

UNIT 3 CHARACTERISTICS OF TROPICAL CROPPING SYSTEMS

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1.0 INTRODUCTION

Tropical Africa lies south of the Sahara Desert. It extends over the entire equatorial belt of Africa and latitudinally to about 20°N and 26°S, thus exhibiting great diversity in relief, climate, vegetation and crops grown. The diversity in the number of crops grown and variations in cropping and farming systems has been attributed to the multiple racial background and linguistic grouping, differences in cultural, economic, colonial and political backgrounds and experiences, the level of technological development and resource availability. These aspects have great implications for the characteristic features of tropical agriculture.

2.0 OBJECTIVES

By the end of this study, you should be able to understand:

- the basis for the predominance of the traditional multiple systems of cropping and farming in tropical Africa
- the external factors which influence the traditional cropping systems.

3.0 MAIN CONTENT

The characteristics of tropical agriculture are strongly influenced by the prevailing customs and the needs of the farmer.

3.1 The General Characteristics of Tropical Cropping Systems

- i. there is a diversity of farming systems ranging from “true” shifting cultivation where the settlement is moved to permanent cultivation;
- ii. “true” shifting cultivation is rare and restricted to certain areas;
- iii. permanent cultivation occurs in compound farms, kitchen or homestead gardens, some soils of high fertility, confined sites, and overcrowded areas of high population densities;
- iv. the compound farm system is the most widespread permanent cropping or farming system and often forms the nucleus of other field systems;
- v. semi-permanent long and short bush or planted fallow systems vary in cultivation period relative to length of fallow;
- vi. the most important staples and cash crops are usually grown in the first year following clearance of forest, natural bush, planted fallow or grassland;
- vii. intercropping is widespread with the highest complexity in the compound gardens, especially in the rainforest where annual staples, vegetables and perennial fruit trees are intercropped;
- viii. mixed intercropping and relay intercropping are more common than sequential cropping monocultures;
- ix. classical crop rotations involving sequences of crops grown in monoculture are rare in traditional farming systems;
- x. farm sizes are usually small ranging from less than 1 ha up to 5 ha;
- xi. cash or export crops are more likely to be grown as sole crops or in association with fewer crops than non-cash staples;
- xii. farming involves simple tools and much human labour;
- xiii. the most widespread land clearing systems involve the use of fire; and
- xiv. most cropping systems rely on rainfall except some locations in semiarid and arid areas where irrigation is practised. The uncertainties in rainfall distribution and intensity determine the variations in cropping patterns and mixtures.

3.2 Factors Causing Variations in Tropical Cropping Systems

Variations and changes in cropping systems are caused by

- i. the introduction of Asian crops such as taro, water yam, bananas and rice and American crops such as maize, cassava and sweet potatoes;
- ii. population growth, which follow the introduction of Asian and American crops;
- iii. the development of markets for perennial crops;
- iv. expansion of cassava production due to its adaptation to shorter periods of fallow leading to lower soil fertility and demands for cheaper staple foods in urban centres;
- v. development of commercial production of food crops and market gardening-especially close to urban centres;
- vi. development of railways, road systems, and markets and the growth of settlements and farms along roads and railways and close to markets; and
- vii. increased fruit and vegetable production for sale and in support of local canning industries.

4.0 CONCLUSION

In this unit, you have learned that:

- i. agriculture is characterized mainly by traditional multiple systems arising from diverse cultural, economic, colonial and historical backgrounds, among other factors, and
- ii. external factors such as population growth, commercialization and modernization caused variations in traditional cropping systems.

5.0 SUMMARY

Tropical agriculture comprises predominantly of traditional multiple cropping systems which vary with prevailing customs and needs of farmers, and changes with population pressure, commercialization and modernization, etc.

6.0 TUTOR-MARKED ASSIGNMENT

1. What two factors influence the characteristics of tropical agriculture?
2. Enumerate any five characteristics of agriculture in the tropics.
3. What factors account for variations in tropical cropping systems?

7.0 REFERENCES/FURTHER READINGS

Okigbo, B.N. and Greenland, D.J. (1976). *Intercropping Systems in Tropical Africa*. Ibadan, Nigeria: IITA Reprint Series N0. 96, Multiple Cropping, IITA.