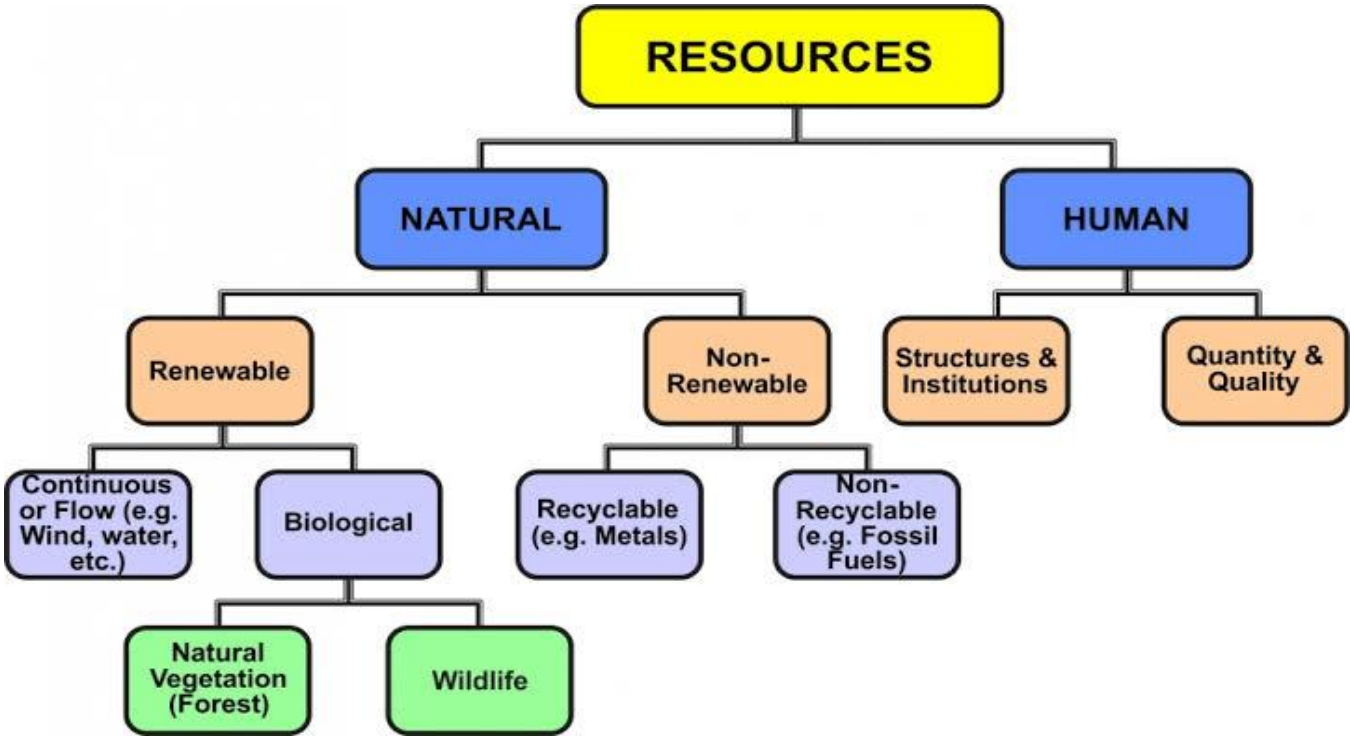
AV & AVS Education

Geography (Class: 10th)

Chapter – 1

Resources and development

Everything available in our environment which can be used to satisfy our needs, provided, it is **technologically** accessible, **economically** feasible and culturally **acceptable** can be termed as **'Resource'**



Note- Human beings themselves are essential components of resources. They transform material available in our environment into resources and use them.

These resources can be classified in the following ways –

(a) On the basis of origin – biotic and abiotic

(b) On the basis of exhaustibility – renewable and non-renewable

(c) On the basis of ownership – individual, community, national and international

(d) On the basis of status of development –potential, developed stock and reserves.

TYPES OF RESOURCES

On the Basis of Origin

Biotic Resources: These are obtained from biosphere and have life such as human beings, **flora and fauna, fisheries, livestock etc.**

Abiotic Resources: All those things which are composed of nonliving things are called abiotic resources. **For example, rocks and metals.**

On the Basis of Exhaustibility

Renewable Resources: The resources which can be renewed or reproduced by **physical**, **chemical** or **mechanical** processes are known as renewable or replenishable resources. For example, **solar and wind energy, water, forests and wildlife, etc.**

Non-Renewable Resources: These occur over a very long geological time. Minerals and fossil fuels are examples of such resources. These resources take millions of years in their formation. Some of the resources like metals are recyclable and some like fossil fuels cannot be recycled and get exhausted with them.

On the Basis of Ownership

Individual Resources: In villages there are people with land ownership but there are many who are landless. Urban people own plots, houses and other property. Plantation, pasture lands, ponds, water in wells etc.

Community Owned Resources: There are resources which are accessible to all the members of the community. Village commons **grazing grounds, burial grounds, village ponds, public parks, picnic spots.**

National Resources: National Resources are owned by a nation or country. All the minerals, water resources, forests, wildlife, land within the political boundaries and oceanic area up to 12 nautical miles (22.2 km) from the coast termed as territorial water and resources therein belong to the nation. **Roads, canals, railways etc.**

International Resources: The oceanic resources beyond 200 nautical miles of the Exclusive Economic Zone belong to the open ocean and no individual country can utilise these without the concurrence of international institutions.

On the Basis of the Status of Development

Potential Resources: Resources which are found in a region, but have not been utilised. For example, the western parts of India particularly Rajasthan and Gujarat have enormous potential for the development of wind and solar energy, but so far these have not been developed properly.

Developed Resources: Resources which are surveyed and their quality and quantity have been determined for utilization. The development of resources depends on. Technology and level of their feasibility

Stock: Materials in the environment which have the potential to satisfy human needs but human beings do not have the appropriate technology to access. For example, water is a compound of two inflammable gases; hydrogen and oxygen, which can be used as a rich source of energy.

Reserves: These can be used for meeting future requirements. River water can be used for generating hydroelectric power but presently, it is being utilised only to a limited extent. Thus, the water in the dams, forests etc. is a reserve which can be used in the future.

Development of Resources

Accumulation of resources in a few hands, which, in turn, divided the society into two segments, rich and poor

Resource Planning

Resource planning is essential for the sustainable existence of all forms of life. Sustainable Economic Development means "development should take place without damaging the environment, and development in the present should not compromise with the needs of future generations."

Resource Planning in India

Resource planning is a complex process which involves:

(i) Identification and inventory of resources across the regions of the country. This involves surveying, mapping and qualitative and quantitative estimation and measurement of the resources.
(ii) Evolving a planning structure endowed with appropriate technology, skill and institutional set up for implementing resource development plans.
(iii) Matching the resource development plans with overall national development plans.

Conservation of Resources:

Resources are vital for any developmental activity. But irrational consumption and over-utilisation of resources may lead to socio-economic and environmental problems.

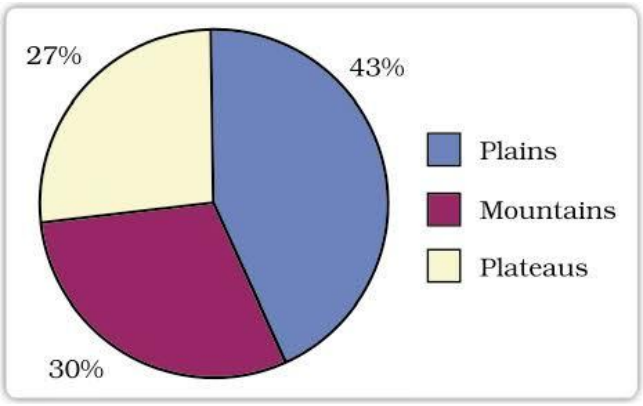
There are some ways to conserve natural resources

- Walking or cycling for short distances
- Use of cloth bags instead of plastic bags
- Try to cut short the usage of plastic and try to replace them by metal containers or biodegradable ones
- Using the kitchen waste as manure instead of fertiliser
- Having a small kitchen garden for the supply of oxygen and greenery at home
- Using public transport, car or bike pooling for travelling the same amount distance
- Avoid wastage of food
- Try using electric bikes or cars rather than fuel ones
- Purchase products made from recycled materials
- Recycle materials such as metal cans, old cell phones, and plastic bottles
- Conserve energy at home (turn out lights when they are not needed)

Land Resource

India has land under a variety of relief features, namely; mountains, plateaus, plains and islands. About **43 per cent** of the land area is plain, which provides facilities for agriculture and industry. Mountains account for **30 per cent** of the total surface area of the country and ensure perennial flow of some rivers, provide facilities for tourism and ecological aspects.

About **27 per cent** of the area of the country is the plateau region. It possesses rich reserves of minerals, fossil fuels and forests.



LAND UTILISATION

Forests

Land not available for cultivation

- Barren and waste land
- Land put to non-agricultural uses, e.g. buildings, roads, factories, etc.

Other uncultivated land (excluding fallow land)

- Permanent pastures and grazing land,
- Land under miscellaneous tree crops groves (not included in net sown area),
- Culturable waste land (left uncultivated for more than 5 agricultural years).

Fallow lands

- Current fallow-(left without cultivation for one or less than one agricultural year),
- Other than current fallow-(left uncultivated for the past 1 to 5 agricultural years).

Net sown area

- Area sown more than once in an agricultural year plus net sown area is known as gross cropped area.

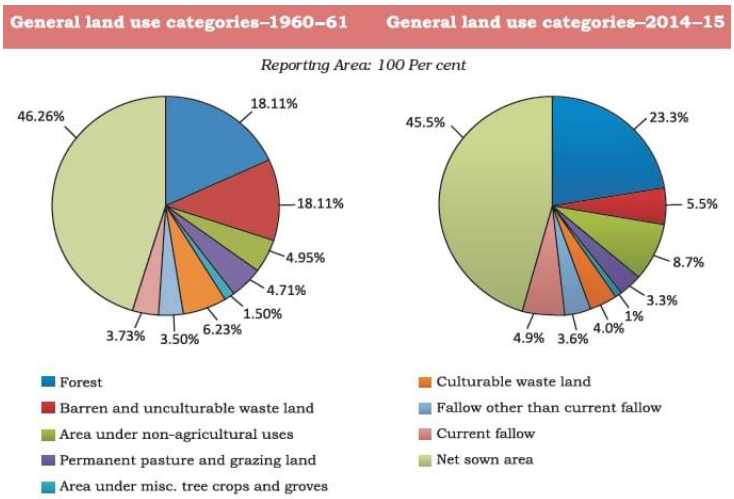
Land Use Pattern In India

The use of land is determined both by **physical factors** such as topography, climate, soil types as well as **human factors** such as population density, technological capability and culture and traditions etc.

Physical factors: such as topography, climate, soil types

Human factors: such as population density, technological capability and culture and traditions etc.

Total geographical area of India is **3.28 million sq km.** Land use data, however, is available only **for 93% of the total geographical area** because the land use reporting for most of the north-east states



Land Degradation and Conservation Measures

Human activities such as deforestation, overgrazing, mining and quarrying have contributed significantly to land degradation. Mining sites leave deep scars and traces of over-burdening the land. In recent years, industrial effluents as waste have become a major source of land and water pollution in many parts of the country.

There are some ways, which we can solve the problems of land degradation are:

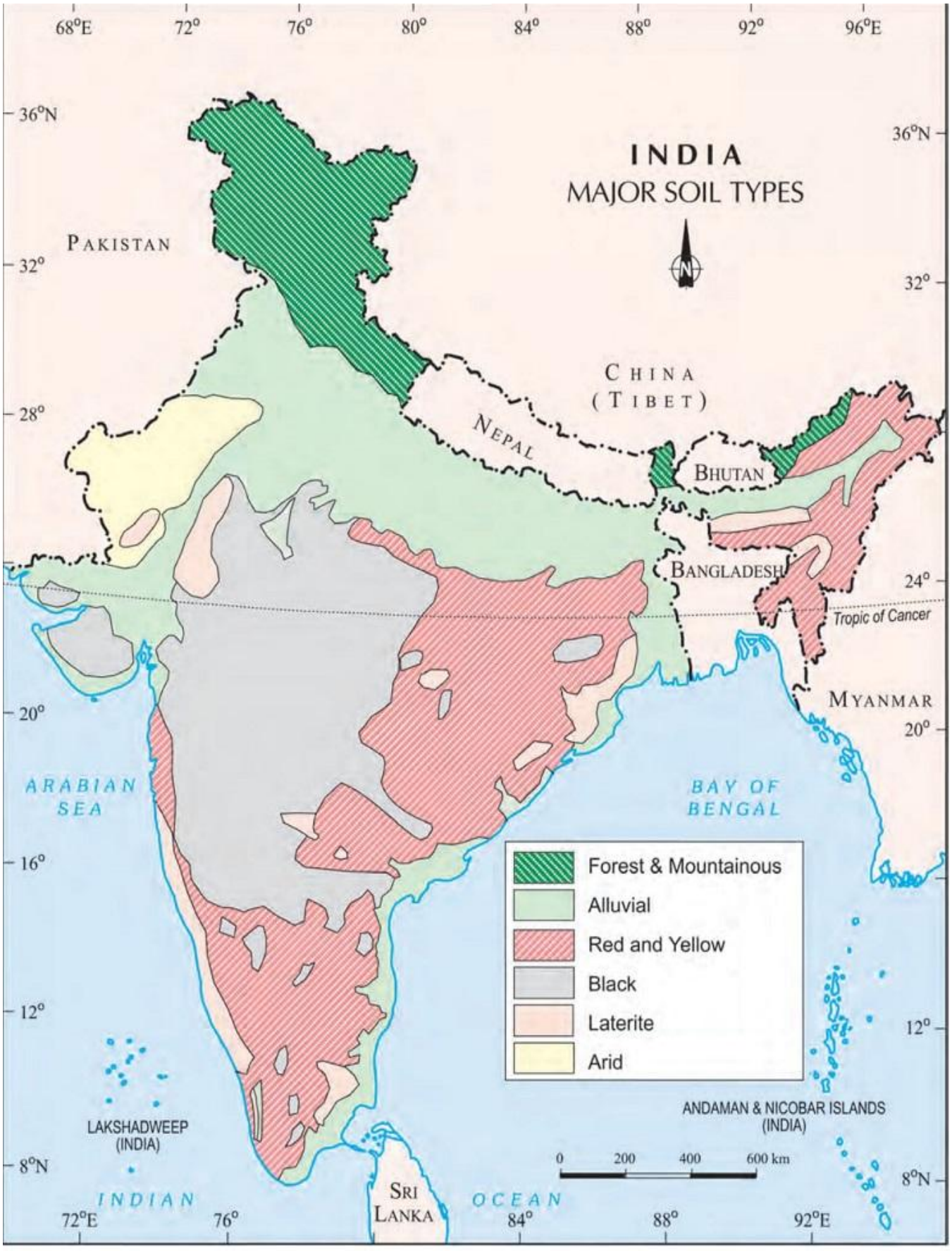
- Afforestation and proper management of grazing.
- Planting of shelterbelts of plants.
- Stabilisation of sand dunes by growing thorny bushes.
- Proper management of waste lands.
- Control of mining activities.

Soil as a Resource

Soil is the most important renewable natural resource. It takes millions of years to form soil upto a few cms in depth. Various forces of nature such as change in temperature, actions of running water, wind and glaciers, activities of decomposers etc contribute to the formation of soil.

Classification of Soils

On the basis of the factors responsible for soil formation, colour, thickness, texture, age, chemical and physical properties, the soils of India are classified in different types.



India: Major Soil Types

Alluvial Soils

The entire northern plains are made of alluvial soil. The Alluvial Soil is deposited by **3 important Himalayan river systems – the Indus, the Ganga and the Brahmaputra.**
It is also found in Rajasthan, Gujarat and eastern coastal plains particularly in the deltas of the Mahanadi, the Godavari, the Krishna and the Kaveri rivers.
The alluvial soil consists of **sand, silt and clay**.

Classification d alluvial soil

Old Alluvial (Bangar): The Bangar soil has a higher concentration of kanker nodules than the Khadar.

New Alluvial (Khadar): It has more fine particles and is more fertile than the Bangar.
Alluvial soils are very fertile. These soils **contain potash, phosphoric acid and lime,** which are ideal for the growth of **sugarcane, paddy, wheat and other cereal and pulse crops**.

Black Soil

This soil is black in colour and is also known as regur soil. The soil is ideal for growing cotton and is also known as black cotton soil. Black soil is nutrients rich and contains **calcium carbonate, magnesium, potash and lime.**

This type of soil is typical of the **Deccan trap (Basalt) region spread over northwest Deccan plateau** and is made up of **lava flows.**

The soil covers the plateaus of **Maharashtra, Saurashtra, Malwa, Madhya Pradesh and Chhattisgarh and extends in the south-east direction** along the Godavari and the Krishna valleys.
The black soils are made up of extremely fine i.e. **clayey material and well-known for their capacity to hold moisture.**

Red and Yellow Soils

This type of soil develops on **crystalline igneous rocks in areas of low rainfall in the eastern and southern parts of the Deccan plateau.**

These soils develop a reddish colour due to diffusion of iron in crystalline and metamorphic rocks. It looks yellow when it occurs in a hydrated form.
Found in parts of **Odisha, Chhattisgarh, southern parts of the middle Ganga plain and along the piedmont zone of the Western Ghats.**

Laterite Soil

This soil is the result of intense leaching due to **heavy rain**. Lateritic soils are acidic (pH<6.0) in nature and generally deficient in plant nutrients. This type of soil is found mostly in **Southern states, Western Ghats region of Maharashtra, Odisha, some parts of West Bengal and North-east regions.**
The soil supports deciduous and evergreen forests but **humus poor**. This soil is very useful for growing **tea and coffee.**

Arid Soils

Arid soils range from red to brown in colour. This soil is generally sandy in texture and saline in nature. In some areas, the salt content is very high and common salt is obtained by evaporating the water. Arid soil **lacks humus and moisture.**

Forest Soils

These soils are found in the hilly and mountainous areas. The soil texture is loamy and silty in valley sides and coarse grained in the upper slopes. The soil is fertile on the river terraces and alluvial fans.

Soil Erosion and Soil Conservation

The denudation of the soil cover and subsequent washing down is described as soil erosion. The soil erosion is caused due to human activities like deforestation, overgrazing, construction and mining etc..
he running water cuts through the clayey soils and makes deep channels as gullies. The land becomes unfit for cultivation and is known as bad land.

There are some ways for Soil Conservation

- Ploughing along the contour lines decelerates the flow of water down the slopes. This is called Contour Ploughing.

- Terrace cultivation restricts erosion. This type of agriculture practice is done in Western and Central Himalayas.
- Planting lines of trees to create shelter helps in the stabilisation of sand dunes and in stabilising the desert in western India. Rows of such trees are called Shelter Belts.

Why we need to conserve soil

Soil is a vital part of our ecosystem and is the foundation of plant, animal and human life. Plants grow on soil and play an important role in regulating the climate of a region. In absence of plants, the region becomes inhabitable

Animal kingdom eats plants and grasses. Carnivorous animals eat the herbivorous animals. Humans grow crops on soil and thus live a settled life.

Forest and Wildlife resources Chapter – 2

We humans along with all living organism form a complex web of ecological system in which we are only a part and very much dependent on this system for our own existence. For example, the plants, animals and microorganism recreate the quality of the air we breathe.

Biodiversity: Variety of plants and animals found in an area is called biodiversity.
Flora: It refers to grasses, plants, trees etc of an area.
Fauna: It means birds, animals, reptiles, insects of an area.
IUCN: It full name is International Union for Conservation of Nature (founded in 1984).
Biosphere Reserve: It is vast area having great biological diversity. In these areas, natural plants and animals are protected for future generation.
Example – Nandadevi Biosphere Reserve in Uttranchal.

Flora and Fauna in India

1. India is one of the world's richest countries in terms of its vast array of biological diversity and has nearly 8 per cent of the total number of species in the world.
2. This is possibly twice or twice or thrice the number yet to be discovered.
3. These diverse flora and fauna are so well integrated into our daily life that we take these for granted.
4. They are under great stress mainly due to insensitivity to our environment.
5. That at least 10 per cent of India's recorded wild flora and 20 per cent of its mammals are on the threatened list.

Biodiversity Flora & Fauna in India

India is very rich in biological diversity. There are variety of plants and animals found in our country. India has nearly **8%** of the total number of species found in the world.
About **81,000 species** of fauna [animals] and **47,000 species** of flora plants are found in India.
India is famous for rhino, elephant, tiger, lion, monkey, snakes, peacock etc.

Biodiversity and Its Importance

Meaning of Biodiversity: Various species of plants, trees, animals, birds, reptiles etc. found in an area is called biodiversity. They are good natural resources. They are important because:

a) Plants and trees give us oxygen.
b) Woods for furniture and construction are provided by forest.
c) Some plants are of medicinal use e.g. tulsi, neem, sarpgandha, aawla etc.
d) Leaves, roots, fruits, lac, rasin etc are collected from forest.
e) Animals provides us meat, fur, skin, bone etc.
f) Combine, plants and animals maintain food chain in the ecosystem.

Importance of Forest in Our Lives

a) Forest provides timber for furniture and construction work.
b) It absorbs CO_2 and provides us with oxygen.
c) Branches, leaves and roots of trees protect soil from erosion.
d) Forests are natural habitat for variety of wildlife.
e) Forest maintains ecological balance and food chain.
f) It provides fuel wood to rural people.
g) Lac, honey, herbs etc are collected from forest for commercial use.

Classification of Species by IUCN

Many species of plants and animals are under threat due to over exploitation by the human being. **International Union for Conservation of Nature IUCN** has classified the species into following category:

Normal Species: Species whose population levels are considered to be normal for their survival, such as cattle, Sal, pine, rodents, etc.,

Endangered Species: These are species which are in danger of extinction the survival of such species is difficult if the negative factor that has led to a decline in their population continue to operate.

Vulnerable Species: These are species whose population has declined to levels from where it is likely to move into the endangered category in the near future if the negative factors continue to operate.

Rare Species: Species with a small population may move into the endangered or vulnerable category if the negative factors affecting them continue to operate.

Endemic Species: These are species which are only found in some particular areas usually isolated by natural or geographical barriers.

Extinct Species: These are species which are not found after searches of known or likely areas where they may occur.

Reasons for Depletion of Biodiversity Flora and Fauna

Human activities are mainly responsible for depletion of biodiversity. Followings are the reasons or causes behind loss of flora and fauna.

a) Deforestation, illegal cutting of trees, and forest fire
b) Hunting and poaching of wild animals for skin, tusk, bone etc.
c) Construction of dam, road, railways in the forest
d) Pollution and global warming leading to climatic change
e) Increasing human population pressure on the forest resources

What are the negative factors that cause such fearful depletion of the flora and fauna:

1. We have transformed nature into a resource obtaining directly and indirectly from the forest and wildlife.
2. The major causes of depletion of forest resources between 1951 and 1980 accordingly to the forest survey of India over 26,200sqq.km
3. 1951, over 5,000 sq km forest was cleared for river valley project.
4. Narmada Sagar project in Madhya Pradesh which would inundate 40,000 hectares of forest.
5. Habitat destruction, hunting, poaching over – exploitation, environmental pollution poisoning and forest fires are factors.
6. Poverty, in this case, is a direct outcome of environmental destruction.
7. This is imperative to adapt to sound forest and wildlife conservation strategies.

Conservation of Forest and Wildlife in India:

Indian Wildlife (Protection) Act:

1. An act for the conservation of biodiversity of India.
2. Passed in 1972.
3. Contains a list of protected species in the country.
4. The ban on hunting was imposed.
5. Legal protection was provided to the habitats of endangered species.
6. Restriction on trade in wildlife.
7. Projects such as Project Tiger, Project Elephant etc.

Project Tiger:

1. It was launched by the government of India in 1973.
2. To save the endangered species of tiger in the country.
3. The major threats to tiger population are poaching for the trade of tiger skins and bones which are traditionally used in medicines in Asian Countries.
4. India and Nepal Became the prime targets for poaching and illegal trading because they provide natural habitat for two-thirds of the surviving tiger populations.

Major tiger reserve of India are:

1. Corbett national park - Uttarakhand
2. Bandhavgarh National Park - Madhya Pradesh
3. Sunderbans National Parks - West Bengal
4. Sariska wildlife sanctuary - Rajasthan
5. Manas tiger reserve - Assam
6. Periyar tiger reserve - Kerala
7. Nagarjuna Sagar Srigailam Andhra Pradesh tiger reserve (largest in India)

Types and Distribution of Forest and Wildlife Resources:

Even if we want to conserve our vast forest and wildlife resources, it is rather difficult to manage, control and regulate them.

Reserved Forest: More than half of the total forest land has declared reserved forest are regarded as the most valuable as far as the conservation of forest and wildlife resources are concerned.

Protected forest: Almost one – third of the total forest of the total forest area is protected forest, as declared by the Forest Department. This land is protected from any further depletion.

Unclassed Forest: These are other forest and waste lands belonging to both government and private individuals and communities.

Community and Conservation:

1. We often ignore that in India forests are also home to the traditional communities.
2. The Alwar district of Rajasthan has declared 1,200 hectares.
3. The famous Chipko movement in the Himalayas has not only successfully resisted deforestation in several areas.

Chipko Movement

1. Started in the 1970s in Garhwal in Uttarakhand.
2. Trees were prevented from being cut by forming a human circle around them.
3. It spread across the country.

Beej Bachao Andolan

1. Started in the 1980s in Tehri region of Uttarakhand.
2. Led by the farmer and social activist Vijay Jardhari.
3. Started in 1988 by the Government of India.
4. First launched in Orissa.
5. Involves local communities for conserving wildlife and restoring degraded forests.

Joint Forest Management:

1. It is launched by various states government.
2. In this programme, village communities are entrusted with the protection and management of the nearby forest.
3. Areas concerned are usually degraded or even deforested areas.
4. The first state to start this programme was Odisha in 1988.
5. Each body has an executive committee that manages the day to day affairs.