
UNIT 13 FOREST RESOURCES

Structure

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13.0 INTRODUCTION

Meaning of the term forest has been highly debated among the social scientists. Social interaction with the forest has been part of human existence since beginning as hunter-gatherers, agricultural societies and even the industrial society has been having contact with the forest in some form. It has been a dilemma for the social scientists to define the meaning of forest as the uses of forest have been culture specific and therefore the perception of forest has been different in different cultures. The general historical understanding of forest has been that of an area that is wooded, is the habitat of wild animals and many species of birds and reptiles and is not subjected to the laws of civility. This understanding extends further to also include the notion that many articles of use to man are grown in the forest naturally and have to be obtained from there. It is with regard to these articles and their extraction that some variance gets induced which is culture specific. Notwithstanding this variance, forest is imagined in history as a repository of many natural resources that have to be subjected to varying resource-use practices.

This unit attempts to make you aware of the changing notion of forest as a resource. Forests have been examined here with respect to various raw materials they supplied and at another plain have also been seen as providing an alternative to the agrarian landscape. Eversince the emergence of agriculture based monarchical political structures from sixth century BC, there is evidence for the coexistence of forest dwellers as another distinct socio-political entity. The monarchical political formations and forest dwellers shared a dichotic relationship where both were dependent on each-other not simply in terms of economic gains but also for the identity formations. Forests were visualised as places of safe

refuge by the recalcitrant peasantry and other social elements raising a voice of dissent. With the expansion of agriculture there have also been disputes over the proprietary claims, though these disputes assume noticeable features only with the advent of colonial state in the 18th-19th centuries.

We take forest as an entity and discuss issues like an understanding of the forest, its treatment in history, the present day coverage of the forest and different levels at which humans have interacted with the forest. The underlying consideration in this discussion shall be the resource-potential of forest and the practices adopted for its use.

13.1 UNDERSTANDING THE FOREST

Evidently there is a complexity related with the historical understanding of the forest as a concept. In the same time span forests were understood differently by people belonging to different cultures. It is very difficult to provide universally applicable set of characteristics of forest. The term *jungle* used to denote forest in contemporary India is problematic. Michal R. Dove has argued that, “in contemporary Urdu, *jungle* is defined as ‘a wood; a forest; a jungle’. In classic Sanskrit, the cognate term, *jangala* is defined as arid, sparingly grown with trees and plants. There is major difference in meaning between the two terms: the latter denotes an open, arid savanna stage of vegetation, while the former denotes a closed, tree dominated cover (with unspecified aridity).” Francis Zimmermann in the preface of his book *Jungle and the Aroma of Meats*, writes, “An extraordinary misunderstanding has overtaken the history of this word (jungle). *Jangala* in Sanskrit meant the ‘dry lands’, what geographers would call ‘open’ vegetation cover, but in the eighteenth century the Hindi *jangal* and Anglo-Indian *jungle* came to denote the exact opposite, ‘tangled thickets’, a luxuriant growth of grasses and lianas. Let us agree to abandon that misunderstanding for the time being” (p. vii). We must emphasise that in this unit we deal with the traditional meaning of the term forest in English language as described above. Forest has been attributed a rawness where rules of civil society do not apply. The term *jungle-raj* seems to refer to this law-lessness. This attribute of the forest perhaps originated in the context of relatively stable production of food in the early-agricultural societies. The agricultural societies were glorified and non-agricultural social formations devalued.

The characteristics of the forest are best understood in terms of man-forest relationship in history. Recent past has shown increasing incongruity in the man-forest relationship. We shall have to see if in a more remote past the situation was any different. However, in order to give a simple coherent picture, intricate and micro-regional variations shall be given relatively less attention. We would possibly benefit if we decide a few major indicators guiding the relationship between man and forest. The foremost indicator is the user-resource arrangement put in place by humans vis-à-vis forest resources. The next significant pointer is the level of technology available for operationalising this user-resource

arrangement. The final pointer is the availability of alternative resources, say agricultural resources as alternative to forest resources.

13.2 FOREST COVERAGE

Complex physiographic, climatic and pedagogical conditions have given rise to as many as 30,000 species of plants in the country ranging from thorny bushes (Rajasthan etc.) to evergreen forests (Assam, etc.). Forests are dominant natural vegetal cover in India. The present day distribution of forest is very uneven ranging almost from nothing in some regions (Delhi 1.5%, Rajasthan 2.5%, Punjab 3%) to nearly one-third in other regions (Himachal Pradesh 33%, Madhya Pradesh 31%, Kerala 28%). Exception-ally high shares are exhibited by Tripura (63%) and the Andaman-Nicobar Islands. This distribution can hardly reflect the true nature of the original cover in the past; much of the forest cover, especially in the Great Plains, has been removed as a consequence of Human occupance.

The climate, land, and species singly or in combinations, define the forest types. These have been described in Unit 2 of Block 1 at length. Indian forests species, do well in certain environments. There are however some species such as bamboo, cane, reeds, neem, pipal, banyan, tamarind, palm etc., which grow all over the country.

Grasslands, on a sizeable scale, no longer exist in India. Much of the surface area (about 59%) is either under cultivation or under forest cover. The pastures with scrubs and grasses are found in patches usually in the arid to sub-humid areas of the country. Like forests, grasslands also have a variation in accordance with the natural environment and soil. In the western margin of Uttar Pradesh, the sub-humid Madhya Pradesh, and Andhra Ghats, etc., are found patches of coarse grasses, much more sensitive to over-grazing. Sandier and humid soils are covered with poor quality grasses and scrubs. Sub-tropical Himalaya, above 1400 m has considerable stretches of mostly induced grasslands from western Himalaya to the Burma border. (R.L. Singh, ed., *India: A Regional Geography*, National Geographic Society of India, Varanasi, 1971, reprint 2001).

13.3 FOREST IN HISTORY

The earliest references of human settlement in India can be traced back to the culture of 2-million years old (approximately) stone choppers. Two technological traditions are known from this stage: the Sohanian and Acheulian. Sohanian culture was confined to Siwaliks and Acheulian spread from Siwalik Hills in the north to near Madras in the south. Acheulian sites are particularly densely populated and richer in Central India and the South Eastern Ghats. Both these regions received adequate rainfall, had a thick vegetation cover, and were rich in wild plants and animal food resources. The only areas devoid of early human settlement were tropical forests. Acheulian tool assemblage comprises chopping

tools, polyhedrons, discoids, hand-axes, cleavers, scrappers, denticulates, notches, flakes and blades. Though our knowledge of the exact functions of most of these tools at this stage is very imperfect, it is fair to assume that they served a variety of functions like hunting, butchering, digging of roots and tubers, processing of plants and making of wooden tools and weapons. In this arrangement human dependence on forest resources is clearly visible. Moreover this dependence lasted for a considerably long time. The subsequent periods of cultural development do not match with this early stage in terms of the time span occupied by them. The man-forest relationship based on a heavy sustenance of man on forest resources was the hallmark of this early phase. There were several sub-stages in this relationship which were all located in an evolutionary framework and about which detailed information has been read by you in Units 5 and 6 of Block 2.

The next important phase of human settlement in India is termed as Harappan civilisation. This civilisation emerged basically in the semi-arid regions of North-Western India and in the absence of written records we have to depend solely on the archaeological information for this phase. In fairness to the efforts made by a galaxy of eminent archaeologists though, it must be said that material evidence unearthed for Harappa civilization provides significant clues to man-forest relationship for this phase. It is suggested that the size of Harappan urban settlements would have required wood that could only be supplied by a forested region not far from the sites. The requirement of wood as fuel to support the firing of bricks, a conspicuous building material of Harappa culture, is another supporting argument for the existence of forest and the dependence of the inhabitants of Harappan settlements on the forest resources. A quick inventory of the objects in which wood was used would read as below:

- 1 Toys made of wood;
- 1 Wood handles for copper-tools such as sickles, axes and adzes;
- 1 Wooden carts, their assembly components and their wheels;
- 1 Wooden boats and their sails and oars;
- 1 Potter's wheel;
- 1 Wooden beams in roofs and wooden beams in door openings and in windows. (Cf. Irfan Habib, *The Indus Civilization, People's History of India* 2, New Delhi, 2002, pp. 30-33).

Moreover the animals depicted on Harappan stamp seals such as elephants, tigers and rhinoceroses require forest as their habitat. Borrowing comparisons from other contemporary bronze age civilizations, it seems certain that forest resources must have been in good demand. A significant point for us to note in this regard is that the borders of the Indus zone towards the east were covered with dense forests which

the copper wielding cultures such as the Harappans were in no position to cut and clear. Perhaps these eastern regions were heavy rainfall areas and had no significant human habitation. The forests on the fringes would therefore be available for exploitation of forests resources (Cf. Irfan Habib & Faiz Habib, 'The Geography and Economy of the Indus Civilization' in *Proceedings of Indian History Congress*, 1987, p. 61).

The next significant period is the one occupied by the Vedic civilization. Vedic sources portray a close relationship between man and forest. Malamoud suggests: "The forest lies on the village's horizon and is, in a certain sense, integrated into village life. ... Yet, this fusion of village and forest is so beautiful in the eyes of the Indian authors, and fundamentally so unrealistic, that they exclude it, at times, from the realm of the possible in our present age of iron, declaring that it can only be found in a distant past, in the wonderful age of the *rishis*, of those inspired seers who received the Vedic revelations" (Charles Malamoud, *Cooking the World: Ritual & Thought in Ancient India*, New Delhi, 1996.). However, there has been a problem with the presentation of this kind of harmonious relationship between man and forest. Indologists, working on a general conceptual level, have shown that the dichotomy of *grama* (village) and *aranya* (forest) is omnipresent in the Vedic literature. It is discussed as a duality between wilderness and civilization and has the basic, fundamental opposition. According to this concept, forest always remains *outside*, distanced and more or less detached from the sphere of human praxis. Malamoud and Sprockhoff argue that there is evidence that the interpretation of *vana* and *aranya* as synonyms can be found only in the late Vedic and post-Vedic literature. Both draw attention to the etymological origins of *vana* and *aranya* and their usage in the earlier Vedic literature. They come to the conclusion that both terms have different connotations. *Aranya*, translated as wilderness, desert, sometimes also as forest, is linked etymologically with alien, distant; it is the dangerous, the frightening space, inhabited by demons, wild animals, but also by brigands, it is the space which one tries to avoid, it is linked with death. *Aranya* and *grama* appear as reciprocally exclusive categories. Malamoud and Sprockhoff take up another conceptual pair, namely that of *vana* (forest) and *ksetra* (fields, inhabited space), often *vana* and *grama*. *Vana* and *ksetra* interact with each other and this interaction is seen as positive. *Vana* is the forest which supplies villagers with timber for house construction and tools; here herbs and wild plants are found, single trees may get special ritual significance as *vanaspati*. But the boundaries between *vana* and *aranya* are fluid; the same space, which was seen as *aranya*, as wilderness in previous times may become *vana*, utilizable forest, or land for cultivation (Antje Linkenbach, 'Forests in Garhwal etc.' in *Social Construction of Indian forests*, ed. Roger Jeffery p.86-87)

The period from 500 BC to 300 AD saw large scale colonization of fertile forest lands both in the northern India and the river valley areas (for example Krishna, Godavari, Cauvery, Vaigai) in the peninsular India.

Greater colonization meant greater availability of surplus. Thus tribal chiefdoms started giving way to large states; Mauryas and Kushanas in northern India, the Chalukyas and Sangam Cholas in south India. The ground for further exploitation of forest resources was made ready in the logic of the empire building exercise. Of course trade was also coming up in a big way and the ships and boats had to be built out of the forest wood. Elephants assumed significance, and elephant forests started coming up. The number of towns increased and the houses in towns began to use wood on a greater scale. Moreover, superior timber had to be used for construction of furniture, carts, chariots, wooden bridges etc. During the Mauryan period, the concept of 'hunting reserves' also came up, as hunting became a recreational activity. Chanakya says that Brahmanas should be provided forests for plantations, for religious learning and for performance of penance. As we shall see in Block 5, many philosophical treatises were written in the forests. Upanishads and Aranyakas were the major ones. The importance of forests is further borne out by the treatment it receives in Kautilya's *Arthashastra*. Two important forest produce noted in the text are sandal-wood and the aloe-wood, obtained from the forested regions of Kamarupa, in Assam (Cf. Irfan Habib & Faiz Habib, 'The Economic Map of India, AD 1-300' in *Proceedings of Indian History Congress*, 1986, Vol 2, p. 149). Though Kautilya's treatise mainly pertains to the Mauryan period the principles enunciated in it were accepted as the bed-rock of further writings on the subject. A well-known scholar (of ninth century AD) Kamandaka who wrote *Nitisara* acknowledges the importance of *Arthashastra*. After the Mauryas, the other important empire builders were the Guptas. But during the Gupta times and more particularly later Gupta times economy began to decline. There was a manifest slump in trade and towns and in the use of monetary system. Inscriptions belonging to the period indicate a trend towards naturalization of the economy and thus greater pressure on land and consequently on the forest. Amidst all these developments, the forest question lost its prominence and in the later sources lesser attention was given to the forests. It is however pointed out by some scholars that during Harshavardhan's time (seventh century AD) agriculture and forestry had been in a prosperous condition. For this period we have an important account, by Hsuan Tsang, the Chinese pilgrim who travelled in India and the border lands between 629-45 AD. He records the following regions as forested areas:

- 1 Kosambi, infested with wild elephants;
- 1 Monghyr, a forest between Magadha and this region;
- 1 Kalinga, forest between it and Kongeda having wild elephants;
- 1 Andhra, forest between it and South Kosala;
- 1 Chole, wild jungle;

- ¹ Malaya Mountains, giving Sandalwood and Camphor. (Cf. Irfan Habib & Faiz Habib, 'Economic Map of India, AD 500-800' in *Proceedings of Indian History Congress*, 2001, pp. 105-110).

The Delhi Sultanate phase saw a change in the situation. The total population (both human and livestock) increased, as did the number of cities and towns. Consequently urban population also increased. All this led to a proportionate quantitative increase in the demand for fuel wood, fruits, food, fodder etc. Demand for quality timber for construction of boats, bridges, houses, carts etc. also went up considerably. In addition to all this, the concept of 'hunting reserves' for the nobility came into vogue. There are also instances of large scale clearing of the forests in the Doab region such as under Balban. This was done to destroy brigandages in the region inhabited mostly by the Mewatis.

As we come to Mughal India the information increases, in terms of quantity as well as quality. Most of this information has been plotted by Irfan Habib in his *Atlas of the Mughal Empire* (New Delhi, 1982). It is thus convenient to get details about forest resources at an all-India scale and at regional scale. The main forested areas in Mughal India were:

- ¹ The Northern Mountains or the Himalaya;
- ¹ Foot-hills/*terai* region of the Himalaya;
- ¹ The Central Indian Forests (between Narmada-Son rivers towards north to the eastern coastline between Narsapur and Balasore);
- ¹ The Ghat Range (along West coast);
- ¹ The Aloe-Wood Forest (in north-east);
- ¹ Brahmaputra Forest; and
- ¹ Lac Forests (in the Ganga delta).

Among the forest resources there was a big demand for timber particularly the superior variety. Timber was required for construction of buildings, furniture, bridges, boats as well as ships used in internal and external trade. There are ample references to fleet of boats/ships owned by merchants and some members of the nobility and royalty. Forests served another utilitarian purpose; the forest produce formed an important component of the non-agrarian production during the Mughal period. The production and use of many forest products like timber, fruits, roots, fibres, barks, resins, herbs, lac, babul tree for leather tanning, gumlac (red dye, sealing wax), and mulberry silk has been recorded in the sources.

Forest Produce (as recorded in *Atlas of the Mughal Empire*)

1. *Punjab*: Sal timber, Spikenard (aromatic plant used in an ointment). Gum lac, Turpentine, Indian Jalap (tuberous roots used in a purgative drug), Chebulic Myrobalans (astringent fruit), Costus root.
2. *Gujarat*: Teak timber, Gum lac, Aloe-wood, Honey, Chebulic Myrobalans.
3. *Uttar Pradesh*: Sal timber, Ebony, Bamboo.
4. *Central India*: Sandal-wood.
5. *Bihar*: Bamboo, Long-pepper, Sun lac, Musk.
6. *Bengal*: Timber for masts and boats, Aloe-wood, China-root (*Simlax gabra*, not *Smilax china*), Gum lac, Beeswax.
7. *Orissa*: Timber, Gum lac, Beeswax.
8. *Assam*: Aloe-wood, Gum lac, Musk.
9. *Deccan (West)*: Teak timber, Sandal-wood, Gum lac.
10. *Deccan (East)*: Timber for ship-building, Gum lac, Bezoar Stone, Beeswax.
11. *South India*: Teak timber, Timber (Anjeli wood), Sandal-wood, Bamboo, Cinnamon, Cassia Fistula (Senna leaves), Nux Vomica (herb), Myrobalans, Lac, Bees wax.

It is evident that on the whole, the forest cover did not suffer any major problem of depletion. It is true that royal patronage as under the Mauryas, was absent but there were other factors, which kept things under control. Though the demand for forest produce increased but the land- man ratio was still very favorable. Land was abundantly available and as such the problem of converting forest land into agricultural land was not so strong which was the main reason for loss of forest. Added to this was the factor of natural regeneration of the forests, which kept the larger forest cover under more or less 'normal conditions'.

13.4 LEVELS OF INTERACTION

Forest-man interaction should be visualised in the context of the social relevance of the forest. The process of evolution from the simple social formations of 'hunting-gathering' to the complex social formations of 'industrial society' has influenced the level of interaction between man and forest. It is difficult to define this kind of interaction because there are tremendous regional variations in the physical nature of forests. However, we will attempt a broad generalisation to elucidate the intricacies of the social interaction with forests.

13.4.1 Sole Provider

The earliest stage of social formation has been termed as 'hunting-gathering' where to a great extent the physical needs of the humans were catered to by the forest resources. During this phase the forests were the sole provider of sustenance to humans. 'Hunter-Gatherers' survived by

exploiting resources of the forest but in the process exerted little control over their natural environment. They were omnivorous; the proportion of meat, plant food, etc varying from region to region. In the absence of tools human dependence on animal meat was limited, initially to scavenging and only gradually to hunting. All along this phase human dependence on fruit and other plant food remained quite high.

Human dependence on forest witnessed a change with the introduction of tools, initially of stones (generally known as Palaeolithic tools) but soon also made of wood, one of the most versatile raw materials known to humanity. Unfortunately, timber rarely survives in the archaeological records and we are left mostly with stone tools as evidence. Introduction of flakes, choppers, and later on axes influenced the human-forest interaction. They were multipurpose artifacts, used for grubbing up roots, working wood, scraping skins, and especially skinning and butchering large and small game. By analysing the geographical location of the sites of tool-industry scholars have suggested that the hand axe was in fact a form of primitive discus used primarily for hunting purposes.

Forest also provided shelter to the humans. Traditionally it were trees that provided shelter though with the growth of terrestrial adaptation rock shelters became an alternative. Even today we have evidences for this kind of existence. Varied ecological niches in these ecosystems are exploited today by traditional ethnic groups (tribes/adivasis) whose economies are geared to hunting and gathering, riverine fishing, marine fishing and shifting cultivation. Typical examples are those known as Van Vagri (Thar), Birhor (Chota Nagpur), Chenchu, Yanadi, Konda, Reddi, Koya, Voda Baliji (Eastern Ghats), Kadars (Kerala), Baiga, Gond, Muria, (Madhya Pradesh), Kandh, Savara, Gadaba, Juang (Orissa), and Walri and Koli (Maharashtra). All these ethnic groups, pursue their traditional modes of food procurement notwithstanding the fact that they are now integrated into village economies. Since big game is now both scarce and its hunting is prohibited, they hunt small game and birds, and collect insects and honey and wild plant foods. The fact that Stone Age occupations occur within the tribal habitats indicates that the game and other forest foods now exploited must have formed the subsistence base on a much larger scale. [V.N. Misra, 'Stone Age India: An Ecological Perspective', in *Man and Environment* XIV (I)-1989].

13.4.2 Ancillary Product

With the development of agriculture as source for food, the relationship between man and forest underwent a drastic change. For the agricultural societies, forest assumed secondary position. However, one should be careful to realise that the shift to agriculture was not a quick process neither a smooth one. Initially agriculture was a risky proposition and forest resources provided sustenance in case of crop failure. At the same time the possibilities of surplus generation and accumulation led to fresh demand on forest resources. Earlier forest resources were required basically for consumption purposes and possibilities of storage were limited. The growing shift towards agriculture necessitated sedentary life style, that

too usually away from the rock-shelters and other natural sheds. It forced humans to develop dwellings for themselves, for which the easiest procurable raw material had been wood, i.e., forest resource. Another important feature of settled agriculture was the emergence of stratified society. Trade had been another marked feature of the agriculture society. All these factors supported greater demand for the forest resources.

Growth of agriculture, sedentary life-style, and greater possibilities of surplus generation increased the demand for energy. At one level the demand for energy was met by utilising the draught power of animals and on the other hand it increased the demand for fuel-wood. Both the situations demanded greater utilisation of forest resources, as fuel-wood and as fodder. The dry leaves from the forest were used as manure for agriculture. As far as food was concerned, with the growth of agriculture, forest products were ascribed secondary position as discussed above. However, forests remained sole supplier of numerous ancillary products. Another essential requirement was that of wax for candles which could be procured only from the forests. Similarly forest gave gum, resin, lac, honey, rubber and querns which were used by humans in many day to day activities.

Wood was one forest product that was extensively used as raw material for housing, furniture, agricultural tools, musical instruments, and numerous other handicrafts. The necessity of wood was greater in the absence of technological support otherwise heavy materials like stone or brick could be used for raising the roofs of the building/ house in a cost effective manner. Similarly, wood was extensively used to provide beam for the construction of windows, doors and other openings. Wood was also required for construction of bridges, carts, and chariots. Most of the tools used in the agriculture sector were made of wood. Good quality wood was required for the preparation of plough and other materials.

13.5 CONSERVATION PRACTICES

The importance of timber, as discussed above, had grown enormously. Wood had multiple usages ranging from use as the basic source of energy, to a key ingredient of furniture and tools, particularly agricultural tools. As the civilization progressed the need to conserve such an important and critical forest resource became more and more evident. Moreover the forest was also giving many other products which too needed to be conserved and judiciously used. The policies adopted by different states often reveal their anxiety as also the measures initiated in this regard. We shall deal with the issue of conservation at length in Block 5. Here we are giving some interesting conservation episodes from the region of Rajasthan which have mantled the robe of cultural practice in the region. Some of the well recorded episodes of this practice are recounted below.

The attitude towards tree conservation is reiterated in the following anecdote written by Nainsi, in the Seventeenth century. King Maldevji got *babool* trees of Merta cut. In response to this, and by way of revenge,

Viram Deo said that he would cut the mango trees of Jodhpur. However, people advised him not to do so as trees were to be protected. Hence he chipped a small branch of Mango tree symbolising that he had settled the account. In this anecdote, the chief is restrained from cutting trees by his advisors. The latter probably realised that denudation of trees would cause irreparable damage.

Another important example in this regard was the representation of *khejari* tree in the official flag of Bikaner kingdom in the Seventeenth century. Flags in medieval India generally depicted animals- lion in the case of the Mughals. The representation of the *khejri* was unusual. What is striking is that even to this day it plays a critical role in sustaining agriculture and animal husbandry. Similarly, concern for vegetation was visible in the construction of *bund* Jaitsar, near Jaisalmer. Maha-Rawal Jaitsingh sponsored the construction, in 1570 VS. (AD 1513) to capture the runoff water from the adjoining northern hills. The construction of the *bund*/embankment created a reservoir. This in turn was used to supply water to the other side where a garden was planted. A small canal with sluices was also provided to carry and control the water from the *bund* to the garden. This reservoir could contain water for four to five months only. However, the moisture retained by the ground was sufficient to sustain the garden round the year. Moreover, the dry bed of reservoir was utilised to cultivate *unali/rabi* crop (winter season crop).

The practice of punishments for cutting of trees was also prevalent there. It should be seen in the context of regional environment and socio-religious practices. The social concern for environment in medieval Rajasthan manifested itself in various forms. The attitude towards nature is apparent in the teachings of sects like Bishnois. The founder of Bishnoi sect, Jhambhoji (AD 1451-1536) had prescribed twenty-nine rules for his followers. Most of these were related to keeping harmony with the environment like prohibition on cutting green trees and animal slaughter. It is said that the followers of Jambhoji were known as Bishnoi (*bish* is twenty and *noi* means nine) because it means twenty-nine in vernacular dialects of Rajasthani language. One plausible explanation is that the economy primarily sustained on animal husbandry. Hence any slaughter, even during droughts, would reduce the means of livelihood. Similarly, the cutting of green trees was prohibited, as it would reduce the availability of green fodder for the animals. It became more important in this region where natural vegetation was very thin and sparse. Jambhoji's teachings, congruent with the interests of the common man, became immensely popular. The number of followers increased manifold but primarily in the arid regions of Bikaner and Jodhpur. His sect became so influential that the rulers of these states were forced to respect his sermons. Maharaja Ajit Singh issued a *parwana*- official order, restraining cutting of green trees in 1754 VS (AD 1698). Anup Singh, King of Bikaner prohibited cutting of green trees in the villages dominated by Bishnois in 1752 VS (AD 1696). Similarly, in 1878 VS (AD 1821), Man Singh the king of Jodhpur issued a similar order with respect to *khejari* tree.

The founder of the Bishnoi sect was not alone in attempting to influence conduct towards living beings via religious and ethical transformation. Another popular saint, Jasnathji (AD 1482-1506) who was a contemporary of Jhambhoji also endorsed such a viewpoint. His followers were known as Jasnathi. Like his contemporary saint, Jasnath ji was also aware of the importance of preservation of environment. In his teachings tree of *jal* had been accorded special protection, which was natural vegetation of the region. These teachings became popular in the region, which had traditionally sustained goat and sheep rearing. Conservation of green vegetation and prohibition of slaughter of animals seemed to be attempts towards conservation of their livelihood.

In Rajasthan, especially in the central and western parts, the vegetation was very sparse; there were very few forests. In such a situation it was necessary to protect the already existing ones with care. Lalchand complained to Amber ruler on *Jeth Vadi* 1, 1756 VS (AD 1699) about tree felling in his *pargana* (Sawai Jaipur) and expected punishment for the culprit. In village Saithal, *pargana* Bahatri, in 1745 VS (AD 1689) a person was punished for cutting a *neem* tree. Similar cases were reported from numerous villages and *Qasbas*. *Patel* (headman) of village Kharkhura was punished in 1780 VS. (AD 1724) for the same crime. It appears that trees could be cut only with the permission of state authorities. The *Patel* of village Kundala, *Pargana* Mariana was punished in 1789 VS. (AD 1733) for the unauthorised cutting of tree in his area. The term unauthorised (*bin hokum neem ka dala kate*) cutting of tree has been used in a context that implies permissions were granted for the purpose. This also suggests control enjoyed by the state with respect to vegetation.

Neem having tremendous medicinal properties, needed protection. Being a medicinal plant, it was considered inauspicious to cut *neem*, thus, punishment. Similarly, cutting the tree of *peepal* has been reported from village Chandpur *pargana* Bhartri in 1775 VS. (AD 1719). Ritually, the tree of *Bad* was considered auspicious, hence attempts to axe the tree were punished by rulers as reported from village Chauroti, *pargana* Hindaun in 1785 VS (AD 1729). Moreover the trees of *peepal* and *Bad* were worshipped by women of the royal household. Thus, perhaps religious considerations were an added justification for the enactment of punishment.

Alongside, we have evidence of punishments for cutting *Jamun* (*Syzygium cumini*) tree from village Nadu *pargana* Bahatri in 1774 VS. (AD 1718). *Babool* was a tree adapted to the specific conditions of Rajasthan and it needed little or no care in its rearing. In the arid part, *babool* was the dominant tree and provided food for the camels. Considering the economic and ecological value of *babool*, it was considered necessary to punish those who tried to cut it.

Furthermore, it is to be noted that even unauthorised cutting of grass was punished. Our documents clearly point out that there were reserved grazing lands. The cutting of grass grown even on the hills and forests was punished. Meadows were important for the military as cattle and horses used in warfare needed fodder. The primary source of draught and transportation was cattle and their need for pasture played an important role in state policies. State used to actively procure the grass and maintain a reserve

stock. for the cavalry- horse, camels and elephants- the mainstay of their army.

13.6 SUMMARY

The unit stresses the fact that the forest is natural growth of vegetation not requiring human intervention. The variety of vegetation is: to strength and testimony of its originality. Literature has been important source for the reconstruction of forest in early as well as medieval times in India. The unit has documented the extent of the forest chronologically to map the forest coverage and at the same time it also dwells upon the popular renditions of forest. The unit also examines various social practices which encouraged the conservation of the forests. The role of social customs, practices and taboos are important areas of exploration to situate and comprehend the forest. The unit also looks at the various issues related with the claims over the forest produce. The notion of forests as common property resource and claims laid by state portrays a complex picture.

Forest as a resource has been used by humans ever since the origins of humans. Man-forest relationship has for a large part of human history been one where human dependence on forest resources for sustenance has been near total. The situation changed only with the emergence of agriculture. Hereafter the food resources were mostly obtained from cultivation that was not dependent on the forest. A complete independence from the forest was however not yet feasible. Several products used by humans in daily life were even now produced and obtained from the forest. The growth of civilizations however increased the demand of wood and forest again became one of the most important resources for human societies.

13.7 EXERCISES

- 1) Write an essay on the changing perception of forest in history.
- 2) Discuss the various levels of interaction between man and forest.
- 3) Write a note on the reasons for tree conservation in Rajasthan.

13.8 SUGGESTED READING

Irfan Habib, *The Indus Civilization, People's History of India 2*, New Delhi, 2002.

Irfan Habib, *An Atlas of the Mughal Empire*, New Delhi, 1987.

Briget & Raymond Allchin, *The Birth of Indian Civilization*, Penguin, 1968.

Romila Thapar, *Early India*, Allen Lane, 2002.

Francis Zimmerman, *The Jungle and the Aroma of Meats*, London, 1987.