17 Natural Vegetation

Vegetation is an important part of human life. It is difficult to imagine life without vegetation. Its importance has been accepted by our ancient scriptures and by modern science.

India has a large diversity of natural vegetation. In terms of vegetation diversity, India holds tenth position in the world and fourth in Asia. A forest is a group of trees, and those trees which grow in natural conditions without human help are called Forest.

Natural Vegetation

The diversity in natural vegetation of India is created due to the following reasons :

(1) Relief features (2) Soil (3) Temperature (4) Insolation (sunshine) (5) Rainfall (6) Humidity

Due to the diversified relief like mountains, plateaus, plains, deserts etc. a diverse pattern in vegetation is seen in India. There are different soils e.g. alluvial, black, mountain, desert type etc. in India. This variation in soils also creates differences in vegetation. The difference in temperature and humidity in cold Himalayan regions and in southern peninsular region also brings variations in vegetation. The insolation over any place depends on its latitude and altitude. Vegetation grows faster where there is more rain and insolation. Thus, there is a diversity in vegetation due to sunshine. Rainfall distribution in India is also unequal which in turn causes diversity in vegetation.

There are about 5000 varieties of trees in India, out of which 450 trees are useful commercially. Besides, about 15,000 flowering plants also grow which form about 6 % of the world. Non-flowering plants like fern, algae, moss etc. are also found in our country. India is famous since ancient times for the herbal plants. About 2000 medicinal plants are described in Ayurved. Thus it can be said that India has a diversity in vegetation.

Types of Natural Vegetation

Existence and growth of any vegetation depends on the climate of a region. In the regions of identical climate, the vegetation seen is mostly identical. Regions of such ecological similarities are called Natural Vegetation Regions.

On the basis of altitude, soils, rainfall and variations in temperature, the natural vegetation regions can be divided into five types :

(1) Tropical Rain Forests (2) Tropical Deciduous Forests (3) Tropical Desert Vegetation

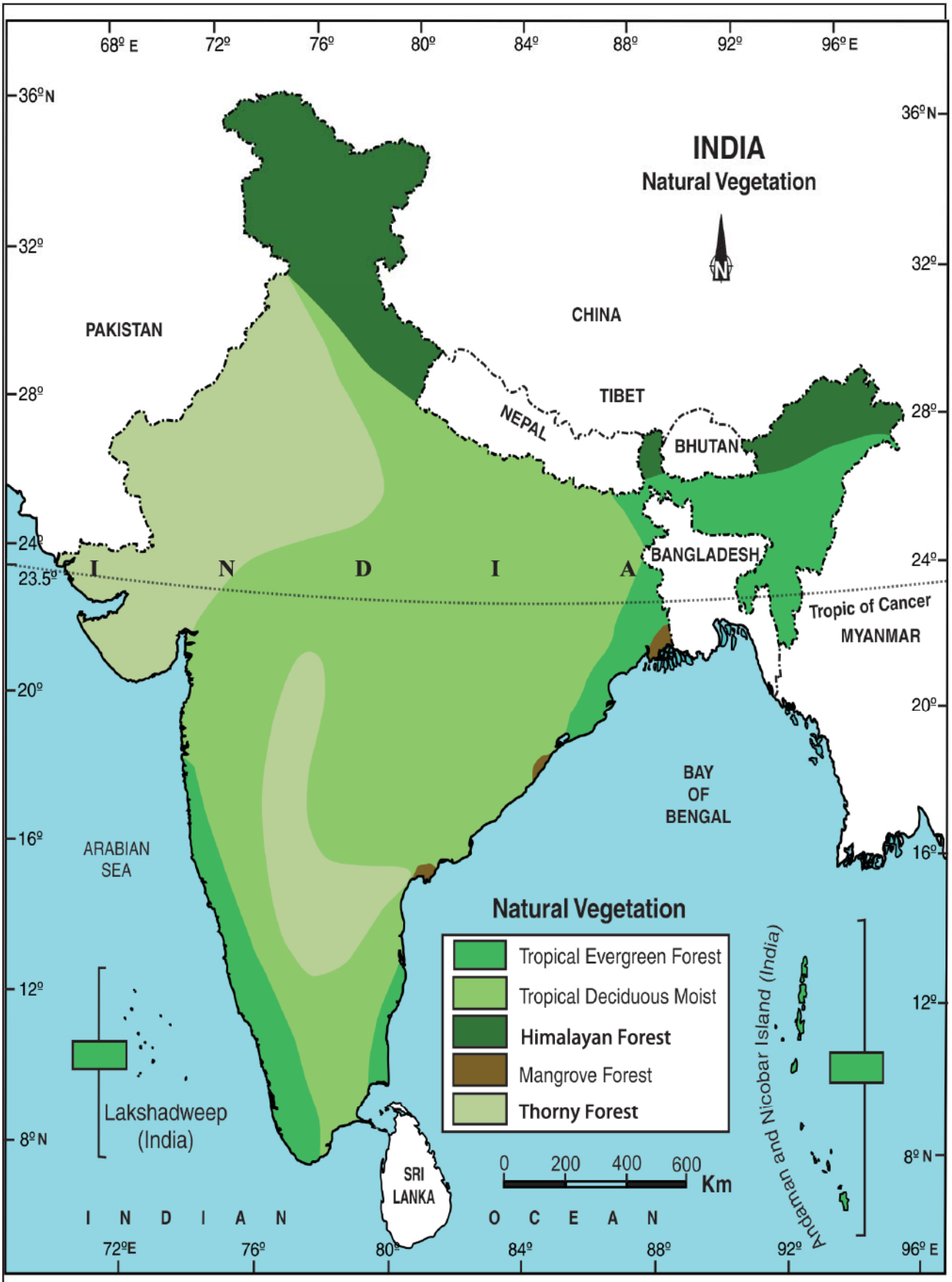
(4) Temperate Forests and Grasslands (5) Mangrove (Tidal) Forests.

(1) Tropical Rain Forests :

Distribution : Tropical Rain Forests are found in hot and humid regions where annual rainfall exceeds 200 cm and temperature is more than 22° C. Such forests are found in areas of heavy rainfall of Western Ghats, Lakshadweep, Andaman – Nicobar Islands, upper regions of Assam, coastal Tamil Nadu.

Trees : Trees found here are mahogany, ebony, rosewood, rubber etc.

Characteristics : Trees here are about 60 metres tall or even more. There is more humidity due to scrubs. There is no season here like autumn. As these trees are evergreen, the forests are also called



17.1 India : Natural Vegetation

Evergreen Forests.

(2) Tropical Deciduous Forests :

Distribution : Generally, such forests are found in the regions receiving about 70 to 200 cm rainfall. Such forests are found in North–Eastern States, Himalayan foothills. Western Odisha, Chhattisgarh, Jharkhand, eastern slopes of Eastern Ghats, Vindhya and Satpuda ranges. There is a large proportion of these forests in India.

Trees : Major trees found here are teak, saal, sesame, sandalwood, kher (acacia catechu) bamboo etc.

Characteristics : A major characteristic of the trees here is that the trees shed their leaves for 6 to 8 weeks during autumn. Every species has a different time to shed the leaves, so all the trees are never without leaves during any particular season. As these trees shed their leaves according to seasons, these are also called Monsoon forests.

(3) Thorny Vegetation :

Distribution : Generally, such forests are found in the regions receiving less than 70 cm of rainfall. These are found in North-Western region, Gujarat, Rajasthan, Madhya Pradesh, Uttar Pradesh etc.

Trees : Jujube, acacia, cactus, khijdo etc. are common trees found here.

Characteristics : The roots of the trees and plants here are long, deep and widespread. Leaves are shorter which result in slower evapotranspiration process.

(4) Temperate Forests and Grasslands (Himalayan Vegetation) :

Vegetation on Himalayas

Height	Areal span	Forests	Trees
1000 to 2000 metres of Himalayas	High mountains of North -East, West Bengal and mountainous area of Uttarakhand	Tropical forests	Oak and chestnut Major vegetations
1500 to 3000 metres of Himalayas	Southern slopes of Himalayas, higher areas of South and North-East	Coniferous forests	Pine, deodar, silver fir , spruce
3600 metres and more of Himalayas	Higher altitude in Himalaya and near snow line	Alpine and short grass (Tundra vegetation)	Silver fir and Junifur birch

A major characteristic of the coniferous forests is that the trees have conical shape. Their branches lean towards the surface so that the snow would easily slide down towards the land. Tree leaves are long, pointed and sticky which can conserve humidity for longer time.

(5) Tidal Forests (Mangroves) :

Distribution : Tidal forests are located in the delta regions of rivers along the coast. These forests are found along Gujarat coast and in the marshy lands along the Bay of Bengal coast.

Trees : Sundari and cher.

Forest products and their utility

Forests are useful to mankind in many ways. Timber wood from teak and saal is used for furniture making. Boats are prepared from the wood of sundari trees of Sundarvan. Sports goods and packing boxes are prepared from the wood of pine and chid trees. Turpentine is prepared from the liquid of chid trees. Sandalwood is used to prepare perfumed oil, cosmetics etc. Baskets, toys, goods of home decoration etc. are made from bamboo trees. Forests also provide lac (sealing wax), resin, gum, rubber, honey, cane etc. Amla (embellicmyrobalan), baheda, harde, ashvagandha etc. hold medicinal utility.

Medicinal Utility of Vegetation	
Vegetation	**Medicinal Utility**
Sarpagandha	In high blood pressure
Limdo	As bacterial resistant
Tulsi	Cold, cough and fever
ArjunSadad	Treatment for heart ailments
Bili	Gas and cough impurities
Galo	Diabetes, fever, joint pain
Harde	Constipation, hair diseases
Amla	Cures gas, acidity, digestive
Karanj	Skin and dental - gum diseases

Besides leaf plates from khakhro leaves, catechu from kher tree, bidi from timru leaves are also prepared. Forests provide livelihood and food to forest dwellers. This way forests contribute into the social and economic development of mankind.

Environmental Importance of Forests :

The environmental importance of forests is as follows :

- Forests are useful to bring rain.
- They control the atmosphere from becoming adverse.
- They provide life saving oxygen.
- Forests control the floods.
- They absorb harmful gases like carbon dioxide.
- Forests prevent soil erosion.
- Forests maintain ground water.
- Forests restrict the advancing deserts.
- Forests are useful in reducing air pollution.
- Forests enhance the natural beauty.
- Forests purify the air.
- Provide natural habitat to the wildlife.
- Forests are ideal places for adventurous, tourism activities.
- Some forests are reserved with reference to National Parks and Sanctuaries and bio diversity.

Forest conservation

Ecosystem is formed due to the interrelation of biosphere and mankind. But due to the anti-environmental activities and selfishness of man, the ecosystem is disturbed. Man's insatiable

desire to procure land is responsible for the destruction of forests. Forests are destroyed also due to increasing population, policy of establishing industrial units away from residential areas, urbanization, multi-purpose projects, construction of roads, jhoom cultivation, to get timber and fuel wood, forest fire etc. Ecological balance is disrupted due to the destruction of forests.

Adverse effects are noticed due to forest destruction. These include decrease in rainfall, drought, global warming, green house effects, advancing deserts, shelterlessness of wild animals etc.

According to the National Policy of 1952, there must be forests over 33 % of the total geographical area of the nation. In India, forests are spread over about 23 % area while forests occupy only about 10 % of land in Gujarat. Thus, it is necessary to prevent destruction of forests, and so protection and conservation of forests is necessary.

Like to know

In Gujarat, white khakhro, gugal, nilsoti, sesame, amli, attak, harde etc. are placed in Red data Book of I.U.C.N. (International Union for Conservation of Nature) in ' on verge of extinction' category.

Remedies to conserve forests :

In order to protect and conserve forests, The Government of India implemented a National Forest Policy in 1952. In 1980, the parliament passed Legislative Act and in 1988 a new National Policy was announced. Following steps should be taken to preserve forests.

(1) Forests are our nation's resource. Take it as our moral duty to protect them.

(2) Tree felling should be stopped. Heavy punishment must be inflicted to those who cut trees illegally.

(3) To increase public participation in Van Mahotsav and Social Forestry, trees must be planted on either sides of waste land, river, railway tracks and roads and raise them.

(4) Create awareness about environment through environmental education and school syllabus, celebrate environment related days.

Like to know

Environment related days

21 March	-	World Forest Day
22 April	-	World Earth Day
5 June	-	World Environment Day
July (month)	-	Van Mahotsav
16 September	-	World Ozone Day

(5) Take precautions to avoid forest fire, and in case of fire it must be doused immediately.

(6) Use renewable energy resources such as solar energy, bio energy, wind energy etc. in place of traditional resources like wood which is used to get energy.

(7) Explain the importance of forests to people through broadcasting media and bring public awareness about it.

Like to know

- The year 2011 was declared as **"World Forest Year"** in order to bring global awareness.
- Social Forestry means to manage forests to conserve forests and plant trees to help environment, society and rural development.
- F.R.I.(Forest Research Institute) located at Dehra Dun undertakes forest related research.

Self study

1. Answer the following questions in brief :

(1) Why is a diversity of vegetation seen in India ?

(2) What is the environmental importance of forests ?

(3) What are the reasons for forest destruction ?

(4) What are the effects of forest destruction ?

(5) ''Tropical Forests are also called Evergreen Forests'' – Give reasons.

2. Answer the following questions in details :

(1) State the types of forests in India.

(2) Write about the utility of forests.

(3) Elaborate the remedies for forest conservation.

3. Select a correct option for the following questions and write answer :

(1) Which place does India hold in world with respect to vegetation diversity ?

(A) First (B) Fourth (C) Tenth (D) Fifth

(2) Which of the following statements is incorrect ?

(A) Tidal forest is located in Ganga delta.

(B) Turpentine is prepared from liquid of chid tree.

(C) Sundari wood is used to prepare boats.

(D) Thorny bush occur in mountainous area of Himalayan.

(3) Join the correct pairs :

A	B
(A) Tropical Rain Forests	1. Cher
(B) Tropical Desert Vegetation	2. Pine
(C) Tidal Forests	3. Acacia
(D) Coniferous Forests	4. Mahogany

(A) A-3 B-4 C-1 D-2

(B) A-4 B-3 C-1 D-2

(C) A-4 B-3 C-2 D-1

(D) A-4 B-2 C-3 D-1

(4) What is prepared out of the liquid of chid ?

(A) Catechu (B) Turpentine (C) Lac (D) Gum

Activity

- Collect photographs of different vegetation and prepare a bulletin explaining its utility.
- Celebrate Van Mahotsav in the school. Let the students plant the trees and name the trees after them.
- On students' birthday, make them take an oath, plant a sapling and encourage them to rear it.
- Arrange drawing, essay and elocution competitions about forest protection and conservation.
- Visit a Van Chetna Kendra located near your village / town.