



# Capacity Building for Entrepreneurship Centered Around Trees Outside Forests

Module 2: Tree plantation and Cultivation

Lecture 1: Fundamental concepts in tree cultivation/farming

# INTRODUCTION



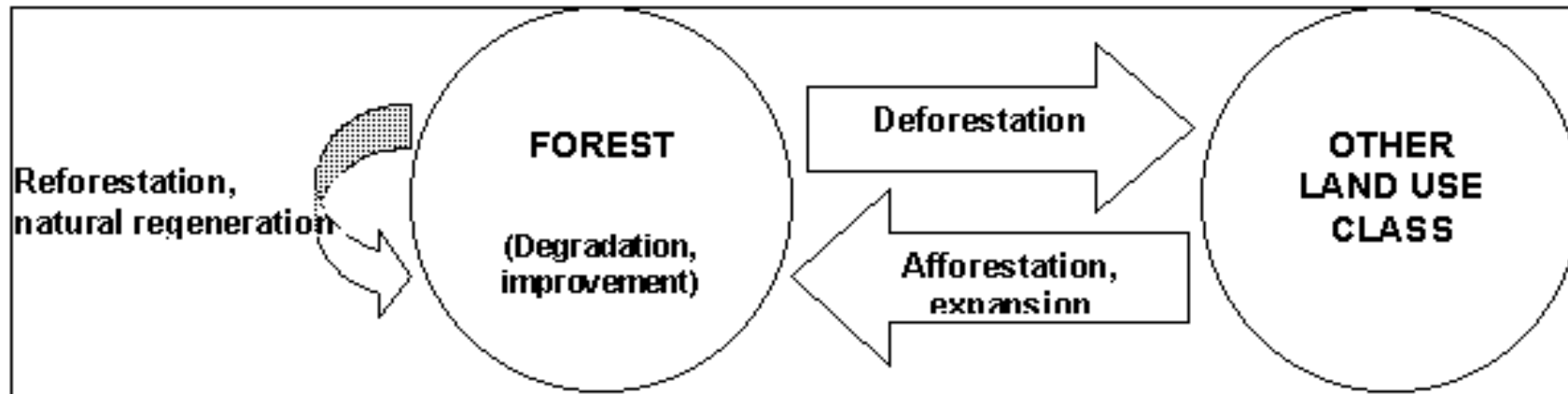
Tree: A tree is a woody perennial plants with a single self-supporting trunk which is of woody tissues and limbs called branches. Trees have leaves and roots and this are modified as per the requirement and habitat.

Plantation: Plantation is a long, artificially-established forest, farm or estate, where crops are grown for sale, often in distant markets rather than local on-site consumption.

Tree plantation : Tree plantation is the process of transplanting tree seedlings generally, for the purpose of forestry, land reclamation and landscaping purpose.

# IMPORTANCE

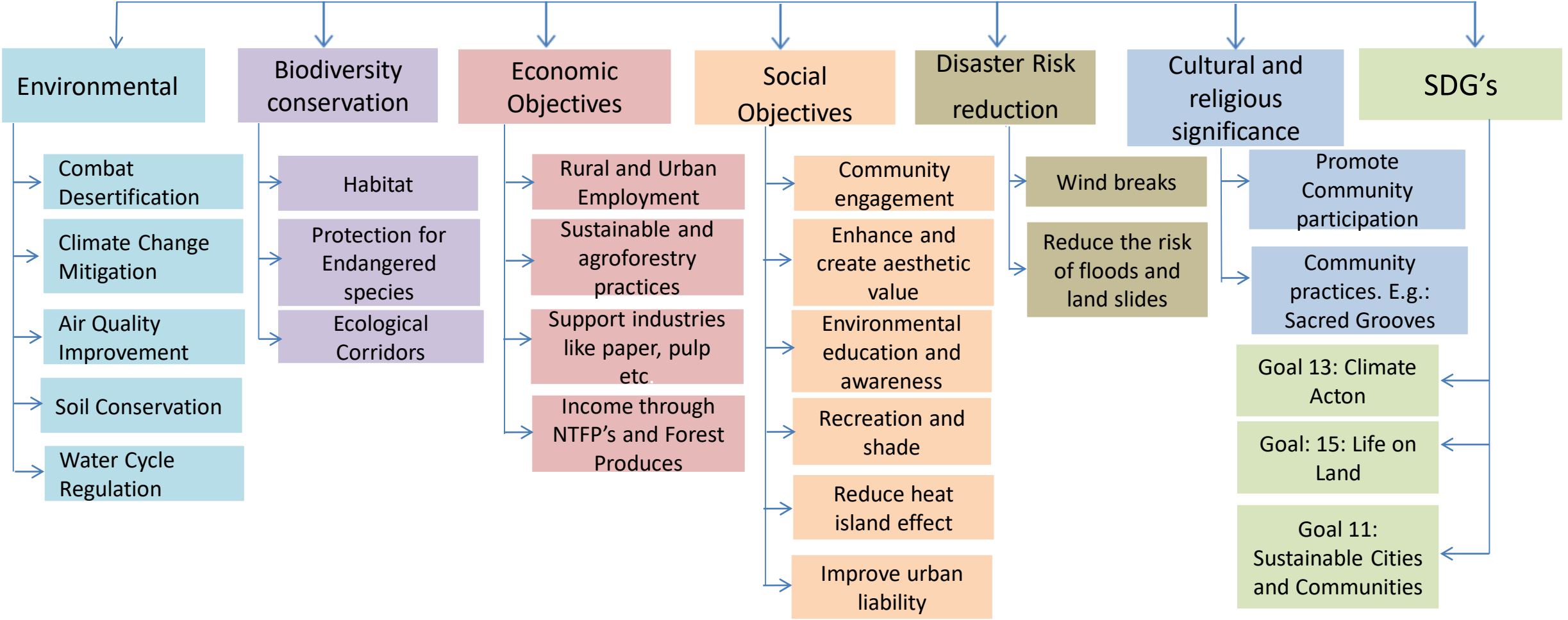
- Trees are the lungs of Earth, planting of trees is necessary for the survival of the Earth.
- It fulfils both primary as well as secondary needs. With increasing industrialization, urbanization and increase in population; the tree cover and forest cover is decrease where as the demands are increasing. Therefore, it has become very important to go plantation.



“From cradle till the graveyard we are all dependent on trees”



# OBJECTIVES



# Types of plantation



Plantation	Purpose	Example
Commercial	Economic benefits	Pulpwood, timber, NTFP's
Reforestation and afforestation	Restoration of degraded land	Agar wood and sal in Tripura
Agroforestry	Integration of trees with crop and livestock	Alley cropping, Silvopasture system
Energy	Bioenergy and fuel wood	Bamboo, Eucalyptus for biomass
Ornamental	Beautification, shade and	Road side plantation of <i>Delonix regia</i>
Wild life and biodiversity	Habitat and food for wildlife, biodiversity support	Wetland mixed native species plantation
Environmental	Ecological conservation	Mangroves plantation
Farm forestry	Use and sale on private lands	Poplar
Social Forestry	By communities for social benefit	<i>Azadirchta indica</i>
Monoculture	Single sp. For uniform production	Rubber
Mixed plantation	Mimic natural forest and reduce pest	Native spp. mixes
Silvicultural	Sustainable forest growth and harvesting	Rotational teak plantation

# Tree outside forest



Tree outside forest means all the crops recorded outside forest area. FSI defines TOF as, any tree growing outside recorded forest area irrespective of size. In the forest assessment, tree crops and woodlots outside forest area are deemed to have included in forest cover Assessment. The tree cover outside forest area constitute tree cover. Thus, tree included in tree cover constitute only a part of TOF Country has stratified different zones for the assessment of TOF and tree cover.

## Importance:

- Contribute significantly to socio-economic and ecological status of the country
- TOF given prominent place in Global forest Resources Assessment Report.
- FSI conducts TOF inventory since 1991
- Lie within urban and urban area.
- Data for estimating tree cover has been extracted from data of TOF collected by FSI.

## Benefits:

- Micro climate regulation
- Soil conservation and erosion control
- Habitat creation
- Source of forest produces and NTFP'S.
- Improve quality of life of urban area and its periphery.
- National goal of attainment of 33% of total geographical area can be achieved

# FARM FORESTRY



## Definition:

Farm forestry is an intentional cultivation of trees into farming system for both non commercial and commercial purpose. It is the practice of growing trees and shrubs on farms, primarily to support agricultural production and supplement farm revenue on smallholder farms. It is a government driven programme.

## Forms of farm forestry :

Timber Belts, plantation, woodlots, spaced tree plantings, sustainable management of the existing native vegetation

### Importance:

- It is practiced in order to increase number of tree plantation on the globe and counteract environment deterioration
- Helps economy by planting economically viable trees
- Generates more revenue to the farmers.

### Benefits:

- Soil health improvement
- Water resource management
- Crop Diversification
- Biodiversity conservation
- Diversified income
- Improved resilience to climate variables
- Boost rural employment

# Agroforestry



Agroforestry is an integrated and sustainable land use system that integrates trees with crops, pastures or livestock deliberately, on the same land.

## Importance:

- It has three important aspects i.e., productivity, sustainability and adoptability making it important to attain the nationally determined goals.
- The four important traits i.e., intentional, intensive, interaction and integration makes it more versatile system and diverse component can be included to it.

## Benefits:

- Provision of food security.
- Soil conservation and fertility enhancement.
- Improves micro-climate.
- Provision of living fences for crops and fruit trees.
- Carbon sequestration.
- Watershed management.
- Weed control.
- Boundary demarcation.
- Generate revenue.



# Structural classification of agroforestry



Agrisilviculture	Silvopastoral	Agrosilvopastoral
Improved fallow	Protein bank	Home gardens
Taungya	Trees and shrubs on rangelands or pastures	Tree-livestock-crop mix homesteads
Alley	Live fences and hedges	Woody hedge grow
Multiple green garden	Plantation crops with pastures and animals	
Multi-purpose tree on crop land		
Plantation crop combination		
Tree in soil conservation and reclamation		
Shelter belts, wind breaks and hedges		
Home garden		
Fuel wood production		



Functional classification of agroforestry	
Productive	Protective
Wind breaks Fodder Fuel wood Cloths Shelter NTFP's	Food Shelter belts Soil conservation Soil improvement

- Other important agroforestry systems
- Aquaforestry:
  - Apiculture with trees
  - Sericulture
  - Mixed wood lots

- Ecological classification:
- Humid/ Sub-Humid: Improved fallow, Home gardens
  - Semi arid/Arid: Wind breaks, Silvopastoral
  - Tropical Highlands: Improved fallow, woody perennials

- Socio- Economic classification
- Commercial agroforestry system
  - Intermediate agroforestry system
  - Subsistence agroforestry system

## CONCLUSION

The benefits of planting trees are countless, however we still overlook the importance. Hence, each one of us should take the responsibility of planting trees and sustainable use of the present resource. Plantations carried out should be suited according to the needs of the population, market demand and as suited to the climatic and edaphic factors.