Forest resources

A forest: is a community of trees, shrubs, herbs, and associated plants and organisms that cover a considerable area that use oxygen, water and soil nutrients as the community attains maturity and reproduces itself.

Forests are the dominant terrestrial ecosystem of Earth, and are distributed across the globe. Forests account for 75% of the gross primary productivity of the Earth's biosphere, and contain 80% of the Earth's plant biomass.

According to the widely used Food and Agriculture Organization definition, forests covered four billion hectares or approximately 30 % of the world's land area in 2020.

- http://www.fao.org/forest-resources-assessment/2020/en/

More than half (54 percent) of the world's forests are in only five countries –the Russian Federation, Brazil, Canada, the United States of America and China.

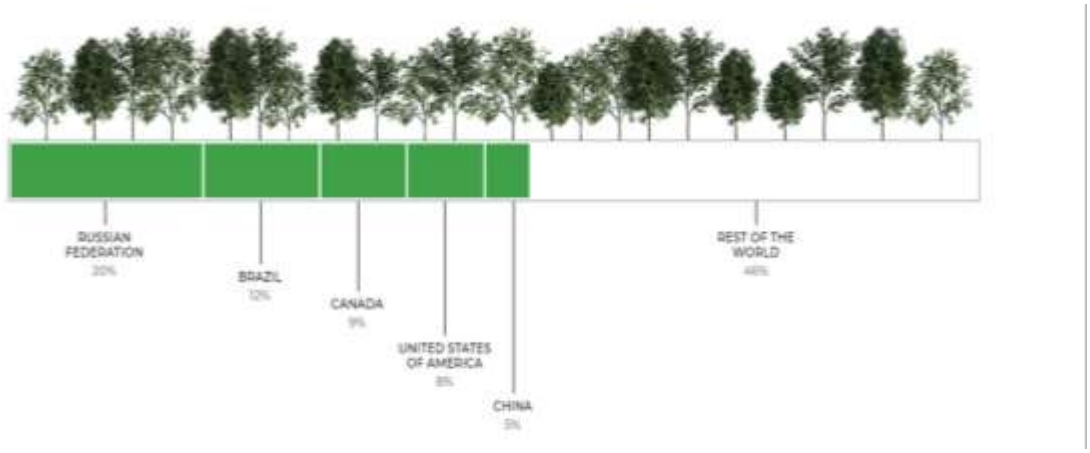

Fig. 1: Distribution of global forest area, by country in 2020

Forests at different latitudes and elevations form distinctly different Eco zones: boreal forests near the poles, tropical forests near the equator and temperate forests at mid-latitudes.

Of the major climatic regions, the tropical zone contains the highest percentage of forest at 45 percent.

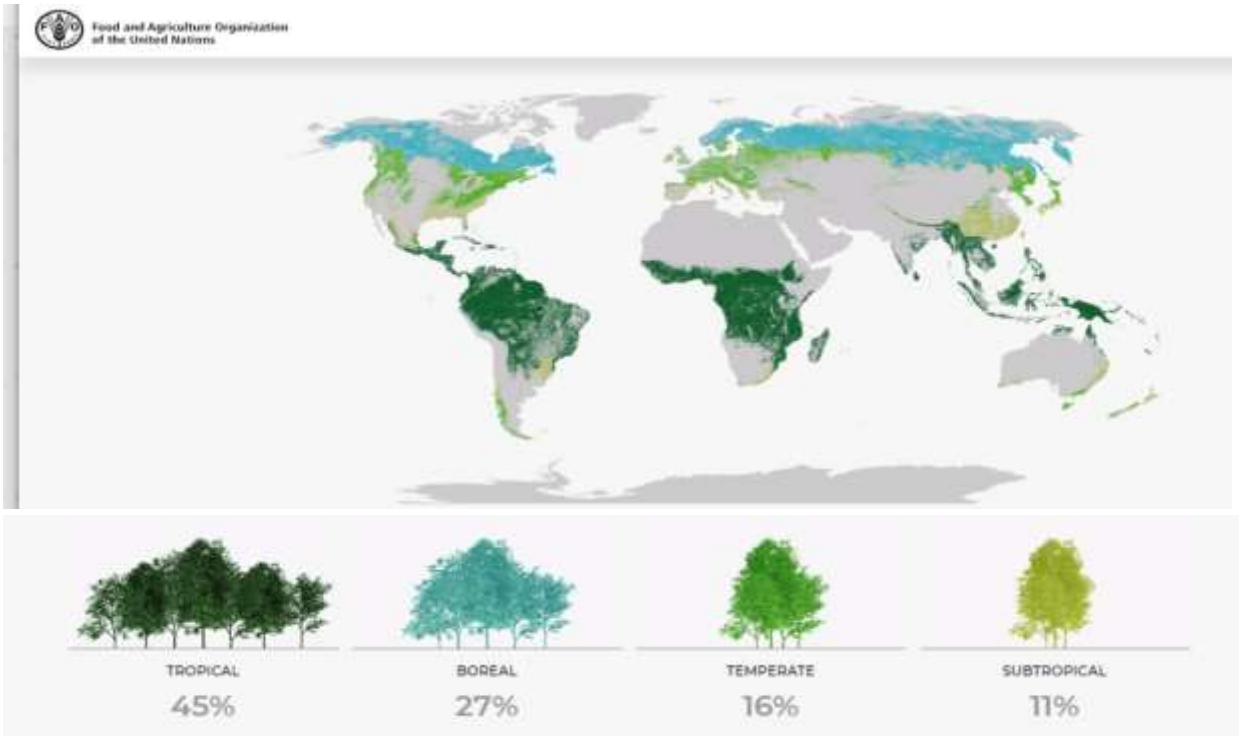

Fig.2: The area of forests according to its zone

The benefits of forest trees to human society are both direct and indirect.

Forest trees directly provide such industrial products as fibers, resins, oils, pulp, and paper; pharmaceuticals; building and other construction materials; fodder; and fuelwood. Annual wood production alone from the world's trees is 1.5 billion m^3. More than half the wood used each year becomes fuel for heating or cooking.

The indirect benefits

- Forest trees are the dominant and necessary prerequisite vegetation for the functioning of many ecosystems.
- Through photosynthesis, essentially the only mechanism of energy input into the living world, trees use carbon dioxide in the atmosphere to produce the oxygen necessary to support life.
- They also contribute to developing and maintaining soil structure and fertility.
- Forests hold soil against erosion, and their degradation or removal has exacerbated such problems as flash flooding and sedimentation in reservoirs.
- They stabilize the soils and the supply of clean water.

Classification of Forest Products

The forest products can be divided into two main classes:

A) Major Forest Products or wood based products: It includes all wood and wood based products. Such as timber, fire wood, charcoal etc.

Fig. 3: Timber

Fig. 4: Fire wood

B) Minor Forest Products or Non-wood based products: It includes all forest based products other than wood and wood based products. Such as fodder grass, fodder leave, hay, fiber, tans, dyes, oils and other products of distillation, drugs, spices and condiments, wild edibles, fruits, seeds, nuts, gums, resins, Katha, lac, silk, honey, wax, horns, hides, bones, ivory etc.

Conceptual of forest utilization

Forest utilization: is that branch of Forestry which deals with the most suitable and most beneficial methods by which forest produce is collected and converted into useful products.

Tree harvesting: means stages starting from logging and ending with their access to the market or manufactory. Then processes of treatment these logs into forms and various industrial products and marketing these products.

-Forest utilization science includes the following main branches:-

1- properties and uses of wood
2- logging (harvesting)
3- manufacturing, conditioning and treatment
4- merchandising (marketing)

The importance of the forest utilization: -

1- Being transformation of performance and efforts in nurture and preservation forest to form benefit for human directly. Thereby provides an income (revenue) for the forest owner

2. Ensure the growth and maintenance of the forest
3. Opportunities for work and good wages for labors
4. Products for consumer
5. Revenues for the government.

6- Avoid wrong harvesting because it leads to: -
a- Decline in the productivity of the forest for many years
b- May cause damage and fractions of cutting logs or of trees leave in the forest to grow until the date of harvesting.
c- May result in the dominance of one or more species of trees in the forest which are less quality.
d- Leaving the negative impact on the environment.

-Forest harvesting objective

The main objectives of harvesting operations are:
1. Prepare wood for pulp and paper industry
2. Compressed lumber industry
3. Manufacture of plywood panels
4. Wooden block plates industry
5. Fiber industry.
6. Saw log industry
7 The Formica sheets industry
8. The coal industry
9. The pillars of the buildings
10. Other uses

WHY DO LANDOWNERS HARVEST TREES?

Landowners may harvest trees from their forest for many reasons**: -**
1-may want to make a better place for wildlife.
2-They may want more light on the forest floor.
3-They may want to give trees more room to grow.
4-They may need money.

Q/ Does leave forest (except shelter (protective) and civilized forest) without harvesting is true?
A/ leaving forests without harvesting means negligence source of wealth found for the human benefit. In the virgin forests there is a balance between trees grows and a total dissolve or die as a result of the arriving post maturity, so the non-utilize of the forest is status similar to wrong harvesting, since both resulting loss and loss in quantities of wood produced