

Lecture no-1

Introduction to Forest in India

Total geographical area of India is 32, 80,500 sq. km (328.8M ha)

Total forest area 7, 50,500.00 sq. km (75.06 M ha)

Agricultural area is about 46.4%

The second National Forest Policy was enunciated (decided) in 1952 as per which 33.33% of land should be under forest for proper ecological balance. In hills 60% area should be covered under tree cover. During last two decades 2 million ha forest was diverted for non-forest purpose, Agro-industry, power and irrigation projects, housing etc. **Government has enacted the Forest Conservation Act. 1980** to ensure that no reserve forest can be diverted to any other type of forest and that no forest land can be used for any non forest purpose.

Out of total area under forest, 45.6 million ha (60%) areas in use and another 14.8 million ha (20%) area potentially exploited and remaining unexploited area as on Himalayan states, North Eastern regions and Andaman, Nicobar islands.

Sources of energy consumption in India are: Coal, 16.5% Oil 10.0% Electricity 15.7% wood 37.6% Cow dung 8.7% and Vegetable waste 11.5%

Forest:

The word is derived from the Latin word "Eairs" means "outside" Therefore forests are areas covering practically all uncultivated or untended lands covered with rather tall and dense tree growth.

Definations and Terms used in Forestry

1. **Forestry:** Forestry has been defined as 'the theory and practice of all that constitutes the creation, conservation and scientific management of forests and the utilization of their resources.
2. **Silviculture:** The terms silviculture, commonly refers only to certain aspects of theory and practice of raising forests crops. **OR** Silviculture pertains to the establishment, development, care and reproduction of

21. **Breast height:** Almost universally adopted as the standard height for measuring the girth, diameter and a basal areas of standing trees. India 4'6" (1.37m). In U.K. and most commonwealth countries 4'3" (1.30m)
22. **Coupe:** A felling area, usually one of an annual series unless otherwise stated. Preferable numbered with Roman numbers as, I, II, III etc.
23. **Crown:** The upper branchy part of the tree above the bole.
24. **Dendrology:** The identification and systematic classification of trees.
25. **Reserved forests:** an area so constituted under the Indian Forest Act or other Forests law.
26. **Protected forests:** A legal terms for an area subjected to limited degrees of protection under the provision of Chapter IV of the Indian Forest Act.
27. **Unclassed forest:** Forest land owned by Government but not constituted in to a reserved, village or protected forest.
28. **Log:** The stem of a tree or a length of stem or branch after felling and trimming.
29. **Logging:** Operation comprising felling of trees, limbing, bucking and transportation of the resulting product out of the forest timber harvesting (Bucking-Act of being)
30. **Pole:** A young tree from the time when the lower branches begin to fall off to the time when rate of height growth begins to slow down and crown expansion becomes marked.
31. **Raft:** An assemblage of logs, timbers or bamboos tied together or enclosed within a boom for transport by floating.
32. **Scrub:** Inferior growth consisting chiefly of small or stunted trees and shrubs.
33. **Stand:** An aggregation of trees or other growth possessing sufficient uniformity in composition, constitution, age arrangement or condition, to be distinguished from adjacent crops and forming a silvicultural unit.
34. **Succession:** The gradual replacement of one community by another in the development of vegetation towards a climax

Lecture no-2

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Ministry of Environment and Forests

(Department of Environment, Forests & Wildlife)

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RESOLUTION

National Forest Policy, 1988

1. PREAMBLE

1.1. In Resolution No. 13/52-F, dated the 12th May 1952, the Government of India in the erstwhile Ministry of Food and Agriculture enunciated a Forest Policy to be followed in the management of State Forests in the country. However, over the years, forests in the country have suffered serious depletion. This is attributable to relentless pressures arising from ever-increasing demand for fuelwood, fodder and timber; inadequacy of protection measures; diversion of forest lands to non-forest uses without ensuring compensatory afforestation and essential environmental safeguards; and the tendency to look upon forests as revenue earning resource. The need to review the situation and to evolve, for the future, a new strategy of forest conservation has become imperative. Conservation includes preservation, maintenance, sustainable utilisation, restoration, and enhancement of the natural environment. It has thus become necessary to review and revise the National Forest Policy.

2. Salient feature of Indian Forest Policy

2.1 The basic objectives that should govern the National Forest Policy are the following

- Maintenance of environmental stability through preservation and, where necessary, restoration of the ecological balance that has been adversely disturbed by serious

Having regard to the symbiotic relationship between the tribal people and forests, a primary task of all agencies responsible for forest management, including the forest development corporations should be to associate the tribal people closely in the protection, regeneration and development of forests as well as to provide gainful employment to people living in and around the forest. While special attention to the following :

- One of the major causes for degradation of forest is illegal cutting and removal by contractors and their labour. In order to put an end to this practice, contractors should be replaced by institutions such as tribal cooperatives, labour cooperatives, government corporations, etc. as early as possible.
- Protection, regeneration and optimum collection of minor forest produce along with institutional arrangements for the marketing of such produce;
- Development of forest villages on par with revenue villages;
- Family oriented schemes for improving the status of the tribal beneficiaries; and
- Undertaking integrated area development programmes to meet the needs of the tribal economy in and around the forest areas, including the provision of alternative sources of domestic energy on a subsidised basis, to reduce pressure on the existing forest areas.

4.7 Shifting Cultivation

Shifting cultivation is affecting the environment and productivity of land adversely. Alternative avenue of income, suitably harmonised with the right land use practices, should be devised to discourage shifting cultivation. Efforts should be made to contain such cultivation within the area already affected, by propagating improved agricultural practices. Area already damaged by such cultivation should be rehabilitated through social forestry and energy plantations.

4.8 Damage to Forests from Encroachments, Fires and Grazing

4.8.1 Encroachment on forest lands has been on the increase. This trend has to be arrested and effective action taken to prevent its continuance. There should be no regularisation of existing encroachments.

4.8.2 The incidence of forest fires in the country is high. Standing trees and fodder are destroyed on a large scale and natural regeneration annihilated by such fires. Special precautions should be taken during the fire season. Improved and modern management practices should be adopted to deal with forest fires.

4.8.3 Grazing in forest areas should be regulated with the involvement of the community. Special conservation areas, young plantations and regeneration areas should be fully protected. Grazing and browsing in forest areas need to be controlled. Adequate grazing fees should be levied to

Classification of Agro-forestry System

Different types of Agroforestry systems exist in different parts of the world. These systems are highly diverse and complex in character and functions. To evaluate understand and seek to improve them requires their classification into different categories. Several criteria can be used in classifying them, but the most common include the system's structure, functions, and socio-economic scale of management and ecological spread. According to Nair (1987), Agro-forestry systems can be classified according to following sets of criteria.

1. Structural Basis:

Consider the composition of the components; specially refer including spatial admixture of the woody component, vertical stratification or the component mix and temporal arrangement of different components.

2. Functional Basis:

This is based on the major function or role of the system; mainly of the woody components (This can be productive or protective).

3. Socio-economic Basis:

Consider the level of inputs or management (low input, high input) or intensity/scale or management and commercial goals.

Lecture no-15

Shifting Cultivation

Fallow are crop land left without crops for a period ranging from one season to several years. The objective of improved fallow systems in shifting cultivation is to recover depleted soil nutrients. Once the soil has recovered crops are reintroduced for one more seasons.

Shifting cultivation as the term implies, is a pattern of land use and a system of production of crops under which plots of land are cleared, cultivated for a short period for raising crops, after which the land is allowed to rest longer than the period of cultivation. It is a system of production almost without capital inputs.

This system is practiced extensively the north-eastern hill region comprising the states of Assam, Meghalaya, Manipur, Nagaland and Tripura (Arunachal Pradesh and Mizoram). To some extent in Andhra Pradesh, Bihar, Madhya Pradesh, Orissa and Karnataka. It is called as JHUM in the north eastern hill region and PODU, in A.P. and Orissa and considered most destructive for forest areas.

The main features of the improved fallow system of Agroforestry is that trees and shrubs.

Are not grown with crops on the same land, the best species for the fallow system should be include good N fixation in the soil.

The main function of the fallow is to maintain or restore soil fertility and reduce erosion some plants can be introduced primarily for their economic value.