Lec.8 AGRISILVOPASTURAL SYSTEMS AND OTHER SYSTEMS

The production of woody perennial combined with annuals and pastures is referred Agrisilvopastural system.

This system is grouped into two categories.

i) Home gardens

ii) Woody hedgerows for browse, mulch, green manure, soil conservation

i) Home gardens

This system is found extensively in high rainfall areas in tropical South and South east Asia. This practice finds expression in the states of Kerala and Tamil Nadu with humid tropical climates and where coconut is the main crop. Many species of trees, bushes , vegetables and other herbaceous plants are grown in dense and in random or spatial and temporal arrangements. Most home gardens also support a variety of animals. Fodder grass and legumes are also grown to meet the fodder requirement of cattle. In India, every homestead has around 0.20 to 0.50 ha land for personal production.

Home gardens represent land use systems involving deliberate management of multipurpose trees and shrubs in intimate association with annual and perennial agricultural crops and livestock within the compounds of individual houses. The whole tree- crop- animal units are being intensively managed by family labour.Home gardens can also be called as **Multitier system** or **Multitier cropping**

Home gardens are highly productive, sustainable and very practicable. Food production is primary function of most home gardens.

Structure of Home Gardens: Home gardens are characterized by high species diversity and usually 3-4 vertical canopy strata. The layered configuration and compatible species admixture are the most conspicuous characteristics of all home gardens. Generally all home gardens consist of a herbaceous layer near the ground, a tree layer at the upper levels and an intermediate layer. The lower layer can be partitioned in to two, the lowermost being at less than 1.0m in height, dominated by different vegetables and the second layer of 1.0 -3.0/m height comprising food crops such as banana, papaya and so on. The upper tree layer can also be divided into two, consisting of emergent , full grown timber and fruit trees occupying the upper most layer of

25m height and medium size trees of 10-20m occupying the next lower layer. The intermediate layer of 5-10m height is dominated by various fruit trees.

Choice of species:

a) Woody species : *Anacardium occidentale,Artocarpus heterophyllus, Citrus sp, Psiduim guajava, Mangifera indica, Azadirachta indica, Cocus nucifera,*

b) Herbaceous species: Bhendi, Onion, cabbage, Pumpkin, Sweet potato,Banana, Beans, etc.

ii) Woody Hedgerows:

In this system various woody hedges , especially fast growing and coppicing fodder shrubs and trees are planted for the purpose of browse, mulch, green manure soil conservation etc. The following species viz., *Erythrina sp, Leucaena luecocephala , Sesbania grandiflora* are generally used.

OTHER SYSTEMS

i) **Apiculture with trees:** In this system various honey (nector) producing trees frequently visited by honeybees are planted on the boundary of the agricultural field.

ii) **Aquaforestry:** In this system various trees and shrubs preferred by fish are planted on the boundary and around fish ponds. Tree leaves are used as forage for fish. The main role of this system is fish production and bund stabilization around fish ponds

iii) **Mixed wood lots:** In this system special location specific multipurpose trees (MPTs) are grown mixed or separately planted for various purposes such as wood, fodder, soil conservation , soil reclamation etc.