

# **ALTERNATE LAND USE SYSTEMS**

**Dr. G. M. SUJITH**

**UNIVERSITY OF AGRICULTURAL SCIENCES, BANGALORE  
KARNATAKA**

## **ALTERNATE LAND USE SYSTEMS**

**Land use systems which are alternatives to crop production are called by the term alternate land use systems**

**It is defined as an effective economic utilization of land without harming the natural resource structure based on land capability**

**It involves the addition of perennial component which has drought tolerance, can withstand the aberrations of monsoon and imparts stability to production**

# LAND CAPABILITY CLASSES

Land Capability Class		Increased intensity of use →								
		Wild life	Forestry	Limited grazing	Moderate grazing	Intensive grazing	Limited cultivation	Moderate cultivation	Intensive cultivation	Very Intensive cultivation
Increasing limitations & hazards ↓	I									
	II									
	III			Suitable						
	IV			for use						
	V									
	VI						Not suitable for use			
	VII									
	VIII									

Fig. 22.3. Chart showing the limitations of different LUCCs and their intensity of use.

## Basic principles

- ❖ Selection of a suitable land-use model
- ❖ Identification of trees /shrubs that are not relished by livestock
- ❖ Level of competition between bushes and crop for soil & water is minimal
- ❖ Consider the farmers preference for fruit plants
- ❖ Improved planting spot (dug out pit)
- ❖ Undertake *in -situ* water harvesting (individual) measures

## **Various models of Alternate Land Use System**

- ❖ **Agri -horticulture**
- ❖ **Agri -silviculture**
- ❖ **Alley cropping**
- ❖ **Ley farming**
- ❖ **Silvi - pasture**
- ❖ **Tree farming**

## Appropriate land use for a particular land class

<b>Alternate Land Use</b>	<b>Land Capability class</b>	<b>Rainfall (mm)</b>
<b>Agri -horticulture</b>	<b>Class II</b>	<b>800 -1250</b>
<b>Agri -silviculture</b>	<b>Class IV</b>	<b>650-900</b>
<b>Alley cropping</b>	<b>Class II</b>	<b>800-900</b>
<b>Ley farming</b>	<b>Class IV</b>	<b>300-600</b>
<b>Silvi pasture</b>	<b>Class VI</b>	<b>600-1250</b>
<b>Tree farming</b>	<b>Class VII</b>	<b>100-1250</b>

## **Ecological interaction between trees and crops**

- ❖ **Trees control soil loss and runoff water**
- ❖ **Improve soil properties through efficient nutrient recycling and nutrient conservation**
- ❖ **Combination of annual crops and trees / bushes can increase biomass production because of differences in rooting depths**
- ❖ **Trees/bushes are less prone than annual crops to extreme soil and climatic conditions**
- ❖ **Trees / bushes ensure atleast some returns even if the crop fails**

- ❖ All drylands are not suitable for crop production. These lands can be used for other than crop production based on their capabilities**
- ❖ Different models of alternate land uses should be established in an appropriate land capability class**