES TO DEVELOPMENT

In the present situation of globalization, Environment and its understanding is the need of the hour. It may be studied in the way of development, its impact or interactional pattern of both.

4.4.1 Tourism

Tourism is a large revenue production process where many countries have shown interest over the implementation of it. This has not only provided the best of income but also valued the cultural importance of land, air, water and resources.

Tourism can also provide good contributions in the maintenance and revival of lifestyles and cultural practices (Hillman 2003). It can also lead to decentralization, poverty reduction, heritage conservation, competitiveness and importance of national identity and the overall sustainable socio-economic lifestyle. It is the best way to conserve natural resources even though sometimes, it is difficult to achieve what has been expected. The success of tourism lies on the richness of the value of the environment and culture of the country. The growing cultural diversity and its relation to mankind and other related environment issues brought different expectations from the tourists also. Some of the tourists' activities help bringing a boom to the local economy, cultural richness and personality development. But, at the same time there are certain setbacks due to tourism in the local knowledge and culture systems and definitely to the physical and social environment.

"The risks and opportunities provided by tourism are related to the economic position of the communities and relations of power. Some of the most notable risks related to tourism activities including ecological cultural and agro tourism, pollution and waste, change in consumption pattern and nutrition, change in land use and livelihood and the spread of infectious diseases (Tourists to host and host to tourists)"

The tourism policy should clearly focus on sustainable management of natural and cultural resources to promote local knowledge practices and experiences to mitigate the negative impacts of it.

4.4.2 Urban Agriculture

Population increase and social mobility particularly rural-urban mobility change the traditional pattern of poverty in rural areas to the urban or peri-urban areas where, clusters of migrant labours throng into the vicinity of cities, in the slums and streets. Rapid urbanization and changes in the livelihood pattern brought significant changes in the land use pattern. So to cope with the changing perspectives of land use and work culture, the practice of urban agriculture becomes popular and important for providing livelihood strategies, employment opportunities and quality food. Urban agriculture is the agriculture practice within or close to urban centres, using primarily urban-based resources to provide the urban population with certain services, not necessarily food. To a greater or lesser extent, Urban Agriculture (UA) in developing countries can and, in fact, does help in reducing urban poverty and improve the food security of urban household. It also has great potential to use composted household waste and as a result, is a sustainable means of managing the urban environment (Mougeot, 2005).

Today, with the increase in the number of urban population, the practice of urban agriculture is increasing across the world. This is based on small-scales and found to be scattered in and around the city. The relationship of urban environment and urban agriculture brought farming in the small courtyards, rooftops, roadsides, public places, riverbanks, peri-urban areas etc. This is not only giving the provisions of nutritional health and food security to urban dwellers but, helping in protecting and improving the environment in one or other way round. Even though the production rate is low, it reduces pollution and helps in maintaining sustainability in the urban atmosphere providing a positive impact to environment.

The practice of urban agriculture is quite successful in the African and American countries. Mention may be made of Lusaka, Zambia.

Lusaka is one of the fast growing cities in the world like other cities with massive built-up and reduced rural spaces. An urban agriculture project was conducted in 1992-1993 in the peri-urban areas of Lusaka and rural areas of Zambia. Their focus on household garden activities became a significant factor to food security.

Among the African countries Zambia represents high morbidity and mortality due to increase malnutrition rate. This malnutrition is found to be very high in urban settings due to urban wasting. Earlier it was very common in the rural areas however the trend has been shifted to the urban areas due to various factors. In urban areas there were strict prohibitions given by the city councils on gardening and agriculture. Limited areas were allowed for such activities. The problem of malnutrition is coupled with food wastage and therefore, food security becomes a question to the inhabitants.

Lusaka has four types of agriculture. They are:

- Gardening for food
- Semi-commercial gardening
- Commercial gardening
- Rainy season gardening

Women and children also work same as men taking care of other household activities. In some areas of Zambia, the practice of gathering is still going on. However, the involvement of urban community is very less. People of urban area also practice rainy season gardening who are in the lowest per capita income. A Household Gardening Model was developed to make a better understanding of the urban agriculture particularly gardening activity in the social and environmental context. Under this model, household becomes the centre point of the model in which various factors such as education, occupation, labour availability, access or entitlement to resources etc. act as a good determinant to vulnerability of the households. This vulnerability increases with limited land supply and water resources. Diverse production of food by the practice of gardening indicates food security and income generation which would indirectly provide direction towards food security to the households. Thus, urban agriculture in Lusaka provides resources and its availability, generates income and also food security.

From the above case, it is known to us that urban agriculture practice is a means to solve the problem of growing population, limited lands and insecurity for survival. The cases of urban agriculture and its associated techniques are different from one place to another. Some of the common types of urban agriculture are micro-farming in and around the house (rooftop), community gardening, institutional gardening, small scale semi-commercial horticulture, floriculture, livestock, fish farming, large scale farmings etc. In case of India, lets us take an example:

Delhi is rapidly growing day by day. An estimate of one thousand individual per day come to live in Delhi. These migrants come and live in the proximal regions of the city. With population growth urban poor and food insecurity is also increasing. In India, little recognition of urban agriculture is given by government, research organizations and NGOs. Activity of peri-urban agriculture in and around the vicinity of Delhi is very common. Its practice and recognition has become a neglected domain. During 1997-2000 a research project was conducted by Imperial College of Science, Technology and Medicine, London (UK) in partnership with several Indian Universities, Government organizations and NGOs (Non-Governmental Organisations) in Delhi and Varanasi.

By using remote sensing satellites, the land pattern of Delhi was studied and found to be consisting of both rural and urban. The main agricultural region is found to be along the floodplains of the Yamuna River. Most of the agricultural land and forest are decreasing due to increased urbanization, which resulted into the loss of village common lands. However, agriculture is still the major land use pattern in and around Delhi. The people who depend on agriculture are mostly either landless farmers or marginal and sub-marginal landholders. Most of the landless cultivators work as labourers or cultivate on leased basis. Employment generation involved with this peri-urban agriculture is temporary as it is based

on seasonal plantation. All kinds of cultivation come to a halt, whenever there are interruptions of electricity and irrigation limitations. Most of the high yielding variety supports the production rate replacing the traditional agriculture. Staple crops (such as wheat, rice and millet), vegetables and dairy products are more in practice as they fetch high market value. These items of essential commodities are always in demand and also aid to the food security of the increasing urban population. Such products from urban agriculture are easily accessible to all with relatively cheap price and fresh quality vegetables while, the farmers also retain food for their consumption as well.

Thus, the activity of urban agriculture is to be promoted either in one or different ways to achieve food security and sustainability. This would also provide ways to development and richness of diversity in knowledge and practice.

4.4.3 Creation of Nature for Conservation

Environment is focused and studied in different ways to understand the components, function and its continuity. The main causes of unsustainability are the ever increasing human population and over exploitation of the natural resources all over the world. This has created a situation where non-renewable resources may come to an end after some time. In order to solve this problem we need to create a balance between the population growth and resource utilization. We should bring various human activities that could make improvement and changes in the already degraded natural environment creating an atmosphere which is pollution free, biodiversity full of rich resources, awareness for the conservation of nature.

With the increasing rate of population, the practice of agriculture and industrialization has increased to a great extent. In this process consciously or unconsciously, human beings have exploited the natural resources, plant and animal species to such an extent that today, we are facing a problem of ecological imbalance. It has resulted into global warming, illnesses and diseases, poverty and so on. In order to accomplish the loopholes several opinions have been given from different aspects like need for the creation of parks and sanctuaries to conserve and protect wild plants and animals, policies and programmes for biodiversity conservation, afforestation, soil management etc. Experts from different fields focus on different areas to solve the problem. However, there is a need to understand the relationship between the nature of environment and the development processes taking place in a country. The holistic study of any development process along with the environment factor as a basic unit would bring a balanced ecology and harmony in the society.

Awareness and education on environment and its conservation needs to be imparted. Today, in India environmental education have become compulsory in schools and colleges and its curricula to acquire knowledge, attitude, skills and participate in the actual real life environment related activities for the conservation and protection of environment from the various problems. They can also take part in the activities and actions of conservation such as the creation of eco-clubs in the schools and colleges as well as at the community level, organization of various competitions on environmental issues, plantation of trees for the commercial, recreational and other purposes. Government of India has also implemented various policies related to the conservation of environment. Certain

laws and policies help in the strict control of eco-friendly environment. Many illegal activities related to timber works, extraction of forest and forest products are highly punishable with fine and even imprisonment. Recently, the drive of banning polythene bags to control the pollution and its effects on health has started taking its shape in various states of India. Government as well as Non-governmental organizations play important role in the implementation of policies, education of people, protection of wild plants and animals. Mention may be made of the introduction of tigers in the Sariska Tiger Reserves.

Thus, conservation of nature is also required for the purpose of economic value even if the hidden costs of loss or gain are hard to determine. The economists have to develop long term cost-benefit balance in conservation. There are certain value systems associated with a particular environment or nature in terms of the socio-cultural understanding of the society. People accept the value of conservation in terms of its belief systems embedded in the customs and traditions of a particular culture. So, nature has spiritual and aesthetic values that transcend biological richness of genetic compositions and economy. However, with the growing pace of industrialization, globalization and climate change, there are tremendous changes in the environment. This in turn affects man- environment relationships.

Check Your Progress 2

Note: a) Use the space given below for your answer

b) Compare your answers with those given at the end of the unit

1) Discuss tourism in the context of environment and development.

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2) What do you understand by the term urban agriculture? Give examples.

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3) What are the essential criteria for conservation?

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4.5 LET US SUM UP

- There is a reciprocal symbiotic relationship between man and environment.
- The distribution of vegetation and its various types of climatic zones in the world are determined by the environmental factors.
- The nature of understanding man and environment portrays the nexus of nature-culture or man-environment dichotomy as well as dualism.
- The nature culture dichotomy separates the two concepts and at the same time it also shows its interdependency or what is called dualism. The two always exist at the same time making up one another.
- The reasons of similarity and differences in the temperament and personality of one group with the other are determined by the environment or the culture itself.
- The personality traits are shaped by culture and culture is again shaped by it. Some studies also present the involvement of both.
- The concept of tourism and urban agriculture has brought the notion of revival of lifestyles and cultural practices, poverty reduction, employment opportunities, decentralization and sustainable lifestyle.
- The concept of conservation requires a holistic understanding of environment and development as well as awareness to all.

4.6 KEY WORDS

Biotic (living) factors : Any living factor that affects organism(s) or shapes the ecosystem.

Abiotic (non-living) factors : Any non-living component of the environment such as temperature, soil, water, air, etc.

Habitat : A place or part of environment where, an organism lives or grows.

Urban agriculture : It is the practice of cultivation in and around the city or in the peri-urban areas.

Peri-urban areas : It is the place adjoining an urban area.

Conservation : It means the preservation of the quality environment of an organism or thing in order to maintain a balance in nature.

Afforestation : Establishment of forests by the plantation of trees.

4.7 REFERENCES AND SUGGESTED FURTHER READINGS

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4.8 KEY TO CHECK YOUR PROGRESS

Check Your Progress 1

1) Your answer must include the following points
   - Types of Climate : Humid Tropical Climate, Dry Climate, Humid mid-latitude Climate, Humid mid-latitude climates, The polar climate, Climate of highlands
   - A means for survival
   - Direct and indirect influences of man and climate
   - Human actions developed in response to climate

2) Your answer must include the following points
   - Man's adaptation to a particular environment
   - Evolution of culture from a natural setting
   - Dichotomy and dualism of man-environment relationships.
   - Personality shaped by culture: Marquesas of Polynesia and their cultural practice of female infanticide.

Check Your Progress 2

1) Your answer must include the following points
   - Income generating process
   - Revival of cultural processes and practices
   - Positives and negative impacts of tourism

2) Your answer must include the following points
   - Cultivation in the peri-urban areas
   - Increase in the more than agricultural activities
   - Quality of food and food security.
   - Employment generation practice
   - Sustainable mode of resource consumption.

3) Your answer must include the following points
   - Use of renewable natural resources
   - A balance of population growth and resource utilization
   - Development of a holistic approach of understanding environment.
   - Various activities such as painting competition on the environmental themes, establishment of eco-clubs, participation in community activities.

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