Lesson - 8

Natural Vegetation of Bharat

Bharat is a large country with variations of temperature, rainfall, soils, topographical features, winds and the patterns of sunlight. Therefore, the presence of a variety of vegetation in Bharat is natural. The main types of forests found in Bharat are (Fig. 8.1) –

1. Evergreen Forests

These are found in the areas having an average rainfall exceeding 200 cms. and an annual average temperature of 24°C. There are three important areas of this category - (1) Western slopes of the Western Ghats (2) Andman-Nicobar Islands and (3) West Bengal, Assam, Meghalaya and Tarai regions of north-eastern Bharat. Rubber, Mahogany, Abony, Iron Wood, Mango, Palm etc. are the important trees in these forests. Bamboos and many kinds of creepers also grow in these areas. Variety of dense trees of different heights grow in these regions. Usually these trees attain the height of 30 to 45 metres. These trees have umbrella like canopy. In many of these forest areas, the growth is so dense that even sunlight cannot reach upto the ground.

The utilization of these forests is slow due to many reasons -

(1) The trees have hard wood.

(2) The trees are not gregarious. It means that in any region a large variety of trees are found. This renders the commercial exploitation of the forests difficult, because for lumbering of a particular variety of wood, one has to search it in a large area.

(3) Lumbering is difficult due to denseness of trees, creepers and small bushes.

(4) Means of transportation are not developed in these regions because of the density of forests and rugged topography of mountains. Hence, their economic use is very limited.

2. Deciduous or Monsoon Forests

In these forests, trees shed there leaves in dry season. These forests are found in the areas where rainfall averages between 100 to 200 cms. There are four main areas of these forests - (1) Lower slopes of the northern mountainous region (2) Vindhyachal and Satpura ranges, Chhota Nagpur plateau and the hills of Assam, (3) Southern section of Eastern Ghats and (4) Leeward eastern slopes of the Western Ghats. The trees in these forests are not as dense and as high compared with the trees of evergreen forests. These forests include Sal, Teak (Sagwan), Neem, Sandlewood, Rosewood (Sheesham), Abony, Mango, Bamboos, etc. Their wood is not very hard, therefore, these trees can be cut easily. Their wood is durable, therefore, it is used in making railway sleepers, boats & ships and furniture. There had been rapid exploitation of these forests due to developed means of transportation in their areas.

3. Dry Forests

These forests are found in the areas having rainfall average of 50 to 100 cms. annually. Forests of this category are mainly found in south-western Punjab, Haryana, eastern Rajasthan and in south-western Uttar Pradesh. The major trees of this forest are Bargad, Keekar, Babool, Neem, Mango, Mahua, Kareel, Khejra etc. These trees are characterised by having long roots. The trees are stunted because of

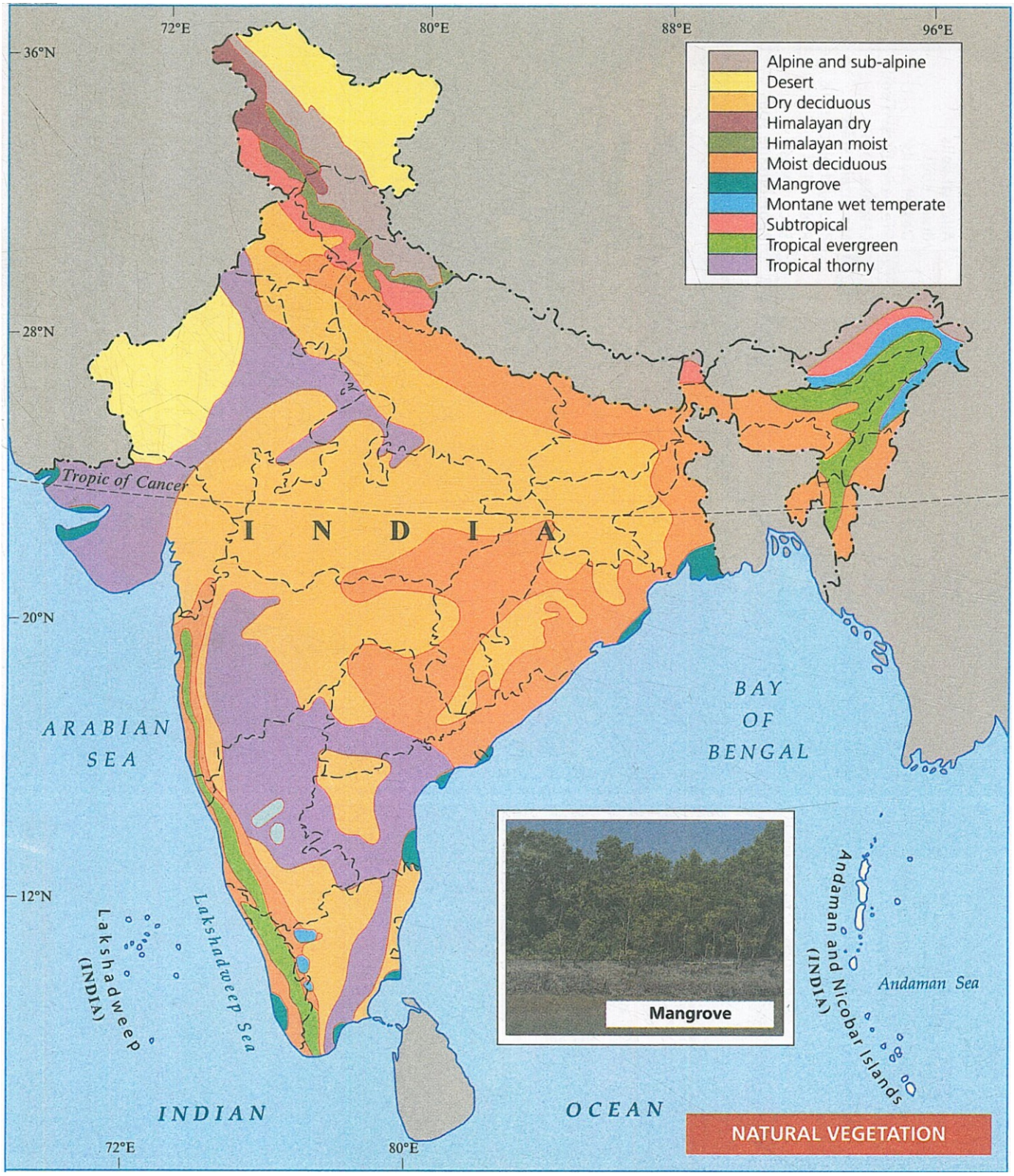

Fig.8.1 : India : Natural Vegetation

less rainfall. The trees have an average height ranging from 6 to 9 metres. These trees are locally very important.

4. Desert Forests

These forests are found in the areas where annual average of rainfall is less than 50 cms. These trees have small and thin leaves which are mostly thorny. These characteristics minimize the loss of water through evapotranspiration. The roots of these trees are long and thick which fetch the required quantity of water for the tree from huge areas. Babool is the most popular variety of this biome. Other trees of the region are Nagfani, Rambas, Khejra, Ker, Khajur etc. These are mostly found in south-western Punjab, western Rajasthan, Gujarat, Madhya Pradesh etc. The trees are locally important. Farmers use them for providing shade in their fields, for deriving nutrient leaves for feeding animals, for adding fertile humus content in the soil and controlling soil erosion.

5. Tidal Forests

These forests are found at the mouths of peninsular rivers like Mahanadi, Godavari, Krishna, Kaveri etc. and in the deltaic areas of Ganga-Brahmaputra where the oceanic water advanced into the land during tides and reaches upto the roots of these trees. These areas are characterised by mud and marshes. Sundri trees of Ganga-Brahmaputra delta and mangrove trees in Hugli delta are characteristic of this group. Other trees include palm, coconut, heroteria, rizophora, sonerita etc. These trees have soft wood.

6. Mountain Forests

These forests are found at the height of 1500 metres above sea level in Mahabaleshwar of Maharashtra, Pachmarhi of Madhya Pradesh. These trees are 15-18 metres high. The trees have a thick stem supporting dense bushes beneath them. Dense and evergreen foliage is the characteristic of these forests. Creepers usually climb over these trees. Ugenia, Michenia and Rodendrons trees are found at higher elevations. These forests are also found in the western Himalayas and Assam hills in north Bharat at the height of 1800 metres to 2800 metres. The trees include pine, sanowar, devdar, spruce, birch, larch, elm, mapple and chestnut mainly.

Administrative Classification

Forest Department of the Government of India looks after the forests. Indian forests are divided into three major categories for their proper management, control and security -

1. Reserved Forests - Cutting of wood and animal grazing are banned in these forests of great significance. These forests extend over about 5 lakh Sq.Kms. area in India. They are very important as controllers of floods, soil erosion and desert expansion.

2. Protected Forests - Only government licenced people can cut wood and graze their animals in these forests. These forests extend over about 3 lakh sq.Kms. area.

3. Unclassified Forests - There is no ban from the government for wood cutting and animal grazing in these forests. But the user has to pay tax for it. Usually, the work of wood cutting is given to contractors. These forests extend over 2 lakh sq.Kms. area.

New Classification

Now, a different administrative classification of forests have been adopted -

1. State Forests - Approximately 95% forests of Bharat are of this category. Their control, maintenance, development and security is totally in the hands of the government. Most of the forests of Bharat have now been included in this category in the light of the continuous reduction of forest areas.

2. Community Forests - In this category are included the forests over which municipal corporations, councils, municipalities, Zila Parishads etc. enjoy the control and bear the responsibility of their maintenance, development and security. Approximately 3% forests of Bharat are included in this category.

3. Individual Forests - Individually controlled forest areas are included in this category. Considering the need to expand forest area in Bharat, this new category has been introduced to encourage afforestation in individually owned areas. About 2% forests of Bharat belong to this group.

Forest Resources

Of all the valuable resources of India, forest resources occupy an important place. The resource has a major contribution in the economic progress and developmental projects of our country. Earlier Bharat had a vast stretch of forests. But in order to procure more agricultural land, additional

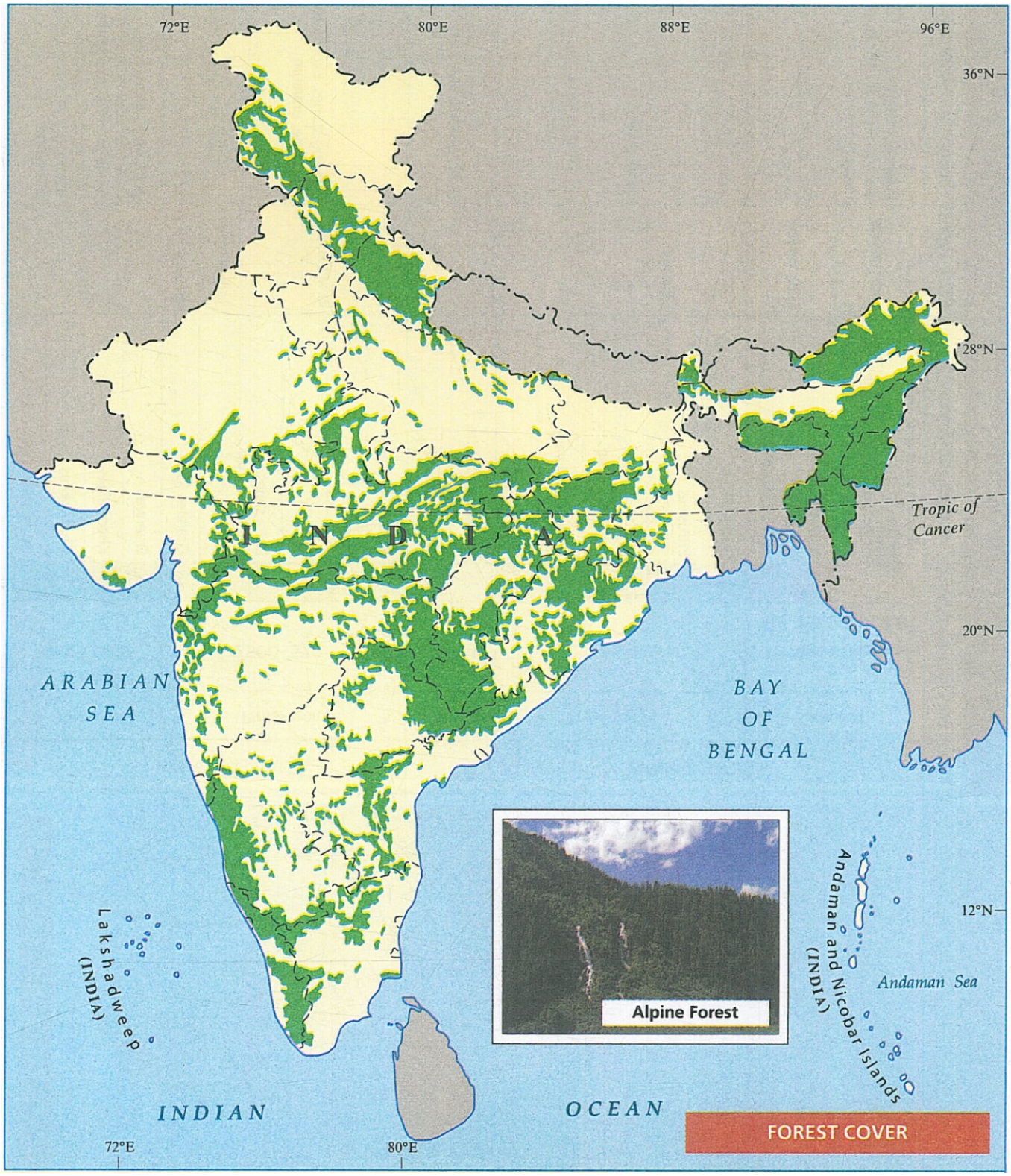

Fig. 8.2 : India : Forest Cover

requirements for settlement and rise in the demand for wood led to uncontrolled and illogical cutting of forests which led to their speedy shrinking. At present only 24.39% area of Bharat is covered under forest and tree cover: (2017, Forest Report). This area has to be increased to 33% as decided by the Government of India. Government has initiated social forestry plan to achieve this objective (Fig. 8.2).

Benefits of Forests

(A) Direct Benefits

1.Wood for agricultural implements, furnitures and buildings is obtained from forests.

2. Fodder for animals is available in forests.

3. Forests provide fuel wood.

4. Raw materials for paper, matches, sport goods, rubber and dye industries are obtained.

5. Forests are the sources of daily means of livelihood for many people. Wood cutting, wood sawing, boat, rope, van, cart making, gum, lac, fruits, vegetable-herbs, ral collection and transporting these materials to the market areas, are the activities which provide employment to many people.

6. Forests provide wood coal which is used as a source of power besides household fuel used in rural areas.

7. Forests provide many herbs for the preparation of useful medicines.

8. Forests are the source of silk through silk worm rearing particularly on Arandi and mulberry trees.

9. Government receives income from forests.

(B) Indirect Benefits

1. Forests keep the climate equable and humid.

2. Forests help in providing higher rainfall by attracting clouds towards them and helping in the condensation process.

3. Forests reduce the severity of storms and cyclones.

4. Forests reduce severity of floods.

5. Forests check soil erosion and desert expansion.

6. Soil fertility is increased by the mixture of tree leaves, the decay of which adds humus content.

7. Forests help in raising underground water level by promoting seepage of water.

8. Forests, when burried in the sub-soil for a very long period, are converted into a valuable mineral like coal.

9. Forests provide shelter to wild life.

10. Forests provide hunting ground for entertainment.

11. Forests are symbol of natural beauty.

12. Forests help in maintaining biotic equilibrium.

13. Forests control environmental pollution.

14. Forests also help in controlling noise pollution.

15. Forests help in moderating green house effect which is increasing due to environmental pollution.

16. Forests have a special importance in Bhartiya culture. These are characterized as grounds sanctified by austerities, philosophical thinking and learning.

Environmental pollution is continuously increasing with the pace of industrial development in this modern era. The smoke emitted by the industrial chimneys, the large amount of smoke ejaculated by vehicles on roads, urban waste etc. are the major sources of environmental pollution. There has been a worldwide awakening for controlling the increasing environmental pollution. Natural vegetation helps in maintaining gaseous balance in the atmosphere. Afforestation programme undertaken in Bharat is also intended to control environmental pollution. It is our national and social duty to preserve this unique natural gift. Some selfish elements are destroying the valuable resource for their short term gains. We have to be cautious against these enemies of our society and help in the conservation of our valuable forest resources.

Forest Products

Indian forests are very important economically. Forest products can be divided into two groups - (A) main products and (B) secondary products.

(A) Main Products

Woods of Himalayan Region

1. Devdar - It is an evergreen needle leaved tree which attains an elevation of about 30 metres. It is mainly found in Kashmir, Punjab hills and

Garhwal region at the height of about 2500 metres. Wood of this tree is medium hard, yellow brown, durable and valuable. Its wood is used as building material as well as in making railway sleepers and bridges. The wood has a pleasant smell, therefore, a kind of fragrant oil is also extracted from it. These trees extend over an area of about 5,000 Sq.Kms.

2. Pine - This is also a needle leaved evergreen tree which is found at an elevation of 1000 to 2000 metres in the mountainous areas of Kashmir, Punjab, Uttar Pradesh and Uttaranchal. These trees usually grow to a height ranging from 18-30 metres. The tree cover spreads over an area of 8,000 Sq.Kms. The wood of this tree is light and therefore, it can float in water. Its wood is mostly used in making packing boxes, boats and cheap furniture. Turpentine oil is extracted from its wood.

3. White Sanowar - It is also a needle leaved evergreen tree which is mostly found in the western Himalayas over the height ranging from 2000-3000 metres above sea level. These trees can be as much as 50 metres high. Their wood is white, soft and durable. It is mainly used in preparing pulp for paper, matches, light boxes, packing boxes and floor boards.

Woods of Monsoonal Trees

1. Saal - It is a deciduous tree which is mostly found in the tarai area near the lower slopes of Himalayas and also extending in Uttaranchal, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Jharkhand, Bihar and Orissa. Its wood is hard and of brown colour. It is a durable wood which is mainly utilized in the preparation of railway coaches and sleepers, bridges and in buildings. These trees cover an area of about 1 lakh Sq.Kms.

2. Teak (Sagwan) - These trees cover an area of about 60,000 sq.kms. The trees of this durable wood are mostly found in southern Rajasthan, Madhya Pradesh, Chhattisgarh, Maharashtra, Kerala, Tamil Nadu and Orissa. Because of its durability, its woods is used in ships, railway coaches and for furniture.

3. Rosewood (Sheesham) - This wood is of dark brown colour and is very hard and solid. Its wood is used as building material, in furniture making and in railway wagons. These trees are mainly found in the drier areas of Uttaranchal, Uttar Pradesh, Punjab, Tamil Nadu and Andhra Pradesh. Some trees are also found in Madhya Pradesh, Chhattisgarh, Assam and West Bengal.

Woods of Dry Forests

1. Acacia (Babool) - This tree is wide spread throughout India. There are atleast 20 varieties of this tree found in our country. The bark and gum of this tree is very useful. Its bark is used for colouring leather. Good quality of gum procured from this tree is edible. Other varieties of gum are used for various purposes. Many types of indigenous medicines are prepared from the roots, bark and gum of this tree.

2. Catechu (Kher) - This tree is also found in a large area of our country. It is usually 3-6 metres tall. Its wood is hard and cannot be destroyed by termites. Pillars in houses, indigenous oil crushers (Ghanies), ploughs and many other agricultural implements are prepared from this wood. This tree also provides catechu (kattha) and kuch. Catechu (kattha) is popularly used in beetles and in the preparation of many medicines. Kuch is used for dyeing-printing purposes.

(B) Secondary Products

1. Lac - India enjoys monopoly in the production of lac. An insect named **lecifer lacca** sucks juice of the soft branches of the trees of palash, kusum, bargad, kher, ghont, pipal, gular etc. This insect continuously ejaculate sticky material which is known as lac. Lac is mainly collected in Gujarat, Madhya Pradesh, Chhattisgarh, Orissa, Uttar Pradesh, Jharkhand, Bihar, Meghalaya and West Bengal. Lac is a bad conductor of electricity. It is used in the making of gramophone records, polish, toys, tubes of radio and televisions etc. About 90% of the production of lac in Bharat is exported to the United States of America, Russia, Germany, Britain, Australia etc.

2. Materials for dyeing leather - These materials are obtained from barks, leaves and fruits of many trees. The trees producing such materials are harad, baheda, amla, tarwood, mangrow, kuch, gambier etc.

3. Gum - The sticky material (Raal) ejaculated from the bark of neem, peepal, khejra, keekar, babool trees etc. is refined into various qualities of gum which is used for eating as well as for sticking. Many other varieties of gums, from which indigenous medicines are prepared, are also procured from the trees.

4. Grasses - Many types of grasses are found in forested areas. Famous products in this

category are khaskhas grass, rosha grass, agni grass, moonj and elephant (Hathi) grass.

Besides these products, forests also provide rubber, fruits, honey, wax, herbs etc. Bharat earns about rupees 600 crores annually from these secondary products of forests.

Causes of the Backwardness of Forestry

1. Forest area in Bharat is very limited. It is only 0.2 hectare per person in our country.
2. Forested area is unequally distributed.
3. Lumbering is done by old and traditional methods.
4. Most of the trees are not gregarious hence their economic importance is considerably reduced.
5. Most of the forest cover is found on higher elevations where their cutting is not easy.
6. There is a lack of means of transportation in forested areas.
7. There is a lack of coordination among different departments responsible for the conservation and protection of forests. Therefore, afforestation as well as the protection of existing forests cannot be done effectively.
8. There is an absence of scientific researches about forest management and the utilization of forest products.

Suggestions for the development of forests

1. Illegal and illogical cutting of forest should be strictly banned.
2. Minimum area under forest cover should be determined in each region.
3. Reserved forests should be well managed.
4. Means of transportation should be developed in forest areas.
5. More attention is required towards the commercial aspects of forestry. This will not only increase income of the government but will help in generating employment opportunities in the country.
6. Forest research should be accelerated.
7. Public awareness programmes should be started for highlighting use and importance of forests.
8. A better coordination must be managed among different government and non-government departments for the conservation and protection of forests.

Development of Forests in India

According to Forest Report, 2015, the total forest cover is 7,08,273 sq. Km, which is 22.02 of the geographical area of the country. The percentage of forested land in India is too small as compared to other countries. The forested area has been planned to be increased to 33% under the forest policy of 1952 as declared by the Government of India. Of this projected forest cover, about 60% has been planned to be developed in hilly areas and the rest in the plains.

Afforestation of fast growing trees along the roads and railways and at other places with a view to control floods and expansion of desert is being done under five year plans. Illegal forest cutting has been banned. Forest education and researches are also being promoted.

Important Points

1. Forests have cultural importance in Bharat; different types of forests are found in Bharat due to geographical diversities.
2. Types of forests - evergreen, deciduous or monsoonal, dry, desert, tidal and mountain forests.
3. Administrative classification - reserved, protected and unclassified forests; new basis - state, community and individual forests.
4. Many direct and indirect advantages of forests.
5. Forest products - main products (devdar, pine, white sanowar, sal, teak, rosewood, acacia, catechu, kuch etc.), secondary products (lac, materials for dyeing leather, gum, grasses, mahua, tung, bamboos, canes, rubber, fruits, honey, wax, herbs etc.).
6. Many factors responsible for the backwardness of forestry, measures for its development are necessary; many efforts are being made for forest development in Bharat.

Exercise

Multiple Choice Questions

1. The state in which Teak (Sagwan) trees are not found, is -
   (A) Jammu-Kashmir (B) Rajasthan

(C) Madhya Pradesh. (D) Chhattisgarh.

2. The forest found in the areas of less than 50 cms. rainfall is-
   (A) Dry (B) Desert
   (C) Monsoon (D) Evergreen.

3. The group of trees belonging to mountain forest is -
   (A) Pine, Devdar, Larch
   (B) Mango, Bamboo, Acacia
   (C) Acacia, Peepal, Pine
   (D) Coconut, Rosewood, Devdar

Very Short Answer Type

4. In which type of forests Mangrove trees are found?
5. Which agency controls community forests?
6. How much percentage of land has been planned to be forested by the Government of India?

Short Answer Type

7. What are state forests?
8. Where are dry forests found?
9. Which type of trees are included in monsoon forests?

Essay Type

10. Write an essay on the forest products of Bharat.
11. Write an essay on the distributional pattern of forests in Bharat.

Skill

12. Show the areas of dry forests in an outline map of Bharat.
13. Show the areas of tidal forests in an outline map of Bharat.

Anser Key

1. (A), 2. (B), 3. (A)