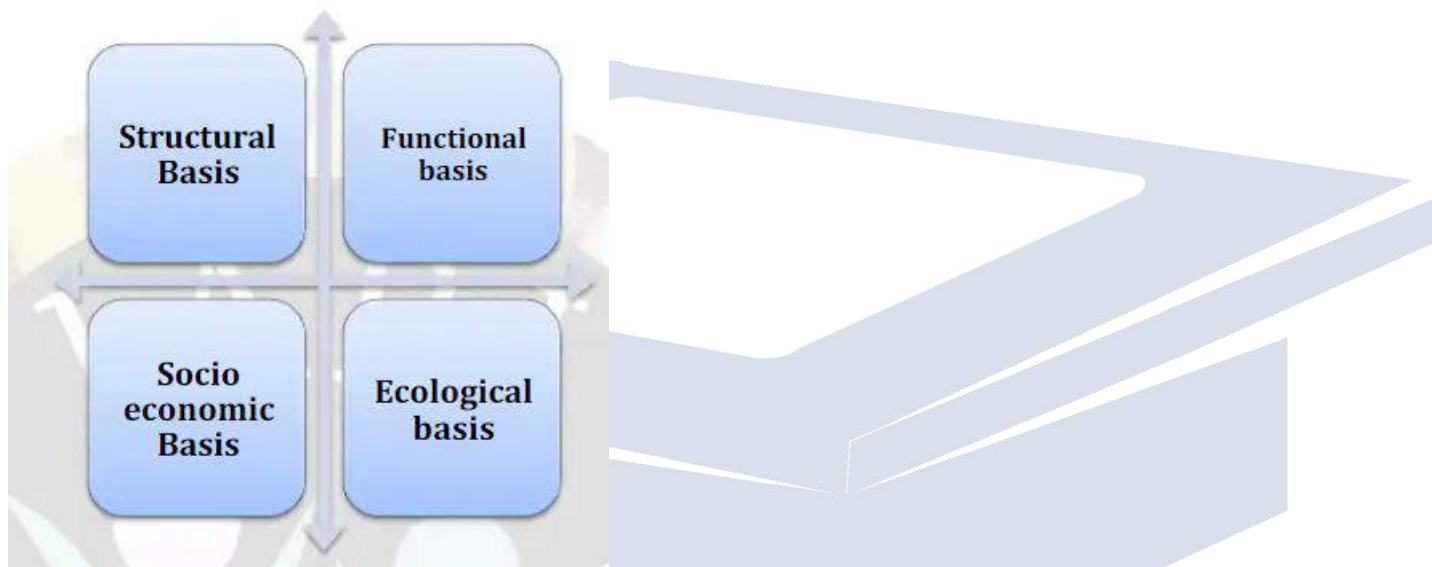


TYPES OF AGROFORESTRY SYSTEMS

Nair (1987) has classified the agro forestry systems based on the following four criteria



1. Structural Basis:

1. Nature of Components
2. Arrangements of Components

1.1 Nature of Components:

1.1.1 Agrisilviculture systems/ silviagriculture/ agrosilviculture:

Agricultural Crops+ Trees = Agrosilviculture

Under this system agricultural crops can be grown up to two years under protective irrigated condition and under rainfed farming up to four years

Based on the nature of the components this system can be grouped into various forms

1. Improved fallow species in shifting cultivation
2. Taungya system
3. Multispecies tree gardens



4. Alley cropping (Hedgerow inter-cropping)
5. Multipurpose trees and shrubs on farmlands
6. Crops combination with plantation crops
7. Agro forestry for fuel wood production
8. Shelter belts
9. Wind breaks
10. Soil conservation hedges etc.

1. Improved Fallow Species in Shifting Cultivation

- Fallows are cropland left without crops for periods ranging from one season to several years. The objective of improved fallow species in shifting cultivation is to recover depleted soil nutrients. It is called 'jhum' in the north-eastern hill and 'podu' in AP and Orissa states.

2. Taungya System:-

- The Taungya system was introduced into India by Brandies in 1890 and the first taungya plantations were raised in 1896 in North Bengal. In southern India, the system is called 'kumri'.
- It is practiced in areas with an assured annual rainfall of over **1200 1500** mm.

Taungya systems are of three types

a) Departmental Taungya

- Under this, agricultural crops and plantation are raised by the forest department by employing a number of labourers on daily wages. The main aim of raising crops along with the plantation is to keep down weed growth.

b) Leased Taungya

- The plantation land is given on lease to the person who offers the highest money for raising crops for a specified number of years and ensures care of tree plantation.

c) Village Taungya

- This is **the most successful** of the three taungya systems. In this, crops are raised by the people who have settled down in a village inside the forest for this purpose.

3. Multispecies Tree Garden

- In this system various kinds of tree species are grown mixed and production of food, fodder and wood products for home consumption and sale for cashes.



4. Alley Cropping (Hedgerow Intercropping)

- Involves managing rows of closely planted (within row) woody plants with annual crops planted in alleys in between hedges. The primary purpose of alley cropping is to maintain or increase crop yields by improvement of the soil and microclimate and weed control.

5. Multipurpose Trees and Shrubs on Farmlands:-

- Examples- *Leucaena leucocephala*, *Acacia albida*, *Cassia siamea*, *Casuarina equisetifolia*, *Azadirachta indica*, *Acacia senegal*, *Cocos nucifera* etc.

6. Crop Combinations with Plantation Crops

- Perennial trees and shrub crops, such as coffee, tea, coconut and cocoa, are combined into intercropping systems in numerous ways.

7. Agro forestry Fuel wood Production

- Fuelwood are- *Acacia nilotica*, *Albizia lebbek*, *Cassia siamea*, *Casuarina equisetifolia*, *Dalbergia sissoo*, *Prosopis juliflora*, *Eucalyptus tereticornis* etc.

8. Shelter-belt

- Shelter belt is a plantation usually made up of one or more rows of trees or shrubs planted in such a manner as to provide **shelter** from the wind and to protect soil from erosion
- **Shape and composition:** Shelter-belts have a typical triangular shape.
- **Density and width:** Shelter-belts up to 50 m width are considered ideal under **Indian** conditions.
- **Height and spacing:** The ratio of height and width should be roughly 1:10.
- **Length-** minimum length of a shelter-belt should be about 25 times its height.

9. Wind-break

- Wind-breaks are strips of trees and/or shrubs planted to protect fields, homes, canals or other areas from wind and blowing soil or sand.
- **Permeability:** A wind-break works by filtering and breaking the force of the wind. For most purposes, permeable wind-breaks which allow some wind to pass through are the most suitable.
- **Height-** On level ground a windbreak will reduce the speed of wind for about 25 times the tree height on downwind side.



Soil Conservation Hedges

Major component multipurpose and trees and common agricultural species.

Grevillea robusta, Acacia catechu, Pinus roxburghii, Acacia modesta, Prosopis juliflora etc.

Social forestry

Forestry outside the conventional forests which primarily aims at providing continuous flow of goods and services for the benefit of people. The production of forest goods for the needs of the local people is Social forestry. Thus, social forestry aims at growing forests of the choice of the local population.

Agro forestry-any sustainable land-use system that maintains or increases total yields by combining food crops (annuals) with tree crops (perennials) and/or livestock on the same unit of land, either alternately or at the same time, using management practices that suit the social and cultural characteristics of the local people and the economic and ecological conditions of the area.

LEARNIZY