

CHAPTER 7



OBJECTIVES

At the end of this chapter, students should be able to:

â—† explain the meaning of agro-forestry.

â—† discuss different agro-forestry combinations.

â—† enumerate different tree species for inclusion in agro-forestry practice.

7.1 Introduction

Agro-forestry integrates the establishment of forest trees with arable crops and pasture crops. When raised together maximum benefits are obtained since they are derived from both forest trees and arable crops.

7.2 Meaning of Agro-Forestry

Agro-forestry is a term used to describe the establishment and integration of arable and pasture crops with forest trees. Examples of trees that are used in agro-forestry include *Parkia biglobosa* (ukpaka), *Tectona grandis* (teak), *Vitellaria paradoxa* (shear butter), *Chrysophyllum albidum* (African star apple) and *Blighia sapida* (ishin). Examples of food crops are plantain, maize, yam, banana, groundnut, cocoyam, cassava, cowpea and melon.

7.2.1 Importance of agro-forestry

â Trees are perennial plants that persist for many years. Therefore the trees remain while the arable crops are planted from year to year.

â The tree species are valued for their fruits, leaves, bark and sometimes root.

â They serve as windbreaks to prevent erosion.

â The trees also help to prevent desert encroachment.

â The arable crops provide sources of food to farmers and also source of income.

â They also provide forage for the livestock

7.3 Agro-Forestry Combination

The following are examples of possible agro forestry combination in selected vegetation zones

Region	Agro-Forestry Combination
Savannah	<i>Vitellaria</i> /millet/cowpea <i>Parkia</i> / <i>Vitellaria</i> /Sorghum/ millet <i>Parkia</i> / <i>Vitellaria</i> /millet/cowpea <i>Vitellaria</i> /Sorghum/cowpea
Rainforest	<i>Chrysophyllum</i> /maize/cassava <i>Blighia sapida</i> /plantain/ cocoyam <i>Irvingia</i> /bitterleaf/oil palm/ cassava Baobab/rice/millet/cowpea

while cultivating their own food crops. The arable crops are planted and within three to five consecutive seasons before the trees form a close canopy. Thereafter the trees are managed as plantation.

7.4.1.1 Conditions for practising taungya

- â Where land is scare
- â Government policies which will make people practise taungya system
- â Where there is the need to raise general standard of living
- â To serve as an alternative means of employment

7.4.1.2 Advantages of taungya system

- â It helps to increase soil fertility since leguminous crops are utilised.
- â Several crops are planted and harvested from the same piece of land.
- â There will be effective utilisation of available land.
- â It helps to prevent desertification and soil erosion.

7.5 Agro-Forestry Tree Species

The following are examples of agro-forestry tree species. *Parkia biglobosa* (ukpaka-locust bean). *Tectona grandis* (teak), *Vitellaria paradoxa* (shear butter), *Chrysophyllum albidum* (African star apple (udara)), *Blighia sapida* (ishin) *Irvingia* sp. (ogbono), *Adansonia digitata* (baobab).

Activity

Make a list of crops and trees growing together in the school farm and state their advantages.

SUMMARY

â—† Agro-forestry is a term used to describe the establishment and integration of arable crops and pasture with forest trees.

â—† Agro-forestry combination includes the following:

- ℞• *Parkia* or *Vitellaria*/millet/cowpea
- ℞• *Parkia* or *Vitellaria*/Sorghum/millet
- ℞• *Chrysophyllum*/maize/cassava
- ℞• *Blighia sapida*/plantain/cocoyam
- ℞• *Irvingia*/bitterleaf/oil palm

â—† **Taungya system:** This is a system of artificial regeneration of forest trees which integrates arable crop farming.

â—† It is a practice where land is scarce; it serves as an alternative means of employment.

â—† Agro-forestry tree species are *Parkia*, *Vitellaria*, *Chrysophyllum*, *Blighia sapida*, *Irvingia*.

REVISION QUESTIONS

Essay Questions

1. Explain the meaning of agro-forestry.
2. List five agro-forestry combinations.
3. List ten different tree species for inclusion in agro-forestry practices.

Objective Questions

1. Agro-forestry means
 - (a) a term used to describe the establishment and integration of arable crops and pasture with forest trees.
 - (b) the farming system that raises crops only.
 - (c) the integrated farming system.
 - (d) the management of forestry.
2. The system of artificial regeneration of forest trees which integrates arable crop farming is known as
 - (a) agro-forestry.
 - (b) taungya system.
 - (c) strip cropping.
 - (d) contour cropping.
3. An example of agro-forestry combination is
 - (a) yam/maize/melon.
 - (b) legume/yam/melon.
 - (c) *parkia or Vitellaria/Sorghum/millet*.
 - (d) cassava/millet/maize.
4. Different tree species for inclusion in agro-forestry practices are
 - (a) teak/millet.
 - (b) melon/cassava.
 - (c) *blighia sapida/ Irvingia*.
 - (d) okra/rice.
5. Taungya system is practised where there is
 - (a) sufficient land.
 - (b) land is scarce.
 - (c) provision of land by government
 - (d) waterlogged land.

Answers

1. a 2. b 3. c 4. c 5. b