UNIT 2 ENVIRONMENT AND EARLY SOCIETIES I – HUNTING-GATHERING AND NOMADIC SOCIETIES

Structure

2.0 OBJECTIVES

In this Unit you will study about environmental history during times of proto-history and pre-history. There were several interrelated developments that took place during course of this time-period. After going through this Unit, you should be able to:

- Know about nature of sources facilitating study of environmental history for early societies;
- Analyse interaction of humans with environment;
- Examine the role and influence of environment in shaping character of human history;
- Understand life and subsistence patterns of hunter-gatherers;
- Describe chief characteristics of nomadic pastoralism;
- Discuss settlement patterns of nomadic communities; and
- Explain evolution of man-environment relationship simultaneous to the process of evolution of humankind.

2.1 INTRODUCTION

Majority of writings pertaining to history of environment in India concern themselves with developments that have happened over past two centuries . Yet, the importance of environment in early India cannot be denied against which later developments took shape. First major work to have been published on precolonial India was by Gadgil and Guha in 1992 that paid attention to patterns of ecological change over course of time. Of late, a reassessment has been undertaken by historians analyzing a range of archaeological evidence, art forms and literary texts. Regional evidence has thrown light on new source materials, offering us better insight into early and medieval ages in India (as you will read in Units 3 and 4). Despite these attempts, due to limitations imposed by sources available at our disposal, our knowledge base for early societies shall further extend its boundaries with future archaeological and anthropological endeavors.

History without geography is incomplete. Geographical variations explain uneven pattern of cultural growth across various regions of the subcontinent. For instance, during second half of 3rd millennium BCE there were Mesolithic cultures in Gujarat and simultaneously, Neolithic culture was seen to have been prevalent in Deccan. Similarly, mature Harappan culture co-existed with these cultures at different levels. Thus, development of human cultures was not uniform across Indian subcontinent at any given point in time. There are three major physiographic divisions of Indian subcontinent:

1. Himalayan Uplands (Eastern, Western and Central),
2. Indo-Gangetic Plains, and
3. Peninsular India.

Fundamentals of ecology and geographical specificities have had a role to play in history of environment in Indian subcontinent. The subcontinent exhibits vast diversity in terms of geographical features – Himalayas (Shivalik range, Lesser Himalayas, Great Himalayas, Eastern Highlands), Plains of Northern India, Indian Plateau (Aravalli Range, Vindhya Range, Satpura Range, Chhattisgarh Plain, Chhota Nagpur Plateau and Other Sub-regions) and Coastal Lowlands (West Coastal Lowlands and East Coastal Lowlands) – and hence, varied ecological profile. This range of diversity (not static in nature) has had its influence not only in immediate vicinity but on the larger region of South Asia.

In this Unit we concern ourselves with beginning of the story of humans and their interaction with environment. Here, focus shall be on hunting-gathering and nomadic communities.

2.2 NATURE OF HISTORICAL SOURCES

Prehistoric period, also known as Prehistory, refers to the period of human evolution that lay before advent of written records extending back to at least 2.6 million years. Prehistory has been established as a branch of archaeology proper after landmark research done by scholars like:

a) Daniel Wilson (The Archaeology and Prehistoric Annals of Scotland, 1851),

b) Charles Darwin (On the Origin of Species by Means of Natural Selection, 1859), and

c) Sir John Lubbock (Prehistoric Times: As Illustrated by Ancient Remains and the Manners and Customs of Modern Savages, 1865).

These works documented worldwide available evidences pertaining to origin of mankind. Thereafter, considerable research has led to division of prehistory in following phases:

1. Paleolithic (comprising of Lower, Middle and Upper Paleolithic)
2. Mesolithic
3. Neolithic
4. Chalcolithic
5. Bronze Age
6. Iron Age

In order to understand prehistoric period material remains in form of stone tools, animal remains, biofacts and human fossils, among others, are present in each of these phases. Of late, researchers have termed transitory period between prehistory and earliest written records available as Protohistory. Protohistory is that period in human history whence written records were not available across all regions of the world. It refers to a region whose history was found being mentioned in written records of their neighboring regions. “Protohistoric period” is often also used to refer to human civilizations whose writing has not been deciphered so far. For instance, Harappan civilization.

HISTORY OF THE EARTH

Geologists have divided history of earth into four eras with respect to evolution of life forms:

i) Palaeozoic (Primary)

ii) Mesozoic (Secondary)

iii) Tertiary, and

iv) Quaternary

Third and fourth eras – Tertiary and Quaternary – together form Cenozoic era/Age of Mammals that began around 100 MYA . Cenozoic era is divided into seven epochs. Of these seven epochs the last two epochs i.e. Pleistocene and Holocene (recent period that began around 10,000 years ago in which we thrive today) are crucial from perspective of human evolution.

TIMELINE

Pliocene Period	5.3 to 2.6 MYA
Pleistocene Period	2.58 MYA to 10,000 BP
Holocene Period	10,000 BP to Present
Lower Palaeolithic Period/Old Stone Age	2.5 MYA to 100,000 BP
Middle Palaeolithic Period	250,000 to 40,000 BP
Upper Palaeolithic Period	40,000 to 12,000 BP
Mesolithic Period/Middle Stone Age	10,000 to 5,000 BP
Neolithic Period	c. 9,600 to 2,000 BCE

There are many branches such as social sciences, life sciences, medical sciences and fine arts that aid our knowledge of human past. In social sciences there are such two branches of study namely, Archaeology and Anthropology . Archaeology provides knowledge of human past through study of material remains or artefacts . In addition to providing insights into lives of humans during prehistoric period, archaeology also sheds light on human lives during all time-periods and across regions. There are many types of archaeological artefacts:

- Stone tools
- Durable pot fragments
- Bone fragments

- Cave paintings
- Coins
- Inscriptions
- Seals
- Sculptures
- Textiles
- Animal remains
- Human remains

In addition to these, there are non-portable artefacts which are known as features. These features further our understanding of various archaeological sites. Also, there are ecofacts or biofacts (natural/organic remains of plants and animals) that enable such an understanding. The story of human evolution began at that point in time when they started interacting with their surrounding environment and making changes therein. Cultural transformation goes back in time with ability of man to survive and make tools .

With appearance of genus Homo, little before two million years ago, there appeared alongside to him stone-tools. With technique of flaking i.e. chipping away of stone from a larger piece, variegated tools were made by humans that were used for different purposes. Peculiarity in tool-making techniques is what distinguishes various cultures. There are various theories propounded by archaeologists and historians that classify prehistoric cultures into:

a) early Palaeolithic as food-gathering stage,

b) later Palaeolithic as organized hunting and gathering stage, and

c) Neolithic as the food producing stage.

Describing the limitations of exploring lives of hunter-gatherers it has been correctly stated:

"Because of length of time involved and … what has survived is a plentitude of stone tools, often dislocated from their original context, and buried in secondary deposits … though some relatively undisturbed surface sites which could be usefully exploited for paleo-ecological reconstruction using present as a key to the past … Cultural and ecological reconstruction of early hunter-gatherer societies which follows has, therefore, to be seen against the background of these limitations."(Misra, 1989: 17)

2.3 HUNTER-GATHERERS

Early mode of sustenance for humans, like other animals, was hunting and gathering. This mode of sustenance is considered as first stage in social evolution of humankind. It occupied largest span of time when compared to miniscule span by subsequent stages in history of humanity. There were regional variations even among hunter-gatherers, some thriving in open air sites and others in caves/rock shelters. As mentioned above, primary source of evidence to study about lives of hunter-gatherers were stone-tool assemblages. Not only were a variety of material utilized for making these stone tools but multiple efforts were put in during this process.

2.3.1 Paleolithic/Stone Age Cultures

The term Paleolithic was coined by archaeologist John Lubbock in 1865 and it denotes the period of prehistory when humans began making stone-tools. Though evolution of humans from a biological point of view shall not be dealt in depth here (for details see Unit 2 of BHIC-102) but the fact needs to be mentioned that this evolution was just biological in nature. Environmental changes and accessibility to resources played a major role as well.

Earlier, study of relative stratigraphic contexts of different stone tool assemblages found in river-bank sediments determined dating of Lower Paleolithic. With coming of recent dating techniques such as Paleomagnetism, Potassium-Argon and Electron Spin Resonance (ESP) beginnings of Lower Paleolithic have been pushed beyond a million years ago. With lack of focus on human life content in early research more stress was laid upon collection of stone-tool assemblages.

Paleolithic culture is divided into three phases based on type of tools and nature of habitation, among other criteria. Continuous process of technological development was witnessed during these three phases. They begin with Lower Paleolithic Culture whence animal bones with cut marks from stone-tools have been found near human species Australopithecus Garhi. First stone chopper-chopping tools were found in Olduvai Gorge, Tanzania. Therefore, such variety of tools were known as Oldowan tools (simple, fragmented and chipped stones).

Figure 2.1: Oldowan Stone Chopper. Credit: José-Manuel Benito Álvarez, 2007. Source: Wikimedia Commons

(https://upload.wikimedia.org/wikipedia/commons/a/a7/Oldowan_tradition_chopper.jpg).

Based on progress in tool-making techniques production of large flakes to facilitate shaping of a hand-axe was a key feature of Acheulean technology used by Homo Erectus. These hand-axes were used as a tool and as a weapon, both. Along with hand-axe cleavers, scrapers and side-scrapers were other tools that were produced during this time-period. Addition of meat to diet of humans led to other social changes and development of a distinct tool kit. Subsistence pattern during this period constituted of:

a) hunting,

b) scavenging, and

c) gathering of plants.

When Homo Erectus moved out of Africa they sought to survive in Rift Valley-like similar environments. At Riwat, with similar environmental conditions in Islamabad, two million years old Oldowan tools have been found. To the east, nearby to Jhelum in Pabbi Hills, pebble-flake tools have been found dating back to 1.6-0.9 MYA. Furthermore, towards east similar pebble-flake tools were found in Jammu Shivaliks. Acheulian tool sites in India, as in different parts of the world, were located in a variety of landscape with source-sites for acquiring stone not always being located in the vicinity. A prolific Acheulian industry has been found in Karnataka in south India.

Generally, emergence of man in Indian subcontinent is traced back to Lower Paleolithic times. During this time-period two stone tool-making techniques have been recognized:

1) Sohanian

2) Acheulian

Sohanian culture (the term was first used by Hellmut De Terra in 1936), named after Soan valley in Pakistan, is the one found in Shivaliks, with tools consisting of:

a) choppers,

b) cores, and

c) flakes.

This culture was largely limited to Himalayan flank. Whereas, Acheulian tools consisted of:

a) hand-axes,

b) cleavers, and

c) scrapers.

This culture was not limited to any one region. Rather, it adapted to a variety of ecozones with microhabitats having diverse range of raw materials.

Middle Paleolithic Culture was associated with Neanderthals and a distinct tool kit composed of Mousterian tools made from:

a) Levallois technique, and

b) Disk core technique.

For both these techniques humans decided the core and removed pre-decided flakes with much precision and care. Composite tools were also made during this period. Simultaneous to making better tools, cultural beliefs in form of burials have been found for first time and better environmental and social adaptive strategies came to fore. At Hathnora in Narmada valley, Madhya Pradesh human skull representing an evolved Homo Erectus has been discovered.

Upper Paleolithic Culture adopted blade tool-making technology. Along with hunting-gathering Cro-Magnons came to practice fishing in present-day Europe. Many cultures across the world during this period of history made complex settlements and accomplished artistic expressions in form of cave art. According to H. Breuil (in Fagan, 2014) such artistic expressions in caves signified rituals performed for ensuring success of the hunt. Historians have interpreted Paleolithic art from perspective of functional view to pure aesthetics.

Thus, stone was most easily available natural resource to humans. Being an imperishable and tough material that has stood vagaries of time it has revealed much to us about hunting-gathering community. Exact time period whence humans realized the potential of stone for tool-making is not known but early tools manufactured are known with certainty – hand-axe and cleaver – along with many chopping tools. Various kinds of stones were utilized in tool-making process. For example, sandstone, quartzites and shales in addition to local variants available to communities. Different methods were adopted for making

stone-tools. Wasted stone was reprocessed and reutilized as general procedure employed in tool-making techniques.

In India, as mentioned above, the two major tool-making techniques were:

a) Soanian Cultural Tradition (chopper-chopping tool traditions)

b) Handaxe-Cleaver or Biface Assemblages (including Acheulian cultural tradition).

Main sites of early stone tool-making across the subcontinent are:

1) Attirampakkam and Gudiyam caves
2) Gundla-Brahmeshwaram region
3) Pennar valley, Tamil Nadu
4) Narmada valley, Central India
5) Nevasa in Godawari valley, Maharashtra
6) Soan valley, Pakistan

Map 2.1: Prehistoric Sites of Middle Krishna-Tungabhadra River Valley, South India. Credit: Adityamadhav83, 2013. Source: Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Pre_Historic_Mid_Krishna-Tungabhadra_Valley_sites.jpg).

2.3.2 Mesolithic Cultures

The term Mesolithic implies Middle Stone Age. It refers to period of human prehistory between Palaeolithic and Neolithic periods. With end of ice age, beginning of warmer weather conditions and increasing of sea level the period witnessed remarkable reduction in tool size. Diversification of food diet with inclusion of aquatic sources led to increase in population.

Figure 2.2: Geometric Microliths. Credit: Jose-Maneul Benito, 2014. Source: https://en.wikipedia.org/wiki/Microlith#India

Microlith or delicately made tools that are associated with this period were small in size, sharp and very beneficial. These tools were generally made in geometrical shapes (Fig. 2.2). River banks came to be occupied in more density than Upper Paleolithic Period. Humans became much more adaptive to newer climatic conditions. Shifting near river-banks led to more sedentary lifestyle and emergence of varied cultures across the world. Thus, a cultural shift was observed during this period in human history. In south India humans began making microliths some 35,000 years ago (Habib, 2010: 17). Sites with microlithic tools were not restricted to one particular locality or region; they were dispersed from east to deep south of India.

Although man continued to be in hunting-gathering stage of life a transformation in pattern of hunting was witnessed during this phase. Early rock art specimens are available to us from Mesolithic times that throw light on changing material and ecological factors. These rock paintings themselves marked significant cultural development in human-environmental interface. In addition to rock paintings burials have also been found at many sites. According to V. N. Misra:

"Hunting scenes at Bhimbetka and other caves and rock shelters show hunt of a variety of game with spears, bows and arrows, all tipped and barbed with microliths, hunting chasing (in one scene there are 80 individuals in the expedition) … Women are shown participating in cornering the game." (Misra, 1989: 26)

In this regard Allchin and Allchin have mentioned:

"Dancing scenes in caves of central India depict gatherings which must have included quite a number of families or bands. Occasions such as these are known to have provided hunter-gatherers in many parts of the world … with means of exchanging objects of interest and value and also of strengthening wider social ties beyond immediate family or local group." (Bridget and Raymond Allchin, 1982: 63)

Figure 2.3: Painting of Horned Boar, Rock Shelter 15, Bhimbetka, Madhya Pradesh. Credit: Bernard Gagnon, 2013. Source: https://en.wikipedia.org/wiki/File:Rock_Shelter_15,_Bhimbetka_02.jpg.

Figure 2.4: Dancing Painting, Bhimbetka. Credit: Nandanupadhyay, 2011. Source: https://en.wikipedia.org/wiki/File:Dancing_painting_at_Bhimbetka.jpg.

Figure 2.5: Ketavaram Rock Paintings, Kurnool District, Andhra Pradesh. Credit: Chivi1085, 2012. Source: Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Ketavaram_rock_paintings.JPG).

Main regions of Mesolithic cultures across the subcontinent are:

1) Western Rajasthan,
2) North Gujarat,
3) Mewar Plateau, Central India and Orissa,
4) Chhota Nagpur Plateau and Deccan Plateau,
5) Mumbai coast, Telangana Plateau, and
6) Eastern Ghats.

Misra has correctly mentioned,

"Mesolithic societies exploited a great diversity of habitats than their precursors".

With increasing density of Mesolithic localities earlier unoccupied regions came to be occupied such as:

a) Ganga valley,
b) Damodar valley,
c) Kerala coast, and
d) Southern Tamil Nadu coast.

Few Mesolithic sites overlapped with subsequent semi-urban Chalcolithic sites. For instance, at Bagor (Rajasthan) situated on east of Aravalli hills a shift is apparent over a period of time from hunting-gathering communities to crop-based agriculture practicing communities.

Sarai-Nahar Rai and Mahadaha are among largest prehistoric sites of central Ganges valley where archaeological excavations have yielded:

a) Microliths, and

b) human burials.

A total of 11 graves with 14 individuals and 28 graves with 30 individuals have been found at Sarai-Nahar Rai and Mahadaha respectively, with two double-burials at Mahadaha. These graves were broadly aligned either east-west or west-east. More than 50% of buried individuals at both the sites were male. Burial objects found during the course of excavations are indicative of social hierarchy. Other artefacts reveal different characteristics of microliths that include:

a) awls,

b) lunates,

c) retouched blades,

d) points,

e) trapezes, and

f) triangles.

Immediate vicinity of the area and kind of stone utilized for making these microliths is suggestive of an exchange network. Archaeological research has exposed evidence of seasonal migration and nomadism in low latitude regions. Some sites with rich aquatic resources potential, offering highly nutritious and reliable source of sustenance, were occupied on an almost year-round basis. With increasing population during Mesolithic period competition for occupying such sites must have led to assertion of claims to land by powerful groups with cemetery imagery forming part of ritual symbolism. All these developments must have provided these communities with a sense of group identity. Hence, social and cultural implications and connect thereto (as depicted in cave paintings).

Thus, we can surmise from above discussion that hunting-gathering communities from Paleolithic and Mesolithic times were not homogenous in nature. There were regional variations that existed between these communities, depending upon their inter-exchanges and specific environmental conditions.

Characteristic features of lives of hunter-gatherers encompassed a social life encircling family, local groups and relationships with the other members in their

community extending beyond their immediate family or local group. There have also been indications of a trading exchange network whence members from different hunting-gathering communities met at sites where high-quality raw material must have been available in abundance.

Hunter-gatherers used to chase animals in their vicinity for food with aid of stone-tools that evolved over a span of time. They moved to new areas once animal population depleted in a region. Due to paucity of clearly established evidence it is difficult to distinguish species of animals so hunted from fossil remains. Archeological evidence for shift from hunting to taming or domestication of animals and, with experience, their subsequent breeding is fragmentary in nature.

These communities are said to have begun domestication of animals around 20,000 years BP. Domesticated animals such as dog assisted these communities in hunting activities. By around 6000 BCE many regions of the world gave up hunting-gathering and began pursuing pastoral and farming activities. First evidence of domestication of animals in India comes from Adamgarh hill, Narmada valley.

2.4 NOMADIC COMMUNITIES

Sedentarism refers to sedentary way of life or settlement of people in a certain location often by undertaking agriculture as a mode of sustenance in that region. On the other hand, nomads are a group of people who roam from one place to another. The stage where nomadic groups are engaged in practice of pastoralism, is referred to as nomadic pastoralism. One of fundamental factors for adoption of nomadism is environmental conditions of a region.

As per A. M. Khazanov,

“Pastoral Nomadism is a food extracting economy where entire community is dependent on its herds for supply of food.”

In pastoral nomadism nomads used to maintain herds for their livelihood and migrated in search of pasture grounds. Since they required extensive pasturage for their herds they endured in groups of four to five families. They used to undertake seasonal migrations to places with suitable forage for their herds. In winters they used to stay near forests and in mountain valleys.

Some animals were very difficult to domesticate. Therefore, ones that were tender in behavior and could be captivated must have been domesticated. With continuous contact over a time-span a symbiotic relationship with humans must have evolved (Fagan, 2014). On the other hand, breeding of animals in captivity must have harnessed capability of humans for milk products and other by-products such as skins and leather. Concept of territorial ownership would have evolved due to search for available grasslands. In India only a very small proportion of land surface constitutes grasslands.

Although pastoralism is an auxiliary activity practiced by agriculturalists as a general matter of practice, human groups at few places adopted a nomadic lifestyle. In order to understand reasons that gave rise to phenomenon of pastoral nomadism in some regions of the world against adoption of settled agriculture a comparison between the two modes of sustenance shall suffice.

Nomadic communities were dependent upon land and water resources surrounding them, as did agriculturalists. But, interference and manipulation of these natural resources was not required by the former. Again, pastoralism was more individualistic in character. Ecological and seasonal factors, in absence of manipulation and interference, would have led to notion of territoriality making inroads in nomadic communities. Evidences of such nature have come to fore at many regions.

It was not necessary that nomadic communities were always in conflict with settled communities. Rather, their cereal requirements were fulfilled by the later communities. According to Romila Thapar most pastoralists were part of a system of exchange that brought them into contact with cultivators and others (Thapar, 2002: 57). Nomadic communities conveniently avoided labor-intensive work of growing food crops. In exchange of food crops regular supply of meat, wool and hide must have been provided to agriculturalists.

In addition to this exchange nomadic communities must have been encouraged to call on post-harvest agricultural fields serving the purpose of cleaning stubs on fields and providing them with manure. Nomadic communities would have also provided grazing services for livestock of settled communities, procuring agricultural fodder in exchange. Large population of cattle was maintained by nomadic communities in peninsular India during Neolithic period.

Cultural exchanges must have ensued between the two communities practicing different mode of sustenance. As correctly stated by Bhattacharya, cattle pen and ash mounds found at some sites indicate large number of herds kept in circular grazing. Such periodic migrations brought nomadic communities in contact with

settlements having higher culture. Through medium of this contact products of craftsmen found their way in history of human civilization (Bhattacharya, 1989: 166).

Hence, nomadic communities' family formed core organization and kinship network based on lineage must have guided their lives. Internal community confrontations might have occurred over management of pastures – their usage periodicity and seasonal rights. These communities were in co-existence with settled agricultural communities at many places and at times they themselves practiced seasonal agriculture.

PASTORAL CULTURES IN SOUTHERN DECCAN

Examples of communities from southern Deccan that practice pastoral-cum-agricultural strategy for sustenance, based entirely on herding of sheep/goat, come from:

1) Kuruba or Kuruva in Karnataka
2) Rayalaseema and Golla or Kuruva in Telangana

These semi-sedentary pastoral nomads cite nitikorata (scarcity of water) as reason of their temporary movement. One segment of Kuruvas are traders who deal in wool. Their traditional craft is weaving gongali (woolen blankets) – an all-pervasive element in material culture of herdsmen. This segment does practice agriculture but is not dependent on it for sustenance as much as other members from their own community. But, like historical times members of these communities are in constant interaction with agrarian society surrounding them.

Evidence of sheep/goat husbandry has been traced to Neolithic-Chalcolithic village settlements dating back to c. 3000 BCE. In fact, some of Kurnool cave paintings (Fig. 2.6) reveal cultural contacts between late Mesolithic hunting-gathering community and Neolithic-Chalcolithic farmers. Oral traditions of these and similar communities existent in different regions of the country indicate conflict they had with settled communities as an element of their pastoral experiences.

It was not until domestication of animals and plants intersected that evolution of humans entered its most productive stage. Wild varieties of early cultivated plants were restricted to smaller areas. Transition from hunting-gathering to agriculture was a long-drawn process that gave rise to complex social formations.

First evidence of domestication of cattle and agricultural society comes from Mehrgarh located in Baluchistan. Similar is the case of settlements in Indus river valley. With these complex societies emerged urbanization.

Until the emergence of Neolithic Revolution and agriculture, that marked a watershed in history of humankind and environmental history, humans were highly dependent upon environment for their sustenance. But now man could influence environment and its processes thereto to a great extent.

Not only did human dependence on stone tools underwent a change, in cultural realm changes were witnessed as well. For example, pottery began to appear from this point in time, permanent settlements developed meaningfully and early use of metal becomes clearly evident. Later, transition from river-bound agriculture to open-field based agriculture was affected with advent of iron. In next Unit (3) light would be shed over spread of agriculture within Indian subcontinent and role played by environment in this development.

Check Your Progress Exercise-1

1. Write short notes on the following:

a) Prehistory and Protohistory

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b) History of Earth

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c) Soanian cultural tradition

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d) Bhimbetka cave paintings

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2. What are the major sources pertaining to the study of hunter-gatherers? Elaborate on their nature and limitations.

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3. Discuss the Palaeolithic cultures associated with the hunting-gathering communities. List the major tool-making sites in the Indian subcontinent.

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4. What are the major characteristics associated with Mesolithic period in environmental history?

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5. Examine the lives of nomadic communities. Cite an example of one such community from south India with a dissimilar type of development.

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2.5 SUMMARY

All environmental changes were not necessarily caused by human agency, they still could have occurred abruptly and been destructive in nature. Others might have been gradual, occurring over long span of years. For instance, alterations in flora and fauna assemblages of a region, making it more habitable and conducive for human settlements. Settlement groupings were, thus, intertwined with changing ecological opportunities.

Though this does not imply that humans did not impact the environment they lived in. Rather, the impact humans exhibited on environment is not confined to contemporary times, as frequently assumed. Even if not on same scale, human practices such as hunting and pastoralism did make an impact on regional level whence few species must have died out due to overhunting and selective breeding respectively.

Recent archaeological researches have revealed environmental historical narratives indicating that human-environment relationship was not linear in early societies. Multiple factors played an important role in influencing this relationship, which in turn had an impact on both humans and environment.

In this Unit we have tried to explain variegated developments taking place in realm of environmental history as humans evolved with time. Beginning our discussion right from the nature of historical sources at our disposal in order to understand these very developments, we proceeded to analyze distinct phases experienced by hunting-gathering communities themselves. Next in the order, emphasis was laid on gradual shift from hunting-gathering to nomadic pastoralism and simultaneous emergence of settled communities practicing agriculture as major source of sustenance. Regional variations and socio-cultural advances throughout these stages of human and environmental interface are to be kept in mind for better understanding thereto. Towards the last, we concluded the Unit where agriculture made inroads in environmental history of humankind. This and related developments shall be taken up in next Unit.

2.6 KEY WORDS

Ecology: Scientific study of organisms and their relations with environment.

Flakes: Small and thin pieces of knapped stone used for making tools.

Knapping: Process of removal of flakes from core of a stone.

Mesolithic: Literally meaning middle stone age, it refers to the period of human prehistory between Palaeolithic and Neolithic periods.

Microlith: Small stone tool.

Neolithic: An archaeological period representing beginning of agriculture on the basis of more advanced ground and polished tools.

Palaeolithic: Period of prehistory marked by development of stone-tools and, therefore, called Old Stone Age (palaios = old, lithos = stone).

Palynology: Study of pollen grains and other spores as revealed during archaeological findings. Such a study facilitates analysis of environment in the past.

Pleistocene: Geological epoch from c.1.6 million years ago to 15,000 years ago.

Pre-history: Period of history for which there are no written records available and only source of knowledge is retrieved from archaeological remains.

Proto-history: Period that lies between prehistory and history (for which written records are available), whence a civilization/society had not yet progressed towards writing but other civilizations/societies simultaneously in existence recorded their existence in writing.

2.7 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress-1

1. a) See Section 2.1; b) See Information Box, Section 2.2; c) See Sub-section 2.3.1; d) See Sub-section 2.3.2.
2. See Sections 2.2 and 2.3
3. See Sub-section 2.3.1
4. See Sub-section 2.3.2
5. See Section 2.4

2.8 SUGGESTED READINGS

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2.9 INSTRUCTIONAL VIDEO RECOMENDATIONS

Environmental History: Introduction | CEC - UGC

https://www.youtube.com/watch?v=x1yBWvm9sNk

Origin of Humans

https://www.youtube.com/watch?v=SUfujVWcj5I

Stories from the Stone Age: The Human Adventure | History Documentary

https://in.video.search.yahoo.com/search/video?fr=spigot-nt-gcmac&p=prehistoric+tool+bbc+documentary#id=2&vid=9ce7c690f5fdd1c32adb23b72f71a334&action=click

Why Prehistoric Women Had Super-Strong Bones

https://video.nationalgeographic.com/video/171129-strong-prehistoric-women-vin-spd

Mystery of Life in the Paleolithic Age

https://www.youtube.com/watch?v=Tx9cuROQWlM