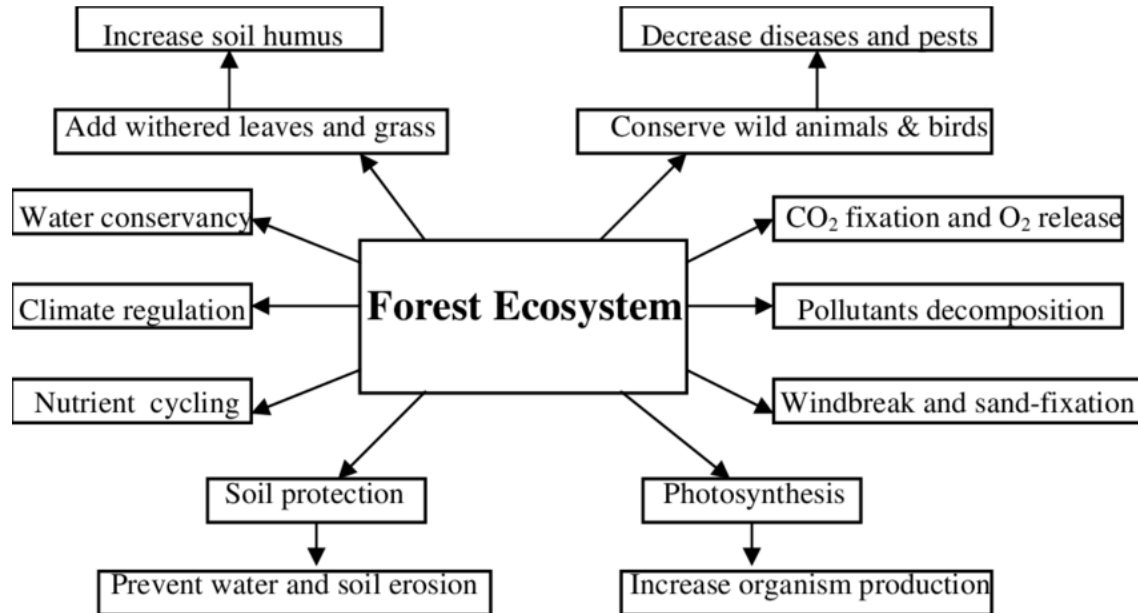




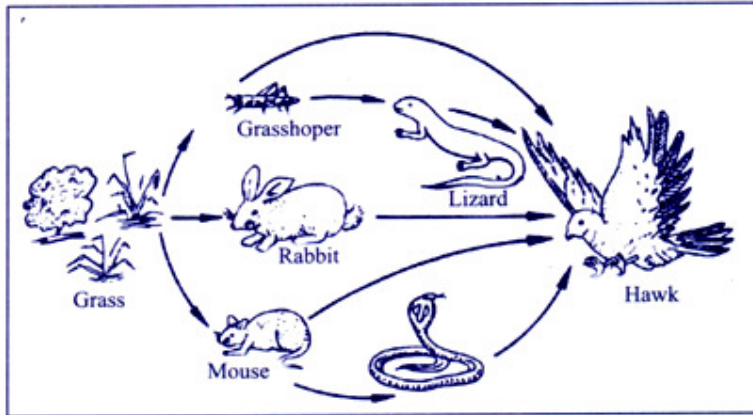
**HINTS:**

**FOREST ECOSYSTEM.**

**Forests** consist not only of living (biotic) components like trees, animals, plants, and other living things but also of nonliving (abiotic) components such as soil, water, air, and landforms. All of these components together make up a **forest ecosystem**.



**GRASSLAND ECOSYSTEM** is an area where the vegetation is dominated by **grasses** and other herbaceous (non-woody) **plants**. It is also called transitional landscape because grassland ecosystems are dominated by the grass with few or no trees in the area where there is not enough for a forest and too much of a forest.



**Fig. 1.1** Diagrammatic sketch showing a food web in a grassland ecosystem.

## **NATURAL RESOURCES.**

All the materials and energy essential for the survival and welfare of living beings including humans-are provided by nature. They are called natural resources.

A thing becomes resource only when it is used by humans to perform a function. Man lives in nature and depends on the resources of nature.

The sustenance and welfare of mankind depend upon the exploitation of different natural resources. The utilization of soil, water minerals, coal, electricity, oil, gas and nuclear energy is very important for the development of nation These resources have changed the level of living standard of man.

There are various methods of categorizing natural resources, these include source of origin, stage of development, and by their renewability.

On the basis of origin, natural resources may be divided into two types:

**Biotic** — Biotic resources are obtained from the biosphere (living and organic material), such as forests and animals, and the materials that can be obtained from them. Fossil fuels such as coal and petroleum are also included in this category because they are formed from decayed organic matter.

**Abiotic** – Abiotic resources are those that come from non-living, non-organic material. Examples of abiotic resources include land, fresh water, air, rare-earth elements and heavy metals including ores, such as, gold, iron, copper, silver, etc.

On the **basis of recovery rate**, natural resources can be categorized as follows:

Renewable resources — Renewable resources can be replenished naturally. Some of these resources, like sunlight, air, wind, water, etc. are continuously available and their quantities are not noticeably affected by human consumption. Though many renewable resources do not have such rapid recovery rate, these resources are susceptible to depletion by over-use. Resources from a human use perspective are classified as renewable so long as the rate of replenishment/recovery exceeds that of the rate of consumption. They replenish easily compared to Non-renewable resources.

Non-renewable resources – Non-renewable resources either form slowly or do not naturally form in the environment. Minerals are the most common resource included in this category. From the human perspective, resources are non-renewable when their rate of consumption exceeds the rate of replenishment/recovery; a good example of this are fossil fuels, which are in this category because their rate of formation is extremely slow (potentially millions of years), meaning they are considered non-renewable. Some resources actually naturally deplete in amount without human interference, the most notable of these being radio-active elements such as uranium, which naturally decay into heavy metals. Of these, the metallic minerals can be re-used by recycling them, but coal and petroleum cannot be recycled. Once they are completely used they take millions of years to replenish.

## CAUSES OF DEFORESTATION

The primary anthropogenic activities (human activities) that contribute to deforestation include:

- Agriculture – small-scale and large scale farming, .
- Logging – cutting of trees for use as raw material
- Mining and urban expansion – clearing of forest area for the construction of infrastructure.

According to the secretariat of the UNFCCC (United Nations Framework Convention on Climate Change), agriculture is the root cause of 80% of deforestation. Logging accounts for another 14% and the cutting of trees for use as wood fuel account for 5%. A pie-chart detailing the driving cause of the deforestation of tropical forests between the years 2000 and 2005 is provided below.

## WHAT ARE THE SECONDARY FACTORS THAT CONTRIBUTE TO DEFORESTATION?

Illegal logging, which accounts for approximately 80% of all logging activities, involves the harvesting and sale of timber in violation of the law. Corrupt government officials may accept bribes from illegal loggers and offer access to protected forest areas in return. Therefore, corruption can be viewed as an indirect cause of deforestation.

Overpopulation and population growth increase the requirement for several resources such as food and infrastructure. These requirements can, directly or indirectly, result in deforestation. For example, a huge explosion in the population of a city can result in the deforestation of the surrounding area for:

- The construction of homes and other buildings.
- Agriculture (to meet the increased demand for food).
- The construction of roads, dams, and other infrastructure.

### **CAN DEFORESTATION OCCUR DUE TO NATURAL CAUSES?**

In some relatively rare cases, the deforestation of forest areas can be traced to natural causes. For example, volcanic eruptions can burn away the forest lands surrounding the volcano. Other examples of natural deforestation include:

- Destruction of forests due to hurricanes, floods, and other natural calamities.
- Invasion of the forest ecosystem by parasites that destroy trees.
- Forest fires that are sparked by lightning and other natural phenomena.

### **CAUSES:**

**Jhume cultivation, Hydroelectric Projects, Forest fire:, Human Establishment:, Mountain and Forest Roads:, Canals: Overgrazing:, Wood Demand:**

### ***Effects of Deforestation:***

1. Increase in carbon dioxide concentration in atmosphere.
2. Deforestation results in reduced rainfall, increased draught, hotter summer and colder winter.
3. Soil is exposed to insolation, dries up and gets eroded by wind and water.
4. Timber and fuel wood availability has been drastically reduced. Forest products like resin tannin, gums, latex, lac may not be available.
5. Loss of forest leads to soil erosion and finally desertification occurs which is of no use. Moist and fertile land of forests will be converted to deserts due to decrease amount of rainfall and no floods.
6. Deforestation would result in loss of biodiversity and germplasm having devastating effect in ecological balance.