COURSE GUIDE

CRD 122
NIGERIAN AGRICULTURE

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This course guide tells you in brief what NIGERIAN AGRICULTURE is all about. It is a semester, 3-credit, BSc Cooperative and Rural Development course. The course is made up of thirty units and the units are collapsed in five modules.

The overall aim of NIGERIAN AGRICULTURE is to enable you understand the characteristics of the various sectors of the economy. You will learn about the features of the various sectors.

After that, the focus will be shifted to the challenges that impinge on government efforts. Other issues you will cover include the strategies and policies embarked upon by the government of each sector of the economy.

To achieve the stated aims, the course sets specific objectives at the beginning of each unit which you should read before studying the unit. You should endeavour to look at the objectives after completing each unit to ensure that they meet the requirements.

To complete the course, you are required to study the units, read the textbooks and other materials which will be provided by the National Open University of Nigeria. Each unit contains activities and tutor-marked assignments for assessment purpose.

There is a final examination at the end of the course.

There are two parts of assessment of the course. First answering the tutor- marked assignments, and second there is a written examination. When computing the assignments, it is expected of you to apply the knowledge required during the course. There are thirty tutor- marked assignments in this course and you are encouraged to attempt all. However, you only need to submit twelve of the thirty assignments. The highest five of the twelve marks will be counted.

Each of the five assignments counts 8% toward your total course marks (8% X 5) = 40%. The final written examination for this course will be of three hours duration and will have a maximum value of 60% of the total grade.

The examination will consist of questions which reflect the course content.

The time between completing the last unit and sitting for the examinations will consist of questions, which reflect the course content.

The time between completing the last unit and sitting for examination should be used to revise the course. It may be useful to review your activities and tutor- marked assignments before the examinations.

The break-down of the course marking scheme can be read from this table.

Table 1: Marking Scheme

Assignment	**Marks**
Assignments 1-12	Ten assignments, best five of the ten counts
	8% each (8 X 5 = 40%) of course marks
Final examination	60% of overall course marks
Total	100% of course marks

One of the great advantage of distance learning is that you can read through specially designed materials at your own pace, and at a time and place that suit you best.

It may take place in an isolated village with a hurricane lamp or in an urban centre with electricity but the lectures (replaced by study units) is the same.

Just as a lecturer might give you an in-class exercise, your study unit provides activities and tutored marked assignments for you to do at appropriate points.

Each of the units follows a common format in this sequence:- introduction to the subject matter, objectives (let you know what you should be able to do by the time you have completed a particular unit); the main body of the unit (guides you through the required reading with activities), conclusion, summary, tutor-marked assignments; and further readings. Activities are meant to help you achieve the objectives of the unit and prepare you for the tutor-marked assignments and the final examination. When you have submitted an assignment to your tutor, do not wait for its return before commencing work on the next unit. When the marked assignment is returned, go through the comments of your tutor carefully and mail any questions or any difficulty encountered to him/her.

MODULE 1

UNIT 1 AGRICULTURE AND ECONOMIC DEVELOPMENT IN NIGERIA

CONTENT

1.0 INTRODUCTION

Agriculture is considered the backbone of economic activity in Nigeria. This is because agriculture has some links with some other sectors, for instance industrial sectors, thus, the development of this sector could be expected to lead to development in the other sectors and consequently, to economic development and growth.

However, agriculture involves the cultivation of land, raising and rearing of animals for purpose of food for man, feed for animals and raw materials for industries. It involves cropping, livestock, and forestry, fishing, processing and marketing of these agricultural products. You can say that agriculture can be classified as crop production livestock, forestry and fishing.

Furthermore, you can observe that the importance of agriculture in our society cuts across being a source of food and raw materials for industries to provision of job opportunities and the source of foreign exchange earnings. This is why the government places more emphasis on developing the agricultural sector than other sectors.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- explain why agricultural development is very important in our society
- identify the organization of agricultural activities
- outline the problems that inhibit the development of agricultural activities
- list the different strategies and policy measures that the government has adopted over the years to improve this sector.

3.0 MAIN CONTENT

3.1 Significance of Agricultural Development

i. Five main areas of agricultural sector contributions include:
ii. Provision of food needs of the populace
iii. Export production to increase farm incomes and to provide foreign exchange
iv. Expansion of domestic market for the growing industrial sector through rising net farm incomes of the farm population
v. Provision of manpower for industries and other non-farm activities
vi. Provision of capital for infrastructural development and the expansion of secondary industries.

In Nigeria, we witness a case where agricultural sector contributions, however, have been less than adequate in the five (5) main areas. We can now link these reasons for the underdevelopment of Nigerian economy. However, lets now discuss its contributions to economy.

(I) **Food Provision:** Food provides the basic human need and energy. Before 1970, food supply in Nigeria was quantitatively adequate. The problem by this time was poor quality. e.g. much of carbohydrate and little or no protein. The abundance of food by this time was due to low food prices. From then (1970 onwards) food shortage has been a permanent problem reflected in high food prices and growing expenditure on food imports.

You could imagine how importation of food since 1970 has had negative implications. This could be seen in relation to:

i. Waste of foreign exchange, the foreign exchange spent on food ought to have been used for capital importation.
ii. Destruction of local production capacity. This is because imported food tends to displace locally produced ones in terms of quality.

(II) **Export Production:** Exports could be considered as a means of increasing savings and investment level. Through sales, farmers have normal incomes and can thus save. The essence of purchasing

capital goods is to raise productive capacity. In the colonial days, agricultural export earnings did account for the growth of investment within and outside the agricultural sector. But from 1970 to date, earnings from agricultural exports have dropped because of:

i. Poor performance of the export crops sub sector.
ii. Increased local demands for export crops. Local industries now require same crops we formerly exported.

(III) Expansion of Domestic Market: The size of the market often determines the optimum level for industrial production where market is small industrial production is restricted and vice versa. As of the present, owing to the poor performance of the agricultural sector it is not a source for effective demand for industrial goods. Most goods produced in the industrial sector don't fit into the needs of farmers.

(IV) Manpower Provision: It is supposed that the agricultural sector provides manpower for other sectors. In this connection, it is expected that labour will be transferred from the agricultural to nonagricultural sector.

The labour transfer could only take place if we have a high production in the agricultural sector. In Nigeria, movements have been registered but largely into the urban areas. This is, however, not good enough to bring about development. The movement has been but for economic, social, and even religious reasons. These kinds of movements have both negative and positive effects on both areas of original site and destinations.

(V) Capital Provision: The agricultural sector is often looked up to for providing funds for development because, considerable funds exist in agricultural sector.

This surplus in the agricultural sector is to be extracted through taxation by the government and the revenue from this source is used to provide public goods and services e.g. in the Old Western regions and Northern regions, infrastructures were provided through agricultural sector. In those days, marketing board were used for such purposes.

As of now, the poor performance of agricultural sector doesn't guarantee (show) a good government policy.

Activity 1: Do you think that agricultural development is necessary for the economy development of Nigeria?

3.1 Reasons for Agricultural Development in Nigeria

In Nigeria, like in most developing countries, the agricultural sector is of primary importance. This is because the sector has some links with some other sectors of the economy. Thus, development in the sector could be rightly expected to lead to development in the other sectors and, consequently, to economic development and growth.

One of the means by which agriculture can contribute to the development effort. Is through the provision of an adequate and well-balanced food supply for the increasing Nigerian population. The availability of an adequate food supply is vital because food shortages will lead to higher prices, which in turn, may lead to demand for higher wages. This could have some adverse effects on the level of investment and therefore on the rate of economic growth. Additionally, an inadequate local food supply means that massive importation of food may have to take place. This, again, could be a drag on economic growth as the nation's foreign exchange will be used to finance food importation rather than for buying capital equipment which is necessary

3.2 Export Potential

It is important to note that the products of the agricultural sector are not only food crops but also primary products that could serve as raw material for many industries both at home and abroad, especially the agro-allied industries. In these connections, products such as cotton, rubber cocoa, coffees, timber, are processed by home industries and serve as exports for the country. However, industries based on the processing of these agricultural crops cannot thrive unless the crops are adequately produced and this can only occur if the agricultural sector is
very well developed. It is, therefore, essential especially for a developing
country like Nigeria, that the sector be given very close attention.

3.3 Increase in Volume of Output

Developments in the agricultural sector would make it possible for the farmers to increase their volume of production, which would increase the amount of surpluses that they have for sale. In this regard, the end result of this is likely to be an increase in the income of the farmers. This will also give them greater purchasing power for the products of the industrial sector. In this end, this will lead to increased industrial products and, hence, to the growth of the industrial sector.

3.4 Employment Opportunity

Development in the agricultural sector would provide more employment opportunities for people. Some of the people would be directly engaged in the production of the agricultural products and some others employed in the industries that are based on the products of the expanding agricultural sector.

3.5 Organisation of Agricultural Activities

Nigerian agriculture is traditional in nature. This is because it is dependent on very low techniques reflected in the tools used.

In addition, the average farm size of about 1.2 hectares is very low. In the developed world, the average is about 10 hectares. So, the small size, combined with low technical methods makes it-traditional. To understand the backwardness of the agricultural sector you have to look at it from the angle of resource, utilisation.

Three different pattern of resources utilisation exist viz:
a) Land -Surplus Economy
b) Labour-Surplus Economy
c) Mixed Variable Proportion Economy

Land-Surplus Economy
This refers to low man-land ratio areas. That is areas of low population densities. Specific example of such areas are; Borno State, Taraba, Bauchi States etc. The farming technics applicable in these areas include shifting cultivation and bush fallowing. These practices are appropriate because they reflect sound economic reasoning, as land is abundant.

The Labour-Surplus Economy
This refers to areas of high man-land ratio. Such areas include; Onitsha, Owerri and Southern part of Cross River State. Population density in these areas is about 1000 person/sq.km. Kano also exhibits such characteristics. Farming technique in these areas is labour intensive. In other words, an attempt to increase yields means employing more labour.

Mixed Variable Proportion Economy
This refers to areas where both land and labour are variable proportion, for example, Benue and Anambra States. In this category, to increase production will require increment in both land and labour simultaneously. The other features of the agricultural sector will include.

Communal Land Ownership
Under this, titles to land are invested to groups and families but not individuals. Individuals only have the right to use land but they cannot claim ownership of it. Consequently, one cannot sell land. In some parts of the country, particularly the North, land belongs to the government. The Nigerian government has, however, been making moves to control land in all parts of the country in order to enhance the availability of land to everybody. In essence, communal land owner-ship retards productivity. Gradually, the situation (communal land ownership) is changing.

Efficient Utilisation of Resources

Nigerian farmers are efficient in the utilisation of scarce resources. Whenever it is necessary, farmers have been known to reallocate land and labour in order to maximise profit, for instance, during the colonial era and Structural Adjustment Programme (S.A.P.) farmers shifted to cocoa production.

Farmers respond timely to changes. When new crops are available, farmers embraced it, provided it is profitable. For instance, crops like groundnuts and cocoa were brought from outside and farmers embraced it because they were found to be profitable. The use of fertilizer is another good example of positive reaction by the farmers.

In other instances, they reject changes in the introduction of single cropping system. Farmers found that this was not profitable and it was risky to put all eggs in one basket.

Regional Diversity in Production

Agricultural production in Nigeria exhibit great diversity in terms of production and regional specialisation. These include:

- Roots crops e.g. yams, cassava etc.
- Grains e.g. rice, beans e.tc.

There is the grain economy of the North, and, the root crops economy of the South. This variation is linked to variation in climatic conditions
in the country.

The implication of this variation is that, the potential for internal trade and the possibility of famine in Nigerian is reduced because the failure of one crop in one part of the country is supplemented by the other part of the country.

Organisation of Production

The organisation of agricultural production in Nigeria reflects a shift from unimodal to bimodal.

Bimodal is a situation of large mechanized farms existing side by side with small farms. The small farms don't enjoy much government support.

The ultimate intention is to porch out the small-scale farmers. In the unimodal system, the emphasis is on the small-scale farmers. And government usually provides essential facilities.

Studies have shown that unimodal is more important because it generates a fair distribution of income and high level of employment. Even in terms of output the unimodal proves to be more important.

The Plantation Agriculture

This type of agricultural activities makes use of modern techniques. But it's accountable for a relatively small proportion of the Nigerian agricultural output.

Activity 2: What are the factors responsible for the poor performance of the agricultural sector?

3.6 Factors Responsible for the Poor Performance of Agricultural Sector

3.6.1 Lack of Appropriate Technology

Local (primitive) technology e.g. hoes and cutlasses do not support agricultural production to a great extent. For the past years, the growth rate of the agricultural sector has been deteriorating.

This problem could be solved using invention of new tools. The alternative is for importation of these tools.

3.6.2 Inadequate Supply of Agricultural Inputs

Some reasons could be advanced for the inadequate supply of inputs:
- poor distribution network which prevents distribution of goods manifest in poor road infrastructure
- a bias distribution policy in which case the big farmer is favoured.

However, the government is trying to address this situation through Agricultural Development Projects (ADPs) and other agricultural programmes.

3.6.3 Inadequate Extension Services

These are designed to teach farmers how to manage input. The services of the extension workers in Nigeria are inadequate because of:

- low extension ratio between the farmers and the extension workers. The ratio of agent to farmers is about 1:20
- the extension agents themselves are poorly trained and motivated.

In consequence, that there is lack of enough knowledge by farmers to improve output. This problem of extension services is being addressed through the establishment of agriculture institutions throughout the country.

3.6.4 Poor Marketing Facilities

Staple food crops have always been marketed by the traditional methods of marketing and distribution, the characteristics feature of which is the need for a large number of middlemen between the producer and the consumer. This method of marketing is, of course, beset with problems, there is a dearth of storage and processing facilities; pricing is often done by haggling, grades and measures are not uniform.

3.6.5 Diseases, Pests and Evasion

The effect of all these is the reduction in output. Measures to address this problem include: afforestation programmes and introduction of pesticides.

3.6.6 Labour Shortage

The rural urban migration experienced in the country has greatly affected the agricultural activities in the rural areas. Hence, farmers in rural areas have tended to pay highly for labour hired.

3.7 Strategies to Revamp the Agricultural Sector

As earlier indicated, given the relevance of this sector to the development of Nigeria the federal and state government have as their objectives to:

Increase Production of Food
The major objective of the government is to increase production of food and other raw materials to meet the demands of the growing population and the rising industrial sector. However, it is the intention of the government to achieve self-sufficiency in food and to increase the local contents of domestically manufactured goods, especially those that utilise agricultural products as inputs.

Diversify Foreign Exchange Earnings
The government's intention here is to make efforts to achieve increased production and processing of export crops with a view to expanding and diversifying the country's foreign exchange earnings. This is to avoid the danger of relying on crude oil as the only source of foreign exchange earnings.

Employment Opportunities
The governments intend to expand the employment opportunities of the sector in order to absorb the increased labour force of the economy.

Activity 3: What policy measures can be adopted to enhance the productivity of this sector?

To achieve these objectives the following policy measure should be adopted in order to address the problems constraining the development of the agricultural sector.

Price Incentives
The government should give some price incentives by way of guaranteed minimum prices to producers. Such prices should be kept under constant review and the administration would be improved to ensure that the desired purpose is achieved. A new marketing arrangement is expected to address itself to this since under the new arrangement the two - tier system of produce taxation (export duty plus produce sales tax) has been cancelled and prices are now fixed with no trading surpluses" in view.

Government Direct Involvement
Government should be involved directly in the production of agricultural products. This is to be done through the establishment of food production companies, through equity holding in purely commercial joint ventures with the private sector and by commodity Boards, Grain Production Company and State Agricultural Development Corporation going into partnership with foreign investors.

Fiscal Incentives
The governments should also give fiscal incentive to companies wanting to go into large-scale agricultural production. Such incentives would include income tax relief for pioneer enterprises, duty free importation to farm machinery and provision for carrying forward losses. Agricultural production and processing have been transferred from schedule II of the Nigerian Enterprises Promotion Act (NEPA) to schedule III. The effect is that foreigners can now own up to 60 per cent of the capital of any of the companies engaged in this activity.

Credit Facilities
Efforts should be made to expand credit facilities to the fanners. Short and medium-capital would be made available to farmers through the Agricultural and Cooperative Banks and the Agricultural Credit Guarantee Scheme. Furthermore, the state Agricultural Corporations would be strengthened to enable them to perform their functions more efficiently and effectively.

Agro-Allied Industries
Agricultural processing would be intensified by the setting up of agro-allied industries, farmers would obtain higher and steady prices for their products since middlemen would be eliminated.

Other Policy Measures
These will include subsidising of essential inputs like fertilizers, pesticide and improved seeds; intensifying mechanisation of agricultural production and providing wider extension services. If the governments are able to implement these policy measures one would rightly expect that agriculture would begin to play the key role in the development of the nation.

4.0 CONCLUSION

Inspite of the importance of agriculture in the developmental process of NIGERIAN AGRICULTURE, the contribution of the sector to the Gross Domestic Product has been on the downward trend. This situation has been partly due to the emergence of oil as an important commodity and partly due to the inadequate government support for the sector.

5.0 SUMMARY

The customary approach to the role of agriculture in economic development is formulated in terms of the contributions the agricultural sector can make or the functions it can perform during the process of economic development in a country. Therefore agricultural development can promote economic development of the our country through:

- provision of food needs of the population
- export production to increase farm incomes and to provide foreign exchange
- expansion of domestic market for growing industrial sector through rising net farm incomes of the farm populations

To achieve these, the government has to put in place certain policy measures and programmes.

6.0 TUTOR-MARKED ASSIGNMENT

The agricultural sector in Nigeria has not made significant impact on the economic developmental process of the country.

i. State the reasons
ii. Outline the government policies and strategies to restructure and transform this vital sector.

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UNIT 2 INTRODUCTION TO AGRICULTURE

CONTENTS

1.0 INTRODUCTION

This first unit is designed to enable you understand the impact of agriculture on the socio economic development of Nigeria. The unit will, briefly, explain the introductory part of the course to you. It will also take you through the importance of agriculture.

Now, go through all the sections carefully, as they are designed to make you understand the course better. For instance, pay due attention to all the self-assessment exercises; this will enhance your understanding of the content of the unit, so that the stated objectives for the unit can be achieved.

2.0 OBJECTIVES

At the end of this unit, you should be able to: define agriculture state the branches/divisions of agriculture explain the importance of agriculture.

3.0 MAIN CONTENT

3.1 Origin of Agriculture

Right from the creation of man, agriculture has been a major occupation in existence. Man has survived as a hunter and as a gatherer of fruits; he has depended on the elements of nature such as vegetation, rivers and lakes, just as all other living animals have done. The early man- in the course of searching for food, clothing and shelter, adopted agricultural practices as his technical skill and materials resources grew. His primary objective, then, was to get fed and once this was accomplished, he was contented. With the passage of time, man observed that seeds thrown away germinated and produced fruits similar to the original ones consumed. Sticks and woods were the first farming tools. By trial and error, some animals were made to live in close contact with man through the keeping of the young ones caught during hunting. Animals were, thus, domesticated.

Today, man consciously selects plants and animals, according to the principles of genetic modifications and breeds form more closely adapted to his requirements. These advances in breeding plants and animals, advances in the use of irrigation, the exchange of crops between America, Europe and Africa, the development of fertilizers and pesticides and the invention combustion engine, have revolutionised primitive agriculture in many parts of the world.

In many developing countries like Nigeria, increase in food production is still often obtained by the dependence on traditional agricultural practices, rather than mechanised farming. The development of new varsities of crops and exotic breed of animals have resulted in a very substantial increase in world food production- an increase sometimes referred to as the green revolution. However, it is increasingly clear that the use of rapid growing varieties of crops requires a very heavy input of fertilizer and pesticides. Needless to say that using fertilizer and pesticides can be very expensive, and can constitute environmental hazards when they are used indiscriminately and without consideration for their long-term effects on the total environment.

SELF-ASSESSMENT EXERCISE

Look around you, or think of the past and mention three types of traditional farming and human behavioural patterns in agriculture.

3.2 The Meaning of Agriculture

Agriculture, to many people, simply implies food production. The word agriculture came from two Latin words- "ager" and "cultura", meaning field and cultivation, respectively. Hence, the term agriculture, literally, implies field cultivation and production of livestock. On the other hand, a concise definition of agriculture proposes that it is the science and art of cultivating the soil, production and management of crops, livestock production- preparation and processing of their products and byproducts for the use of man. It also involves the disposal of these products through marketing. Agricultural activities begin with the clearing and preparation of the land for food production, and end with the final consumers. The

activities of small-scale industries connected with the processing of agricultural products also come under the purview of our definition of agriculture here.

3.3 Scope of Agriculture

Agriculture is a subject/course with a wide range of activities. It is an applied science, which makes use of the principles of the basic sciences such as biology, chemistry, physics and geography. It is therefore studied under the following specialised disciplines:

a. Agronomy This is the study of the relationship between crops and soil. Agronomy can be further split into soil science and crop science. While soil science involves the study of soil components as they relate to crop production, crop science is concerned with the physiological development and production of crops for the use of man.

b. Agricultural biology This is another discipline related to crop as being affected by pests and diseases- and their control, for increased agricultural production.

c. Agricultural biochemistry and nutrition This aspect involves the study of the biochemistry of all agricultural products and their nutritional value. It also relates to the formulation/production of livestock feeds.

d. Agricultural economics This is the application of basic economic principles in the operations of the agricultural industry. It involves allocation of resources, organisation of farms, availability of agricultural inputs, pricing system of inputs and outputs and marketing of agricultural products. The effective utilisation of limited agricultural resources with a view to attaining optimum output is at the core of agricultural economics. In like manner, formulation and study of agricultural policies, programme planning, finance and the demand and supply of agricultural products are important components of agricultural economics.

e. Agricultural extension The agricultural extension worker is mainly concerned with the behaviour of the rural populace and their attitudes toward changes. There are various methods of, effectively, transmitting agricultural innovations to farmers. Where appropriate, agricultural extension also he1ps to build up groups of local farmers and organisations, so that they can benefit from extension programmes. Agricultural extension, therefore, provides the indispensable elements that farmers need to improve their agricultural productivity.

f. Animal science This discipline entails the production and management of animals (livestock) and their various products.

g. Veterinary science This is similar to animal science, but more inclined to specialised study of all the medical issues relating to livestock and other domesticated animals including cattle, goats, sheep, dogs and birds.

h. Forestry This relates to the cultivation of economic trees for the use of man.

i. Wild life This is the discipline that deals directly with the production and management of wild life.

j. Fisheries This relates to the production and management of fish and their products.

k. Agricultural engineering This is the study that deals with farm machinery and mechanisation. Agricultural engineers are inventors of agricultural implements; they design, fabricate and maintain various agricultural implements and equipment used within the agricultural sector.

SELF-ASSESSMENT EXERCISE 2

Based on your reading of section 3.3, list the specialised disciplines in agriculture.

3.4 Importance of Agriculture

A thorough understanding of the meaning and scope of agriculture, as discussed in the preceding sections above, reveals the extent of the importance of agriculture to the survival of mankind. Therefore, it cannot be neglected; rather, it should be accorded priority, in terms of development programme, especially, in the third world or developing countries like Nigeria. In general terms, agriculture provides the following to any economy:

Food

Agriculture provides the basic food requirements for the teeming population of the world. Owing to improved standard of living and improved medical and health services which have increased life expectancy and reduced infant mortality, the population of the world is increasing at a fantastic rate. This means increased demand for food. The fact that this teeming world population cannot depend on the collection of wild fruits and animals for their food emphasises the importance of agriculture.

Self-sufficiency in food production is one of the cardinal objectives of a nation, especially Nigeria. No nation delights in persistent dependence on other nations for her food supply. Self-sufficiency in food production implies the following:

- production of food, in adequate quality, to meet the nutrition requirements of all classes of the populace; thus preventing malnutrition, which can manifest as Kwashiorkor, marasmus and other devastating accompanying effects
- provision of food in adequate quantity, and at reasonable pricesto ensure affordability, so as to meet the caloric requirement of citizens . This implies little or no food imports
- exportation of food, which earns foreign exchange, which can be used to acquire capital goods and services that cannot, possibly, be provided locally due to natural constraints.

Self-sufficiency in food production ensures political, social and economic stability of a country.

Raw materials

Agriculture provides the raw materials for local industries. It provides cocoa for the beverage industry, cotton for the textile industry, timber and pulp for the wood and paper sectors, and latex (rubber) for the tyre and plastic industries etc. The raw materials provided should be adequate to meet the needs of the industries and allow for future expansion. This will also help to conserve foreign exchange and create employment opportunities.

Foreign exchange

Agricultural products produced in excess of local demands can be exported to earn foreign exchange. This is of vital importance, because of a country's need for foreign exchange to produce certain capital goods and services.

Employment opportunity

Agricultural sector provides job opportunities for all categories of workers, principally because of its large size, compared with other sectors of service and industry within the country. The agricultural sector absorbs a sizeable proportion of the population into the farming business; this can range from the peasant farmer, farm labourers, agricultural officers, extension officer, to researchers, to mention a few.

In Nigeria, according to the 1953 census, over 80% of the population is engaged in agriculture. However, this has now been reduced to less than 60-70%, or thereabout. The percentage is even higher in some other underdeveloped countries. Even in developed countries, a considerable percentage of the population is in agriculture and its allied industries. For example in the United States about 85% of the people are directly in agriculture while about 42% are in industries connected with agriculture. Provision of capital

Agriculture provides some sort of financial backing to other sectors of the economy, through savings and the purchase of goods and services from these sectors. Besides, the direct taxes paid by the large number of small scale farmers and few large scale farmers constitute sources of income for the government.

SELF-ASSESSMENT EXERCISE 3

Mention the major importance of Agriculture.

4.0 CONCLUSION

Looking at the contribution of agriculture to a nation's economy,-as discussed above, you must have observed that agriculture is the main stay of the economy any nation. This observation is authenticated by the fact that over 70% of the population of a nation can be engaged by the agricultural sector- from the subsistence farmer, the researcher/scientists who investigate agricultural problems, to workers in the industries that use agricultural materials for the production of their goods, transporters, and to traders (retailers/middlemen)-engaged in the marketing of agricultural products.

5.0 SUMMARY

In this unit, you learnt the origin, meaning, scope and importance of the agriculture. You also learnt about the contributions of agriculture to the Nigerian economy through the enhancement of the growth of gross domestic product (GDP) and reducing the rate of unemployment. You also learnt that other importance of agriculture include provision of food for man and animals, provision of capital and foreign exchange.

6.0 TUTOR-MARKED ASSIGNMENT

1. Examine the role of agriculture in the development of your country. 2. Discuss the scope of agriculture. 3. Give reasons why cooperative is studied under agricultural economics.

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UNIT 3 AGRICULTURAL DEVELOPMENT

CONTENTS

1.0 INTRODUCTION

This is the second unit of this course; our focus here is on the term agricultural development- with special reference to West Africa, and Nigeria in particular. The transformation of subsistence agriculture to more productive forms of agriculture in Nigeria and other African countries requires the development of agricultural training research and extension programmes, the formulation of appropriate government policies, and the development of government regulations and programmes designed to enhance agricultural production. Science and technology are applied to agricultural operations to improve man's skill and to improve methods of cultivating the land, protecting crops and livestock against diseases and pests, thereby increasing agricultural productivity.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define the term agricultural development
- state the main characteristics of agricultural development
- discuss the role of science and technology in agriculture.

3.0 MAIN CONTENT

3.1 Development Provisions

Agricultural development is facilitated by the provision of certain social, health and educational facilities and services such as rural infrastructure (good road network); regular water supply, electricity, health, recreational and educational facilities for the

people (farmers and families). When these are provided for, the rural populace they become independent of the urban people and facilities. All these are, however, accompanied by appropriate development programmes to sustain the development process. It therefore implies that agricultural development is not a revolutionary process. It is a planned process of change which requires adequate planning.

SELF-ASSESSMENT EXERCISE 1

Briefly define agricultural development.

3.2 Concept of Agricultural Development

With respect to the agricultural sector, development implies sustained improvement, advancement or growth in the various facets of the sector- i.e. crops, livestock etc., which simultaneously enhance the standard of living of vast majority of the people, especially farmers. Thus, there can be agricultural growth without development; for example, when few farmers (in most cases, rich farmers/industrialist,) experience increased output and standard of living. Suffice it to opine that there is reduction in unemployment and under-employment when a large proportion of the population is engaged in agricultural production. This is also reflected in increased gross domestic product of the economy.

3.3 Fully Monetised Economy

A fully monetised economy has exportation of agricultural products as one of its policy objectives. Also, agricultural development in such an economy reflects the features of basic subsistence economy; in addition to increased cash or export crop production. Invariably, there will be improvement in the quality of the crops exported; foreign exchange earnings are used to purchase capital goods which are needed for the various stages of development process within the economy.

3.4 Industrial Economy

Within an industrial economy, agricultural development occurs when there is adequate supply of raw materials to local agricultural industries.
This leads to expansion of industries, creation of job opportunities, reduction in underemployment. Thus, there is increase in food supplies to the growing industrial population. Although the number of people engaged in farming may decline, the productivity of the people remaining will increase, with the use of improved farming practices and efficient implements.

It is important to note that in all the three types of economy, there is a sustained increase in farmers' output, leading to increase in income and standard of living of the farming population. Besides, each economy has the feature of the three types of economies discussed above. Hence, there is rarely a distinction or demarcation between the three.

3.5 The Role of Science and Technology in Agriculture

Consequent upon the desire to increase efficiency in agricultural production, some farmers now specialise in some specific aspects of agriculture, such as poultry, cattle rearing, piggery and cultivation of specific crops. Thus, science and technology has played a significant role in the areas of mechanisation of agricultural production, protection of crops and animals, improvement of soil fertility for increased crop yield, production of disease resistant varieties of crop and species of animals.

Still on the major contributions of science and technology in agriculture, let us consider the following.

a. Mechanisation of agricultural production

Mechanisation enhances significant improvement in the design and fabrication of agricultural machineries and tools. Cultivation of land is now done with the use of ploughs and harrows. Tractor-driven implements like planters, harvesters etc., are now used in the farm. Besides, simple farm tools like cutlasses, hoes are being modified for increased efficiency. Battery cages are fabricated for poultry production; recently, with the high cost of procuring conventional metal battery cages wood is now used to build battery cages in Nigeria.

b. Protection of crops and livestock

Various agro-chemicals have been produced by scientists to control pests and diseases of crops and livestock. Insecticides, pesticides, fungicides are used to control the infestation of crops and animals in farms. Fungus disease in maize is controlled by using fungicides; while herbicides are used to control weeds. Animals are treated in the farm by veterinarians; and vaccination ensures that animals are immunised against diseases.

c. Breeding

High yielding varieties of plants and animals are developed through breeding to increase farmers' output. Besides, varieties which are resistant to pest and diseases are also produced by scientists; for instance, high yielding varieties of cassava developed by scientists at the International Institute of Tropical Agriculture (IITA) is now widely cultivated by farmers in Nigeria. Artificial Insemination (AI) was developed to effect fertilisation in the female animal without being in contact with the male counterpart. This method has the advantage of reducing wastage of sperm, thereby enhancing increased production. Scientists have developed high yielding cowpeas varieties (such as ire brown) which are resistant to multiple diseases and insects- which reduce grain quality and seed viability, thus making seed unfit for planting.

d. Improvement of soil fertility

Soil scientists have discovered the use of inorganic chemical compounds in replenishing soil minerals. The mineral depleted from the soil due to excessive cropping can be replaced through application of inorganic fertilizers as well as organic manures. Scientific agricultural systems (crop rotation) have been discovered by scientists to improve farmer's performance in agricultural productions.

SELF-ASSESSMENT EXERCISE

List and explain the role of science in agriculture.

4.0 CONCLUSION

In this unit, you have learnt that agricultural development implies sustained improvement, advancement or growth in the various facets of the agricultural sector (i.e. crops and livestock, etc.). Thus, there can be agricultural growth without development. Science and technology has also made a major impact in agricultural operations so as to keep pace with socio-economic development.

5.0 SUMMARY

This unit has revealed that the concept of agricultural development varies from one economy to another- depending on the stage of economic development attained by a country. Hence, agricultural development enhances the standard of living of vast majority of the people, especially farmers.

6.0 TUTOR-MARKED ASSIGNMENT

Briefly explain agricultural development from the socioeconomic point of view. 2. It is often said that science and technology has contributed significantly to the development of agriculture. Explain why this is so.

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UNIT 4 ESSENTIALS OF AGRICULTURAL DEVELOPMENT

CONTENTS

1.0 INTRODUCTION

This is the third unit of this module. Remember that unit two dealt with the concept of agricultural development, while this unit will give a detailed explanation on the factors responsible for agricultural development. However, agricultural development cannot take place without the support of other sectors (industry and service) of the economy and vice versa.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- identify the various factors responsible for agricultural development

- explain these factors of development- as it relates to the productive base of the economy.

3.0 MAIN CONTENT

3.1 Factors Responsible for Agricultural Development

From our discussion in unit two, you would have observed that agricultural development is a necessary condition for economic development in any nation, particularly an agrarian economy; hence agriculture is one sector in which Nigeria has a comparative advantage as it offers the greatest potential for expanding the productive base of the economy and diversifying its sources of foreign exchange through exports. The factors responsible for agricultural development are discussed below.

a. Effective agricultural planning

Agricultural planning is a conscious, sustained and systematic attempt made by the government, Non-Governmental Organisations (NGOs) or private sector to utilise the available agricultural resources of the country to the benefit of farmers and the entire populace. Proper planning of all activities within the agricultural sector is, therefore, imperative for rapid development.

b. Agricultural inputs

The main inputs used for agricultural production include: agro-chemicals, fertilizers, herbicides, pesticides, fungicides etc., improved seeds and seedlings, agricultural machinery (tractors, combine harvesters, planters, riggers) etc. For improved agricultural production and agricultural development, there is need for efficient distribution of these inputs, especially to small scale farmers. The inputs need to be procured and supplied timely and in adequate quantity to farmers, in view of the complementary nature and seasonality of their application on the farm. This will enable the farmer to benefit, fully, from the use of the inputs.

c. Financial resources

Capital is very essential for agricultural development, because a lot of infrastructure is needed. Besides, agricultural production requires the purchase of farm inputs- as mentioned above. Planning- in relation to manpower, research and staff emoluments require large capital outlay. These are carried out at macro-level. Capital is needed by farmers to break the vicious cycle created by low productivity, low income and low savings. You will remember that in the past, the family was the major source of agricultural labour. In recent times, as a result of increased educational opportunities and rapid exodus of able-bodied agricultural labour to urban centers, there is great strain on the little family labour on the farm. Consequently, there is greater need for hired labour.

As with the other sectors of the economy, the increased demand for labour has resulted in rise in labour wages. To meet these, farmers need to have access to credit facilities. Such credit can also be used to purchase inputs to achieve increased productivity. Thus, credit need to be made available at the time required by farmers and at reasonable interest rates. Adequate supervision of the use of the credit is, however, necessary to ensure that it is spent on productive activities only. Some experts have argued that in order to achieve the prudent use of the production credit facility, farmers should be given consumption credit in addition to the agricultural production credit. This, as suggested, will assist the farmers in meeting their consumption expenses during the period between planting and harvesting or unfavourable weather conditions.

d. Manpower development

Manpower development involves training of all categories of agricultural personnel. These include agricultural officers, agricultural superintendents, technicians and technologists. Manpower development is vital and crucial for rapid development. It ensures effective, management of the various phases of agricultural development process. Consequently, institutions such as universities, schools of agriculture and associated training institutes like Agricultural Research and Management Training Institute (ARMTI) are of paramount importance for the development of high and middle level manpower.

e. Agricultural land resources

The total land resource of Nigeria is estimated to be about 98.3 million hectares. Out of this about 71.2 million hectares is arable land. However, it is estimated that about only 34.0 million hectares is under cultivation. Thus, the cultivable land resources of Nigeria are grossly under utilised. The under-utilisation of land is a function of some institutional constraints. The land tenure system in operation is responsible for the fragmentation of farmland holdings and the difficulties encountered by individuals who are interested in farming. For rapid agricultural development, land need be made available to farmers. The land tenure system should allow expansion of fields and provide high degree of security to the cultivators. Equitable distribution of land permits as many people as possible to undertake farming as a business venture with reduced constraint.

f. Irrigation

Irrigation facilities such as dams are, particularly, essential in areas where there is insufficient rainfall. As an alternative to rain, irrigation ensures adequate supply of water, which is an important input for production of forage for livestock and other uses. This reduces the effects of weather hazards on crop and animal production.

g. Efficient marketing system for agricultural products

This is an important pre-requisite that requires time for consumers and stabilising farmer's income. Beside effective communication system, good roads are equally essential for conveyance of farm inputs and outputs, to and from farms. All these factors lead to increased output, income, and standard of living, thereby aiding agricultural development. They also result in generation of employment opportunity in the rural areas and reduction in rural-urban drift. They also ensure availability of good quality food to meet the nutritional requirement of the populace. It is important to note that attempts made to increase production need to be accompanied with commensurate measure to improve the efficiency of the marketing system; as it is fruitless to increase production which will later be lost as a result of spoilage due to inefficient marketing system.

h. Government policy

In view of the important role of agriculture in providing basic food requirement for the people, government of many countries- through their agents directly or indirectly, control agricultural activities to ensure rapid agricultural development. Consequently, policies are formulated while plans, programmes and projects are developed at different times and levels to facilitate the development of the sector. Some government measures to facilitate agricultural development in Nigeria include the following:

1. Agricultural credit scheme was launched in 1978 and was aimed at achieving rapid increase in the production of food stuffs. The scheme provided credit facilities to farmers for increased production of crops and livestock.
2. Establishment of Marketing Boards in 1997 which was to facilitate increased production of export crops and stabilise famer's income.
3. Establishment of National Supply Company (NSC) which performed anti-inflation role through massive importation of the so-called "essential commodities" (i.e. milk, rice, vegetable oil etc.).
4. Provision of subsidy for agricultural inputs such as fertilizers, agro-chemicals, improved seeds and seedlings and drugs for livestock production.
5. Guarantee of minimum prices and income for food producers aimed at stabilising the income of farmers.
6. Launching of Operation Feed the Nation (OFN) in 1976 and the Green Revolution (GR) in 1979. OFN was short-lived due to the change of government in October 1979 and was replaced by Green Revolution by the new government. Inefficient management during the implementation stage and lack of continuity often constitute the bane of these programmes. Thus, continuity and efficient management of these programmes to attain the policy objectives are imperative for agricultural development (and its sustenance).

i. Institutional arrangements

Agricultural related institutions such as extension organisation, farm organisation, financial institutions, and farmers' cooperative associations are essential for agricultural development. These institutions are established, primarily, to give

assistance of diverse nature ranging from financial to technical assistance to farmer members.
The assistance is aimed at improving farmers' techniques, overall production, income, standard of living and general welfare. The institutions are either established by the farmers themselves or through external agencies.

j. Technology

Technology does not, necessarily, imply complete change to the use of heavy machineries. The use of mechanical devices and applied science in response to changes in the total environment of the farmers and users of agricultural output is relevant here. Thus, rapid development of agricultural sector requires improved technology. This includes improvement of agricultural production technique, use of improved simple farm tools, management techniques, storing, processing and transportation of agricultural products.

The importance of changing technology is to enable the sector cope with the changes in the socio-economic characteristics of the dynamic population. Thus, farmers are able to maximise their returns due to effective use of limited resources. Besides, technology can only have significant impact on the sector if the products are readily available and affordable. Availability of local technology saves foreign exchange, creates job opportunities within the sector, increase farmers' productivity, income and standard of living leading to rapid development of the sector.

k. Research

Research is an advanced stage of study undertaken to discover or establish facts or principles. In agriculture, it involves finding solutions to farmer's problems through systematic experimental procedures. There are two types of research, namely:
i. Basic research ii. Applied research

For research to be meaningful, it must be relevant to the needs of farmers. Thus, the farmers should participate fully in the identification of their problems/felt needs from the planning stage of the research. This is attained through close interaction between the farmers and the research team. This is referred to as "up steam" research. Findings of the research are transmitted to farmers through extension officers.

l. Extension Service

Extension service is defined as a voluntary out-of-school educational arrangement created to increase the production capacity, and thus, the standard of living of the rural and urban populace. It is either established by the government or non-governmental organisations to disseminate useful information relating to the discipline in focus, to the people concerned. Specifically, agricultural extension officers transmit research findings from research institutes or universities to farmers and obtain feedback from farmers to the researchers for further research, analysis and validation of facts.

SELF-ASSESSMENT EXERCISE

List five of the factors responsible for agricultural development.

SELF-ASSESSMENT EXERCISE

Which of these factors do you consider most important?

4.0 CONCLUSION

By now you must have realised that the various factors responsible for agricultural development include, financial resources, agricultural planning, agricultural inputs, manpower development, and research- to mention a few. These, in the long run, contribute to farmer's income and increase in the standard of living, thus leading to rapid development.

5.0 SUMMARY

In this unit, you have studied the various factors responsible for agricultural development. All these have contributed to the growth and development of agriculture, which confirms that agricultural development is a necessary condition for economic development of any nation, particularly an agrarian economy.

6.0 TUTOR-MARKED ASSIGNMENT

1 a. How would you define agricultural development? b. What are the factors required for rapid development of agricultural sector.

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UNIT 5 PROBLEMS OF AGRICULTURAL DEVELOPMENT

CONTENTS

1.0 INTRODUCTION

Developing countries, especially, West African countries and Nigeria in particular are faced with numerous problems which militate against the development of Agriculture. About 78% of Nigerian population lives in the rural areas, and are, basically, subsistence farmers. This is an evidence of lack of development; since everybody will have to produce his own food and nobody will use his own resources to plan and create development in other sectors. Since there is the need for development- both in agriculture and other sectors, the problems militating against the development of agriculture needs to be identified and tackled.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- state the various problems of agricultural development
- highlight the solutions to all these problems.

3.0 MAIN CONTENT

3.1 Agricultural Development: Problems

These problems account for almost 90% of Nigeria's under development issues, and once these are tackled with appropriate solutions, Nigeria will be regarded as an industrialised country. Let us consider some of these problems.

a. Land tenure

Land is one of the most important factors of agricultural production. Land tenure is the way land is owned in a society. The prevailing land tenure systems in Nigeria often discourage agricultural land utilisation. Land is owned by inheritance; hence, land is fragmented over generations. Increase in population has increased the various alternatives to which land can be put. This further puts pressures on available land. The only solution is the strict adherence to the land use decree of 1978 as amended by the 1990 Act. This can make land available to prospective and genuine farmers.

b. Poverty/lack of financial assistant

This is one of the major problems of agricultural development in Nigeria. Modern scientific agriculture requires some substantial capital to acquire land, improved breeds of plants and animals, and equipment- just to mention a few. Majority of farmers don't have this capital, and therefore, have no alternative than to engage in subsistence farming. Lack of credit facilities aggravates the problem. Banks insist on reasonable collaterals before they can give any loan and these farmers do not have such collaterals. The solution to this problem is that farmers should form themselves into co-operatives to generate capital for members. Government may also provide credit through some institutions with little or no stringent measures. Banks should be more liberal in making credit available to farmers.

c. Lack of basic amenities

Basic amenities are good roads, good drinking water, electricity, educational institutions, health facilities and market-these should be available in the rural areas. Young people like to enjoy the good things of life. Lack of these amenities in the rural areas has the effect of making the young energetic members of the communities to drift from the villages to the towns where the amenities are available.

The result is that the villages where the agricultural lands are found are abandoned to the poor and old people who may just manage to earn their living from the land. Amenities like good roads, electricity and water supply are necessary for agricultural development. Provision of these basic amenities will discourage rural-urban migration.

d. Ignorance and lack of good agricultural education

Most of the farmers in the developing countries are not educated enough in the technicalities relating to agricultural product. These educated farmers do not tend to be conservative. Enlightened people tend to be guided in their decision by reason. The farmers are dogmatic and adamant to changes and very suspicious of any new innovations since they are unscientific in mind and in thinking and not willing to accept technological changes. Most of the farmers are unwilling to even learn how to use and apply fertilizers, insecticides and new farm tools. All these bring about low agricultural productivity.

In Nigeria, agricultural education is seriously being pursued. Research station or institutes are increasing and extension services are encouraged to ensure that the result of researches is made available to farmers. Demonstration farms are established at strategic places to help educate rural farmers. Adult education has been embarked upon with vigour through government agencies.

e. Poor tools and farm machine

Most farmers still rely on the use of tools like hoe, cutlass, rake- and so on, for their farm operation instead of using mechanised implements like riggers, ploughs, cultivators etc.; there is the need to have agricultural tools that are suitable for use in the tropics. At present, these are not readily and sufficiently available; where some are seen, they are very expensive and out of reach of the rural farmers. Also, Maintenance costs are high and the spare parts may not be readily available.

There is also need for skilled manpower for the maintenance and repair of the tools and machines. It may be necessary to encourage local production of the necessary tools and machines. This will have the effect of reducing the cost of purchasing and maintenance, and thereby making spare parts readily available. Government should train farmers on the most recent agricultural technology, and there should be subsidies on the cost of farm machinery. Government can also create agencies in most of the local governments where tractors/machines can be hired.

f. Poor storage and processing facilities

In Nigeria, a large percentage of farm products are lost after harvest. Prices of these products fall too low immediately after harvest, because the farmer cannot store or preserve them, properly, till they can have better prices. Since these products are perishable and the farmer has no technology to process or preserve them, the entire products are offered for marketing immediately. Prices are forced down and the farmer may not be adequately rewarded for his labour. The situation is worsened by lack of adequate marketing systems for most of the farm products.

A large amount of farm products are lost during harvesting season because they can neither be disposed of properly or be preserved or processed. Storage facilities are inadequate. It is necessary that government should establish adequate marketing system. Also, government should make efforts to provide storage and processing facilities like crib, barns, shelters millers, grater, etc.; excess farm products should also be purchased by the government so as to prevent glut and bring them to the market during scarcity.

SELF-ASSESSMENT EXERCISE

i. Explain five major problems of agricultural development. ii. Give solutions to the five major problems mentioned above.

g. Inefficient marketing system

The sole aim of commercial agriculture is profit making. This cannot be achieved due to the activities of the middlemen who try to remove all the gains, create artificial scarcity with poor pricing policies. Prices continue to fluctuate and there is more marketing channels for farm produce coupled with the lack of good roads to help evacuate perishable farm produce to target market at the right time. The government should make provision for another board that should also pay the farmer prices that will give him enough profit to keep him in business. Such an arrangement will draw more capital into agriculture since people tend to invest in sectors that yield maximum profit.

h. Pest and diseases

In Nigeria, pests and diseases that destroy crops and animals abound. There are pests in the soil, pests that attack the aerial parts of the crops and storage pests. Very often, rural farmers are completely helpless in the face of these pests and diseases for they neither know how to control them nor can they afford the chemicals with which to do so if they happen to know what the disease or pests are and what chemicals to use. The results are:

i. large quantities of farm products are lost- both in the field and in store. ii. farmers spend extra money on chemicals purposely to control the pests and diseases. iii. there is reduction in quantity and quality of products. It is necessary to note too that very often, the chemical controlling the pests and diseases may not be available.

i. Inadequate agricultural inputs

Agricultural chemicals such as insecticides fungicides, are very expensive while inputs like improved seeds and seedling, improved animal materials like the parent stock in birds are lacking, some inputs are very substandard and do not meet the desired result while application of some chemicals can lead to pollution of the environment. Very often, supply of fertilizers are made when the farmer is about to start harvesting the crops. These inputs, as I have said above, are also very expensive and beyond the reach of majority of the rural farmers.

Government intervention is very necessary in this area. Farm inputs should be highly subsidised and also supplied at the right time for effective use. It is also necessary to reinforce the extension services to ensure that farmers are properly guided in the acquisition and proper use of the right type of agricultural chemicals and fertilizers.

j. Inconsistent government policies and programmes

Government lacks basic consistent policy on the management of agriculture. There is need to use government policies and programmes to solve most of the problems of

agricultural development. For example, government can provide loans and credit facilities to promote expansion in agricultural production. It can subsidise the prices of specific agricultural materials and inputs in order to enable farmers obtain them at reasonable prices. Development of rural communities, especially, the farming communities is a programme that can help to attract farm labour to the rural areas where it is needed. Government can also initiate policies that can make farming so profitable that it will attract a lot of private capital.

k. Poor extension workers

Extension helps in disseminating information to a large number of farmers, within a very short time. This is not the case in developing countries because most extension workers are too ill-equipped for the work while language is another barrier- as well as the uncooperative attitude of farmers. At most periods, there is a lack of recent research work; poor remuneration of extension officers has also been a challenge. The funding of the extension programmes must not only be done by the government but also non-governmental organisations, cooperative societies and other financial institutions.

l. Unpredictable climate

This is a major factor which must be controlled to suit agricultural production. Unfavourable climate reduces all farm activities while drought or long period without rain leads to poor harvest; flooding or excessive rainfall also reduces yield as well. Inadequate sunshine reduces the photosynthetic ability of the plants while excessive sunshine leads to increase or abnormal temperature for crops. Development of irrigation system and proper methods of preventing degradation of the environment should be accorded priority by al1 the agencies responsible for environmental control.

4.0 CONCLUSION

The solution to all these problems is within –the purview of the government; agriculture should be given priority in annual budgets.

5.0 SUMMARY

In this unit, you have been exposed to the problems confronting agricultural development. Suffice it to say that agricultural development is a necessary condition for the development of the economy of any nation- particularly an agrarian economy. The development of agriculture can only be achieved if these problems are attended to as appropriate.

6.0 TUTOR-MARKRD ASSIGNMENT

1. "The problems of agricultural development could be attended to if only the government makes agriculture a priority". Discuss.
2. Enumerate and discuss five problems of agricultural development in Nigeria.

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MODULE 2

UNIT 6 LANDS USE SYSTEM IN NIGERIA
UNIT 7 METHODS OF FARMING IN NIGERIA
UNIT 8 IMPORTANCE OF RESEARCH IN AGRICULTURE
UNIT 9 AGRICULTURAL SYSTEMS
UNIT 10 ENVIRONMENTAL FACTORS AFFECTING AGRICULTURAL PRODUCTION

UNIT 6 LANDS USE SYSTEM IN NIGERIA

CONTENTS

1.0 INTRODUCTION

In this unit, we are going to consider land tenure system and factors affecting land use in Nigeria. You will remember that land is one of the factors of production, and its importance in agriculture, generally, cannot be over emphasised. Hence, a better understanding of this unit will be of immense advantage to you.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define land tenure system
- explain types of land tenure system and factors affecting them in Nigeria
- highlight the steps government has taken to combat land use problems in Nigeria

3.0 MAIN CONTENT

3.1 Definition of Land Tenure System

Land tenure system describes the various ways land is controlled by the community, family or individual- either for permanent or temporary use. It also refers to the economic, legal and political arrangements regarding the ownership and management of land and its resources. This is very important because it affects the way land is used for both agricultural and industrial development.

3.1.1 Types of Land Tenure System

Land tenure system in Nigeria varies with tribe, clan, state or community. Let us consider the following.

a. Communal land tenure system

This is the traditional system of land ownership, whereby land is generally regarded as the property of the community. This makes individual ownership rare, particularly in

rural areas. The community may be a family, a village, a clan- always headed by a family head, village or clan head. In this system, every member of the community is entitled to a piece of land for farming, but individual ownership is not allowed. Land cannot be sold to strangers since there is ancestral ownership.

Allocation of the land among the community members is usually decided by the head of the community, acting on the authority of the entire community. The community does not control whatever is grown on the land and has no claim on the products of the land. The member to whom the land is allocated decides what should be grown on the landwhich must not be permanent crops. He also has claims over the products, especially the arable crops he has planted such as maize, rice, yams, melons, cassava etc.; but perennial crops such as oil palm belong to the community and are harvested and shared among the members of the community.

Disadvantages of communal ownership of land

The major disadvantages of communal ownership of land are as follows.

i. Inadequate maintenance of soil fertility- if a farmer realises that the portion of the land he is farming this year may not fall to him the next year, he may not be willing to invest enough into the soil to maintain its fertility. He will only be interested in how much he can get from the soil during the period he farms on it. This will eventually lead to rapid depletion of soil fertility.

ii. Useful time is wasted in consulting large number of people whenever government wants a piece of land for developmental purposes. Often, customary tenure rules are transmitted orally through generations. This resulted in lack of documented records and has led to land disputes and court cases over land ownership and boundary demarcation.

Advantages of communal ownership of land

The advantages of this system are as follows.

i. Each member of the community has the opportunity to request for farmland to provide food and earn some money for his family. ii. It is possible to organise communal and cooperative farms on such lands, since the land is extensive. iii. Modernised farming on economic scale is possible. iv. It is easier to transfer the land to a prospective farmer, since individual attachment is almost absent.

b. Tenure based on individual inheritance of free-hold land ownership

This is the commonest method of acquiring land in some developing countries; here, the land owner has the freedom to do what he likes with his land. When the farmer dies, his holdings are transferred by inheritance to his sons. The piece of land is continually fragmented from one generation to another and it is usually shared among

the male children of the farmer. Each son, usually, prefers to invest in the land in order to improve its fertility for agricultural production. If the land is large enough, mechanised farming can also be practiced.

The right ownership to the land can be transferred from one man to another by outright sale or purchase. This is sometimes rare for two reasons:

a. there is the religious, sentimental attachment to land in many communities. b. there is also the rigorous and unnecessarily long negotiation associated with such transfer or purchases.

Disadvantages of free-hold land ownership

This system of land ownership has the following disadvantages:

i. lack of government control over land which is an important asset ii. over-independence and abuse of land by land owners, resulting in excessive and uneconomical fragmentation of the land iii. land may belong to some people who have no interest in land development or in making optimal use of it iv. those who have no land, or those who have very limited areas for their needs may be unable to buy or rent land from individual owners.

Advantages of free-hold land ownership

The main advantages are:

i. the individual owner often prefers to invest in the land in order to improve its fertility for agricultural production since the land belongs to him ii. he can also use the land as security to obtain loans from commercial banks iii. this system gives the land owner security of tenure; it makes for proper future planning and efficient investment on the land. iv. Mechanised farming can be practiced if the land is large enough.

c. Lease-hold tenure or landlord-tenant agreement

This is a situation whereby a farmer is permitted by the land owner to work on a piece of land for a fixed length of time and under stipulated condition. The real land owner may be an individual, government or a government agency or a community. A good example is the Taungya system- whereby the Forestry department releases a portion of its fertile land to farmers for a specific period of time for the cultivation of food crops, while at the same time nursing some tree seedlings.

This system permits effective control of land by the land owner or the community. At the expiration of the period of tenancy, the land reverts to the land owner.

d. State or government ownership of land

Some land belonging to the government may be leased out to an individual; payment can then be made into government treasury. The disadvantage of this system is that the government can recover its land at a very short notice.

It should be mentioned here that the disadvantages of the various systems described above are obstacles to agricultural development; and co-operative societies are expected to be used to circumvent these obstacles. This is because farmer's access to communal land has been found to be faster on the platform of these cooperative societies rather than as individual.

SELF-ASSESSMENT EXERCISE

What do you understand by communal ownership of land?

SELF-ASSESSMENT EXERCISE

List the advantages and disadvantages of communal ownership of land.

3.2 Government Laws on Land

Poor Land tenure systems have been identified as one of the major bottlenecks preventing agricultural development in the developing world; hence, a suitable and functional land tenure system is the pivot for rapid agricultural production in any nation. It was in the recognition of this fact that the Nigerian government in 1978 promulgated the land use decree which later became the Land Use Act. The declared objectives of this Act are as follows:

i. To remove bitter controversies which land has generated in Nigeria. ii. Streamlining and simplifying the management and ownership of land in the country. iii. Assisting the citizenry, irrespective of their social status, to own a piece of land both for shelter and farming. iv. Bringing under government control the use to which land can be put in all parts or the country; and thus, facilitate planning or formation of programmes for particular land uses.

As it is today, as regards land transaction- to consider whether this 1978/1979 Land Use Act has fulfilled these objectives is a vexed question; as it can be safely said that the land tenure systems prevailing in all rural areas of this country before this Act have survived till date.

3.3 Principles of Land Use

The principles of land use aim at optimal use of land and the avoidance of wastage. Land can be used for three main purposes, namely- agriculture, forestry and wildlife conservation or game reserve. Let us take a cursory look at these.

i. Agriculture and forestry

These aim at the production of food vegetables, timber and fuel. The use of land for any of these purposes is often decided by the zone to which the land belongs- i.e. weather it is in the forest zone or savannah zone.

In the forest zone, land is used mainly for timber, perennial and special tree crops and animal, protein production; whereas in the savannah region, land is best used for pasture, subsistence crops, and production of animal protein. The use of land in the savannah zone is best decided
by vegetation. However, a good use of the land can make it possible to have both forests and agricultural products from the piece of land. If the forest trees are well specified, the leaves from the trees will serve as manure for food crops or even for pasture in the derived savannah zones.

In very strong wind belts, forest trees can be used as wind breakers for agricultural crops, thus using forestry to the advantage of agriculture.

i. Wildlife conservation
This started in United States when people felt that certain animals they needed for sports were decreasing and at the risk of becoming extinct. These provided games reserves for tourism and holidays. In Nigeria, you will recollect that we have such reserves as the Yankari in Bauchi State (which is about the best reserve in West Africa), the Borgu in Niger State and the Upper Ogun in Oyo State.

SELF-ASSESSMENT EXERCISE

Mention the objectives of the Land Use Act of 1979.

4.0 CONCLUSION

From the explanation in this unit, you will agree that the Land Use Decree was one of the most progressive attempts to develop modern agriculture. This was aimed making land available to those who have the knowledge, resources and zeal to farm. It is unfortunate that the noble objectives of this programme could not be achieved due to strong attachment of people to their land and other considerations bordering on politics and ethnicity.

5.0 SUMMARY

Land for agricultural activities, especially in the rural areas, is acquired mainly through inheritance; where a piece of land owned by a great ancestor is transferred within the family from generation to generation. The land tenure system has only succeeded in removing just few bottlenecks in urban areas.

6.0 TUTOR-MARKED ASSIGNMENT

1. Define land tenure system.
2. Give a list of the land tenure system with which you are familiar.
3. Which of these systems has the greatest influence on agriculture?

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UNIT 7 METHODS OF FARMING IN NIGERIA

CONTENTS

1.0 INTRODUCTION

Farming started with man using the power of human muscles. Many centuries passed before he started to use animal power to supplement the human muscle. With the advent of science and technology coupled with research findings, agricultural production moved from subsistence farming to the use of machines, which is regarded as mechanisation- for commercial purposes.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- discuss the various types of farming and their characteristics
- explain the merits and demerits of each type of farming.

3.0 MAIN CONTENT

3.1 Hunting and Gathering

The early man lived by hunting wild animals and gathering wild fruits. His primary objective then was to get fed; and once this was accomplished, he was contented. This system was characterised by the use of primitive tools like stones, bows and arrows, traps, clubs and plough. There was little to eat and no reserves were made for the farming season. This method was quickly jettisoned- with the advent of civilisation.

3.2 Subsistence Farming

This is a system of fanning whereby a farmer cultivates crops and rears animals in order to produce food for use by himself and his family only. In crop production, the subsistence farmer concentrates on arable food crops as yam, cassava, maize, millet, sorghum, groundnuts, soya beans, and cowpeas. The subsistence farmer may also be involved in the establishment of plantations using traditional methods. The farmer may plant such crops as oil palm, cocoa, rubber, kola, tea, coffee, banana, and citrus trees.

In livestock production, the subsistence farmer keeps a few goats, sheep, rabbits or pigs. In the arid regions, the subsistence livestock farmer is mainly nomadic and moves with his animals from place to place in search of water and pasture.

Characteristics of subsistence farming

1. Labour is provided by the farmer and his family. 2. Only small area of land is used. 3. Crude implements like hoe, cutlass, digger, baskets are used. 4. The produce from the farm are not necessarily for sale. 5. The yield is also very low compared to mechanised farming.

Problems of subsistence farming

1. Control of pests and diseases is difficult.
2. The farmers are illiterate.
3. Use of crude tools.
4. Labour supply is erratic and unreliable.
5. The practice of subsistence farming wastes land and there is no means of replenishing soil.
6. The process is boring because the work is unchallenging and there is little or no profit, since farm products are not for sale.

SELF-ASSESSMENT EXERCISE 1

i. What is subsistence farming?
ii. List the problems associated with subsistence farming.

3.3 Cash Crop Production

This is a more advance stage of agricultural production. They are tree crops which are planted and could stay on the same piece of land for many years. The farmer specialises on cultivating cash crops like cocoa, kola, rubber, citrus, groundnut, and oil palm. These require processing into finished products before they are to be consumed.

Most of the plants in this category can stay for 5 to 50 years; and because of this, they require:

a. initial fertile soil
b. adequate and well distributed rain fall
c. suitable cultural practice.

3.4 Commercial Agriculture

This is a type of farming that is done on a large scale; this involves the use of machineries to do the work formally done manually (mechanisation). Machines have been produced which increases productivity in agriculture. In advanced countries, most farm operations have been mechanised. Bulldozers are used for clearing the farm. Tractor mounted instruments like ploughs and harrows are used in tilling the soil. There are machines for planting and making ridges; also, we have cultivators, spraying machines and machines for applying fertilizers. Many types of harvesters are now available and there are machines used in processing agricultural produce of any type. In livestock farming, we now have incubators, egg graders and milking machines. These machines make work in the farm easier, faster and less burdensome. Take note of the following features.

1. It is very expensive to practice.
2. Large area of farmland is required.

3. Requires the use of machines like cultivators, tractors, planters, harvesters, etc.
4. Labour is both manual and mechanical, and specialists are required, at some stages of production.
5. Returns are very high at the end of season or harvest time.
6. Marketing of products is specialised and sometimes requires advertisement.
7. It involves a lot of research into the various aspects of production.
8. It requires good record keeping to be able to make proper decisions.

3.4.1 Advantages of Mechanisation

Let us consider the following benefits of mechanization

1. With machines, a farmer does much greater work within a given time- and does the work more efficiently.
2. Very often, machines do more thorough work that the hands can do.
3. Larger areas of land are cultivated with machines than with human labour.
4. Farm drudgery is very much reduced.
5. Labour is saved and released from the farm to other areas of production.
6. It is cheaper to produce with machine; this increases the profit margin of the farmer.
7. Mechanisation makes it possible for the farmer to make use of optimum production period. 8. Since larger areas are cultivated with greater efficiency, food and raw materials will be produced in greater quantities.

3.4.2 Disadvantages of Mechanisation

Mechanisation is a blessing to agriculture, but it has disadvantages and limitations. Some of the disadvantages include the following:

1. It is capital-intensive - this is so because a lot of money is needed to purchase tractors and other implements; only rich farmers can acquire the necessary equipment. Also, the cost of hiring machines is often above what the ordinary farmer can afford. In Nigeria for instance, many state governments (Oyo State) have established tractor hiring units, but it will take time before many farmers can afford to take advantage of this.
2. It generates unemployment; because of the improved rate of work as a result of mechanisation, a good number of workers are displaced, unemployed people constitute social problem.
3. Mechanisation of seedbed preparation destroys or alters soil structure, which is not good for plants.
4. Mechanisation creates pollution since the machines will use power that often generates fume. The smoke that escapes from the exhaust of the tractors is carbon monoxide, which is dangerous.

3.4.3 Limitation to Mechanisation

The cost of buying source of power and machines is very high and only very few rich farmers can go for mechanisation now. Also, majority of farmers- especially rural farmers cannot afford the cost of hiring farm machines. Even at that, the available machines are not enough to reach all those who would like to hire them. There is scarcity of spare parts for the machines available. As a result, most of the machines lie waste most of the time. For the machines to last long, they have to be properly maintained, regularly.

SELF-ASSESSMENT EXERCISE 2

1. What is meant by mechanisation of agriculture?
2. Mention two advantages and two disadvantages of the system.

3.5 Differences between Commercial and Subsistence Agriculture

Commercial Agriculture	**Subsistence Agriculture**
1. Small scale farming is adopted.	1. Highly scientific with no superstitious belief.
2. Traditional farming is being practiced.	2. Yield (and often, returns) are high-meant for everybody.
3. Ideal for mixed farming, bush fallowing and shifting cultivation.	3. Processing of final product is common.
4. Low capital requirements- which can be provided by friend and family members.	4. It requires good record keeping so as to be able make good decisions.
5. Labour is from friends, family members; and it is cheap.	5. Highly traditional and superstitious in nature.
6. No special marketing skills are required.	6. Yields are low and meant for family members.
7. No research activity is required.	7. No processing of any form is practiced. No record keeping is done and so no improvement is expected

4.0 CONCLUSION

It can be clearly stated that despite the high yield and high proceeds from commercial agriculture, most small scale farmers still operate subsistence farming as a result of the low capital outlay involved. The state and federal governments should provide capital for small-scale farmers.

5.0 SUMMARY

From the understanding of the various types of farming in this unit, it is clear that mechanisation of agriculture will be the solution to boosting agricultural production. Also, it is worthy of note that subsistence farming can still be developed, especially with the provision of capital to small scale farmers.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the term commercial agriculture. 2. State five differences between commercial agriculture and subsistence agriculture. 3. Give the characteristics of subsistence agriculture.

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UNIT 8 IMPORTANCE OF RESEARCH IN AGRICULTURE

CONTENTS

1.0 INTRODUCTION

Research has played tremendous role in the development of agriculture in Nigeria. Traditionally, research in agriculture in Nigeria has concentrated on cash crops which are of value to industrialised economics. Lately, the scope of research has been expanded with the principal objective of developing improved systems which will maintain soil fertility and consistent high yields. Also, the system is expected to be economically viable, socially and culturally acceptable; as well, it has to be within the abilities of the small farmer and can adapt to different ecological conditions.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- state the contributions of science and technology to agriculture
- highlight the impact of research activities on agriculture
- discuss ways of encouraging farmers to adopt innovations.

3.0 MAIN CONTENT

3.1 Definition

Research is an advanced stage of study undertaken to discover or establish facts or principles. In agriculture, it involves finding solutions to farmers' problems through systematic experimental procedures.

There are two types of research, namely: a. basic research and b. applied research.

3.1.1 Basic Research

This is carried out by the intellectuals in universities, and at times, in research institutes for the sake of acquiring knowledge and not for solving immediate problems of farmers. The findings are however, sometimes utilised later in applied research.

3.1.2 Applied Research

This is often carried out by the intellectuals, mainly in the research institutes, and at times, in the universities purposely for solving immediate problems in the country. The methods and the techniques employed in this type of research are often drawn from the fundamentals of the basic research carried out some years back. Problems of the farmers are taken to the research workers by the extension officers for analysis and solution.

SELF-ASSESSMENT EXERCISE 1

i. Explain the term research. ii. What is applied research? iii. Mention two advantages of research work to farmers.

3.2 Research Institutes

As of today, Nigeria has over 35 Research Institutes which are established purposely to carry out research work in various fields, especially on agricultural activities. Such institutes include:

a. The Cocoa Research Institute of Nigeria (CRIN) - this is located at Onigambari, near Ibadan. It engages in research activities which are related to specific problems of tree crops like cocoa, coffee, kola nut, cashew and tea. It has experimental stations in different parts of the country where the crops thrive.

b. Nigeria Institute for Oil Palm Research (NIFOR)- this institute conducts research on soil analysis and production of palm produce. It also deals with specific problems of oil palm farmers in the country. The headquarters is in Benin-City, Edo State.

c. Livestock Research Institute, Vom (Jos) - this institute is saddled with research activities on livestock. The headquarters is at Vom, near Jos, in Plateau State.

d. National Institute for Social and Economic Research (NISER)- this deals with research into various economic and social problems in the country. It carries out feasibility studies on various socio-economic and agricultural problems. It organises seminars, conferences and workshops related to any of these problems.

e. National Root Crops Research Institute, Umudike(NRCRI)- this is a body charged with the responsibility for research into root and tuber crops such as yam, cocoyam, cassava, potatoes.

f. International Institute of Tropical Agriculture (IITA)- this is a non-profit international agricultural research center with its headquarters at Moniya in Ibadan; it has experimental farms in Abuja and some selected states in the country. The goal of this institute is to increase the productivity of major food crops and to develop sustainable agricultural systems capable of replacing fallow or slash and burn cultivation in the humid and sub-humid tropics through research. The institute's crops improvement programmes focus on cassava, maize, plantain, cowpeas, soya beans and yam. The research findings are shared through international cooperation programmes, which include training, information and exchange activities.

The findings of these various research institutes are usually passed to farmers through extension officers. Varieties of crops which are resistant to various disease infesting local crops are produced and sent to the farmers along with improved package of farming methods and techniques. Similarly, the government is often advised on a number of socio economic factors affecting the production process so that policies which may encourage farmers are formulated.

Also from the research activities of these institutes over the years, new and improved varieties of a number of crops such as maize, rice, cocoa, rubber, grasses legumes have been developed. Better and more economic ways of cultivation have been introduced and better yields and qualities of animals have evolved by selection and cross breeding.

For research to be meaningful, it must be relevant to the need of farmers. Thus, farmers should participate fully in the identification of their problems/needs- from the planning stage of the research. This is attained through close interaction between the farmers and research team. This is referred to as "Up Stream" research. All the findings of the research are transmitted to the farmers through extension officers.

SELF-ASSESSMENT EXERCISE 2

Mention five research institutes and state their research activities.

3.3 Applied Research

These are research efforts that should be disseminated to farmers, purposely to assist in their agricultural practice. This may be regarded as new ideas, methods, practices or techniques, which give the means of achieving, sustained increase in farm productivity and income. The innovations can be grouped into technical and social innovations.

3.4 Innovations

In view of the importance of science and technologies to the development of the agricultural sector, there is need to ensure that innovations are effectively transmitted to farmers. Farmers need to be encouraged and sensitised on innovations; some of the strategies for this include the following:

i. Adequate financial assistance should be provided to farmers for easy adoption of innovation. This can be in the form of subsidy which accompanies the introduction of a particular innovation or provision of credit at fair interest.

ii. Continuous education and training of farmers- cooperatives are institutionalised organisations with continuous education of members as part of their principles. They can be cheaply and conveniently used by extension officers to educate members about innovations.

iii. The use of contact farmers in reaching other farmers in the community is relevant. Contact farmers are those with relatively high educational background, good past farming performance and are able to command the respect of their contemporaries. Contact farmers efforts tend to supplement the efforts of extension officers. iv. Demonstration farms should be used liberally by extension officers while introducing new techniques. This reveals results of innovations and enhances farmers' understanding of the techniques. v. All inputs or facilities required for optimum benefits of the innovations should be provided when due, to sustain farmer's confidence in extension officers and the innovations. vi. There is need for formulation and implementation of consistent policies. However, where there is the likelihood of negative impact of a policy on farmers, government should provide a safe measure to absorb or reduce the impact. vii. Agricultural extension officer should be provided with adequate resources (finance, mobility etc.) to enhance their performance. Besides, government should address the problem of acute shortage of extension officers.

3.5 Quarantine Services

Government provides quarantine services purposely to aid agricultural development. Plant quarantine regulations are meant to prevent the introduction and distribution of foreign plant diseases and pests into a country. The primary objective is to protect the crops which are produced in the country. Quarantine measure can also be applied to eradicate and prevent the spread of plant diseases and pests within the country. These measures require strict supervision of the importation of plant materials like seeds or nursery stock.

During the quarantine period, the imported materials are kept under strict observation in sealed compartments for a period which is long enough for any disease symptoms to appear. If the disease symptoms appear, the infected materials are destroyed or they may be re-exported at the expense of the person or organisation that imported the plant.

3.6 Research Contributions

The contributions of science and technology in the areas of agricultural development are as follows:

- Improvement of crops and animals through genetic manipulations (breeding).
- Control of diseases and pests.
- Improvement and better management of the soil and its resources.
- Better and precise methods of studying climate which is one of the environmental factors affecting agricultural productivity.
- Mechanisation of farm operations purposely to maximise yield by more efficient operations.
- Construction of good roads for easy evacuation of farm produce.
- Increase in productivity of crops and animals through better techniques.

SELF-ASSESSMENT EXERCISE

i. What is innovation?
ii. Mention four ways of encouraging farmers to adopt innovation.

4.0 CONCLUSION

Both basic and applied research should be well funded so as to get more facts in improving agricultural activities with the ultimate aim of fostering rapid development of agriculture and providing food for all.

5.0 SUMMARY

Research as contributed, in no small way, to the rapid development of agriculture. Farmers should also be encouraged to adopt innovation through adequate financial

assistance, continuous education and training bearing in mind the major contributions of science and technology to agricultural development.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the following terms: a. basic research b. applied research c. innovations. 2. Give five ways of encouraging farmers to adopt innovations. 3. Mention four research institutes and explain their research activities.

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UNIT 9 AGRICULTURAL SYSTEMS

CONTENTS

1.0 INTRODUCTION

This unit takes a look at the agricultural system in Nigeria and the various methods used by different groups of people for crop production and livestock management in order to supply human needs. In these systems, the aim of the farmers has always been the same - to make his land produce as much as he needs and to keep the soil fertile to support sufficient agricultural productions.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- discuss the various agricultural systems in Nigeria
- describe accurately any three of the methods of farming
- highlight the strengths and weakness of traditional farming system.

3.0 MAIN CONTENT

3.1 Shifting Cultivation

The most common system of agriculture practised in Nigerian traditional villages is shifting cultivation. Under this system the farmer clears a piece of land and plants his crop. After one to three successive planting seasons, he leaves this piece of land and clears another, to allow the first piece of land to regain its fertility. He (farmer) may come back to the first piece of land after many years. During this period, this first piece of land grows into a bush and the land regains its richness through the leaves that fall and decay on the soil. This system was practicable in the older days because population was small and the farmer plants only for himself and his family.

Nowadays, because of increase in population, shifting cultivation may not be desirable and practicable, in some areas.

3.2 Land Rotation

A modified form of shifting cultivation is called land rotation. Under this system, a farmer makes use of a piece of land, over a number of years, when he feels that the land is becoming poor, he leaves it for another plot only to come back to the original plot, after some years. Land rotation is still practiced in some part of the tropics, especially in sparsely populated districts. This, in a region known for rapid re-growth of its secondary vegetation- like the equatorial and rain forest zones, present no problem to its pre-cultivation level. However, the condition is different for grass land areas, as the grass does not drop enough litter to restore the fertility of the soil rapidly.

Another factor which makes shifting cultivation and land rotation undesirable in grassland areas is frequent destruction of humus through indiscriminate bush burning etc. This is due to the method of disposing rubbish after cleaning since the vegetation in the tropics cannot easily be buried after clearing; the easiest way of disposing of it is by burning. During burning, fire burns the humus of the soil and in addition destroys some of the elements of nutrient like nitrogen, sulphur and carbon. Sometimes, the fire spreads over the fallow plots and destroys the vegetative cover, as well as any litter that could have been added to the soil. The soil is exposed to unnecessary leaching and soil wash. Some of the features of shifting cultivation are mixed cropping, bush fallow, subsistence farming and extensive farming.

SELF-ASSESSMENT EXERCISE

Mention the two traditional agricultural systems we have just discussed.

SELF-ASSESSMENT EXERCISE

Briefly explain shifting cultivation.

3.3 Mixed Farming

This means planting more than one type of crop on one plot of land at the same time. Yam, Maize, Melon, and Okra often go together, while maize, cassava and okra are planted on the same plot. The purpose of planting more than one crop on a plot of land is to prevent crop failure and to fully utilise the fertility of the soil. It has even been argued by some people that under the traditional methods of farming, mixed cropping is more economical; they held that total proceeds from a plot on mixed cropping have been found to be greater than that for a similar plot on sole crop. In order to achieve this successfully, the following points are very essential:

a. The soil must be in a very fertile condition.

b. The crop must be such that none disturbs the progress of the other.
c. All the crops should not be equally vigorous at the same time to allow even nutrient uptake. d. Some must be shade tolerant.
e. The nutrient requirements of the crops should not be too identical to avoid excessive competition.

The most suitable combination of plants for intercrop planting involves those that have a definite difference in their rate of growth. Hence, a crop that matures after several months may be intercropped (with an advantage) with a crop that matures in half the time. When the early maturing crop is harvested, it gives room for the late maturing to develop fully. Examples of typical combinations for inter-cropping with local crops are- tomatoes and green vegetable, hot pepper and okra, egg plant and spinach/green vegetable , sorghum or millet, cowpeas/millet or cowpea/cotton, guinea corn/cowpea/groundnuts, maize/cassava/barbara groundnuts. With modern farming methods, mixed cropping has the following disadvantages:

a. The fel1ilizer mixture suitable for one of the crops may not be suitable for the other crops. This may reduce the yield of the other crops.
b. A plot containing different crops of varying heights and distances cannot be easily adapted to mechanisation.

3.4 Bush Fallow

Here, when a farmer observes that the soil has lost much of its fertility, he moves over to another plot of land leaving the former plot to re-grow into a bush. When a plot is under bush fallow, there is hardly any addition of nutrients to the soil. If, however, the fallow period extends to five or more years, the roots of the plants in the plot will grow deeper into the subsoil. Thus, they will recapture the nutrient elements lost from the topsoil through leaching and return them to the topsoil through leaf fall. This accounts for the rejuvenation of soil under bush fallow.

3.5 Continuous Cropping

This system, practiced in densely populated areas involves putting a piece of land under cultivation from year to year. The crop planted may either be annual or perennial. Continuous cropping can be well organised in a crop rotation system but it often leads to soil exhaustion, erosion and low productivity.

3.6 Mono-cropping (Sole Cropping)

This is the practice of growing exclusively one type of annual crop and harvesting it before planting another one on the same plot of land. It is a risky system, analogous to carrying all one’s eggs in one basket. The farmer will be exposed to the danger of poor harvest, in case of adverse climatic condition or invasion of pest and diseases; and he may be forced to depend on other farmers for other food crops that he does not produce.

3.7 Crop Rotation

This is the third stage in the evolution of farming system. Crop rotation can be defined as fixed sequence of growing different crops on one field at different times. Crop rotation involves the use of land- but the crops planted on the land are changed from year to year or from season to season.

Crop rotation has replaced land rotation and shifting cultivation in all advanced countries. Even in more primitive societies, the rapid increase in population has forced people to come closer to crop rotation. Under the population pressure, it is no long possible to allow a fallow period of up to three years, in most communities. In that case, the land has to be used almost continuously. In such a circumstance, the fertility of the soil has been maintained by the application of manure and fertilizer- different crops require different amount nutrient. Some use much and are known as exhaustive crops- e.g. maize, yam, and cassava. Others can actually add nutrients to the soil e.g. legumes. Every year, a different kind of crop is planted in order to prevent depletion of nutrient.

The crops should be arranged such that an increase in the yield of one results in an increase in the yield of the next crop. For example a good legume crop will increase the nitrogen content of the soil, with the result that if the next is maize- which requires nitrogen, it will do well. Crops that require high nutrient should come first in the rotation. Some crops have deep root that go deep into the soil and therefore feed deep, others have shallow roots. This enables the deep feeder to collect some of the nutrients materials that could be washed into the subsoil.

It is necessary to consider the pest and diseases that attack crops in the rotation. As far as possible, the crops that are prone to being attacked by the same diseases or pests should not follow each other. Where a pest or disease has been identified, crops that are very resistant to the pest or diseases should be planted first. This will lower the incidence of the disease. Cultural practice should also be given adequate consideration. The only snag in this system is the cost involved; stumping especially can be very expensive, particularly in the forest zones.

3.7.1 Inter-planting

This involves growing any major crop in between another crop, on the same piece of land. The crop planted later remains on the plot after the first crop has been harvested. Cassava and maize can be grown in this way.

3.7.2 Inter-cropping

This is the planting of quick-growing and quick-maturing crops between slow-growing and slow-maturing crops. Melon is intercropped with Yam, for example. The

life cycle of both crops are short enough for them to fall within the same course, in the same year- e.g. groundnut is followed by late maize.

3.7.3 Advantages of Crop Rotation

a. It facilitates the control of weed, pest and diseases.
b. It makes for effective utilisation of plant nutrient.
c. Under a good system of rotation, the fertility of the soil is maintained.
d. Labour is used much more effectively.
e. The soil is put into maximum use, without being destroyed.

3.7.4 Plan of a Rotation

Divide your land according to the numbers of crop, according to the numbers of years. Suppose you have four crops- a, b, c, and d to be planted on four plots of land A, B, C, and D respectively for the first season; during the second season, crop b goes to A, c to B, d on C and a on D. During the third season, c goes on a, d on E, a on C and b on D for the fourth season, d goes on A, a on B, b on C and c on D; the rotation is completed and the system starts all over again.

Table 3.1: Year Crop Rotation Plan

1st Season	**2nd Season**	**3rd Season**	**4th Season**
A A	A c	A c	A d
B B	B C	B d	B a
C C	C d	C a	C b
D D	D a	D b	D c

An efficient rotation is one that maintains soil structure and controls pest and diseases. This can be judged on long term basis. In this rotation, yam is inter-planted with vegetables like telfairia, which helps to cover the soil against splashing or rain-drop erosion.

Basic concepts

Table 3.2: A Rotation Plan with Local Crops

	BLOCK I	**BLOCK II**	**BLOCK III**	**BLOCK IV**
1st Year	Yam i.p.w. Vegetables	Early maize *i.p.w. cowpeas **f.b. late maize	Cassava	Cowpeas
2nd Year	Early maize	Cassava	Cowpeas	Yam i.p.w.

	i.p.w. cowpeas f.b. late maize			Vegetables
3rd Year	Cassava	Cowpeas	Yam *i.p.w. Vegetables	Early maize *i.p.w cowpeas **f.b. late maize
4th Year	Cowpeas	*Yam i.p.w. Vegetable	Early maize *i.p.w. cowpeas **f.b. late maize	Cassava

i.p.w.*: inter-planted with
f.b.**: f.p;;pwed nu

At the end of the third year, a lot will have been removed from the soil. Cowpea is then put in to help replenish the soil. In this rotation, it has been assumed that no pests or diseases have been detected to prevent late maize from following early maize.

3.8 Mixed Farming

The integration of animal production and crop production on the same farm is described as mixed farming. By this method, the farmer can operate throughout the year and he can operate economically. He can feed his animals - cattle, pigs, chickens with his farm products, especially at times when such crops are attracting low price in the market. Also, the need to have a source of manure in order to maintain effective rotation makes some people to combine crop production with animal husbandry. Another advantage of this system is that farm yard manure can be used to enrich the soil, and also farm by-products like straws, groundnut, and cowpea can be used as livestock feed. In some communities, the animals not only supply manure but also serve as a means of transportation and provide labour for ploughing.

SELF-ASSESSMENT EXERCISE

Differentiate between crop rotation, mixed cropping and bush fallowing.

SELF-ASSESSMENT EXERCISE

List five traditional agricultural systems.

4.0 CONCLUSION

It has been highlighted to you in this unit that, from time immemorial, traditional agriculture in the forest and savannah zones has proved to be man’s most effective response to his environment in ensuring his survival and prosperity.

5.0 SUMMARY

Agricultural systems are the various method used by different groups of people for producing crops and livestock in order to supply human needs. Some of these systems include shifting cultivation, crop rotation, mono cropping, monoculture, and mixed farming, to mention just a few.

6.0 TUTOR-MARKED ASSIGNMENT

1 a. What is crop rotation?
b. State the advantages of crop rotation.
2. Write a short note on the following:
a. shifting cultivation
b. mixed farming
c. pastoral farming.

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UNIT 10 ENVIRONMENTAL FACTORS AFFECTING AGRICULTURAL PRODUCTION

CONTENTS

1.0 INTRODUCTION

This unit will focus, mainly, on the environmental factors affecting agricultural production, especially in Nigeria. The environment in any particular place determines the types of soil that can be formed in the place, the type of crops and animals that thrive in the place and their rate of multiplication or decrease. As a result of the limited resources available to Nigerian farmers, farming business is affected, to a greater extent, by the capacity of the soil to provide nutrients and to hold water. Nigeria falls within the area designated as tropical region and it is characterized by high temperature and heavy rainfall, throughout the year.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- highlight the main climatic factors affecting agriculture
- describe the various factors suitable for the growth of crops.

3.0 MAIN CONTENT

3.1 Environmental/Climatic factors

The environment factors affecting agricultural production in Nigeria can be grouped into climatic, soil or edaphic factors and biotic factors.

Climate is the average weather condition. Its factors are insulation, temperature, pressure, wind and rainfall. Each of these factors has its own influence on agriculture.

i. Temperature

This is about the most important factor influencing the physiological functioning of plants. Variation in temperature influences agricultural practices in different parts of Nigeria. The average monthly temperature varies between 210c and 350c. The range is increasing from the coast towards the interior, but the northern part has hotter days and cooler nights giving rise to higher yield of some crops like tomatoes in some areas of the north than in the south. Tomato thrives more in a condition of hot days and cooler nights.

Also with increase in altitude, temperature becomes cooler and this is the cause of excellent performance of tea and Arabica coffee on the Mambila Plateau, in Nigeria.

As a result of high temperature, some temperate crops that thrive in Nigeria cannot flower because they need a period of exposure to cold to induce flowering.

The low productivity of our livestock is mainly blamed on the effect of high temperature; while poultry could still be comfortable at 350c, the cattle can no longer cope at a temperature above 32.20c. High temperature may give rise to all or some of the following conditions in farm animals:

a. reduced feed intake or loss of appetite
b. decrease in productive processes of growth, rate of egg laying, rate of milk yield etc.
c. reduced body weight
d. embryonic death and dwarfing
e. reduced fertility in exotic male animals.

Attempts have, however, been made to modify the environment of crops and animals to the extent of the level of our technology. For instance, shade treatment is given to our crops from nursery through all the juvenile stages of the cocoa plant. Grazing animals are also provided shade in their paddocks and are also sheltered at night. Grazing pattern also designed to ensure that the animals are under shelter in the afternoons.

ii. Relative humidity

This is the amount of moisture in the atmosphere; low humidity can cause heat, while high humidity reduces evapotranspiration. The effects on crops and animals include change in rate of heat loss and decrease in water consumption, in spite of increase in frequency of drinking. The effect of situation is increase in heat loss which can disorganize the metabolic system of the animal. Changes in temperature aggravate the effect of relative humidity. In low humidity areas of Nigeria, evaporation takes place rapidly such that evapotranspiration balance is in jeopardy. Similarly, in hot humid areas of the country, evaporation takes place slowly, hence, the rate of heat loss in both plants and animals. All these have some serious effects on agricultural productivity in Nigeria.

3.1.1 Day Length: Short-Day Plants

There is almost a constant day length phenomena, throughout the year, in Nigeria. However, the little difference that exists has more remarkable effects on plants and animals. Plants are therefore classified into (1) Short-day (2) Long-day and (3) Day neutral.

Short-day plants are those that starts flowering when the length of day is short e.g. okra (Hibiscus esculentus). The short-day variety is the early maturing ones which complete their life cycle within 60-72 days.

3.1.2 Long-day Plants

These are plants that will start flowering when day length is long- e.g. a variety of okra which stays in the field for about 270 days before flowering (i.e. the late maturing variety).

3.1.3 Day Neutral Plants

These are plants which start flowering at any period, irrespective of day length- i.e. non-photosensitive plants e.g. tomatoes (Iycoperiscon esculentus). Farmers are advised to take advantage of the photoreaction of our different local crops while planning for their farming activities.

iii. Rainfall

Rainfall has the greatest control over agricultural production activities in Nigeria. The types of crop grown in different ecological zones of the country are direct response to the pattern of rainfall in these parts. As we move from the southern part to the northern part of the country, the amount of annual rainfall decreases, and becomes more unevenly distributed. Associated with this change is the gradual transition from rainforest vegetation, through wood land to savanna vegetation. The wettest parts of the country have two rainfall peaks separated by a short period of insufficient rainfall (usually, August) for crop growth and this interval demarcates the early and late starting seasons.

To the northern part, especially the far north, unevenly distributed rainfall per year lasts 3 months which (baring supplemental irrigation) allows only one planting season per year. The crops with short life span, especially small grains are suited for this zone. Cashew can, of course, grow well in many parts of the North; while other trees crops which require a lot of water are better suited for the southern zones.

The effect of rainfall on land productivity is highly remarkable in all the ecological zones of the country. In the rain forest zone of the south, the soil tends to be infertile because of the impact of heavy rainfall which causes leaching and erosion, thereby resulting in low yield. In the North, insufficient and irregular pattern of rainfall also makes crop yield unpredictable. For example, except sorghum and millet are planted with the first rains, the resultant establishment problems may necessitate replanting or reduced plant population; both of which may lead to reduction in yield or total crop failure if rains cut off abruptly at the critical reproductive period of the crops.

The seasonal pattern of rainfall in Nigeria also affects livestock production activities. Rainfall pattern affects ultimately the amount of feed that can be produced for livestock, the length of time forage will maintain high quality, the grazing pattern to adopt, and the requirement for stored and supplementary feed supplies. In all, the

southern part of the country experiences an average of 7 months of rainfall and about 5 months of fairly dry season, while in the northern part the opposite is the case.

To reduce these adverse effects of environmental factors, Nigerian scientists have continually reviewed the requirements of crops and animals in a bid to modify the existing production systems, so as to attain self-sufficiency in crop and livestock production.

iv. Air movement

This is air in motion; and the rate affects evaporation of transpired water droplets from plant leaves. At moderate temperature, the more rapid the movement of air is, the more effective it will be in reducing heat load of animals when moisture is present on the skin. It also influences the amount of radiant energy that plants and animals receive by altering the temperature of surrounding objects. To ensure free flow of air movements through tree crop plantations, cultural practices like weeding, pruning and spacing suitable for each crops is adopted.

v. Solar radiation

Solar Radiation is very important in agriculture; this is because it is the source of energy used by plants during photosynthesis. The amount of this energy received on the earth surface (isolation) tallies with the latitude of the area and season of the year. It affects the rising and roosting of animals and also accounts for the opening and closing of the petals of certain flowers- e.g. sunflower. It is, as well, necessary for the maturity and germination of seed. Lack of solar radiation leads to etiolation- as plants will become yellow and thin. In Nigeria there is sufficient solar radiation throughout the year. However, the amount of solar radiation received on the earth surface each day depends upon:

i. the intensity of the radiation
ii. the amount of the cloud cover
iii. the length of day.

SELF-ASSESSMENT EXERCISE 1

i. Explain the term environment.
ii. Mention three environmental factors.

3.2 Soil Factors (Edaphic)

Soil is the home of crops. Crops get their food from the soil in form of solution. The nutrients in the soil are dissolved by water and thereafter picked up through the roots of plants. Without the soil therefore, there cannot be agriculture. The type of soil, its richness or otherwise and the type of minerals available in it determine the crops that grow on it. The soil has different qualities. For example, there are differences in

texture, structure, nutrient content and even content of poisonous and harmful materials.

There are differences in soil-pH; crops will grow on soils that have qualities that they can tolerate. In the same way, animals including man, feed on the plants that they can tolerate, and survive more in places where those things they want abound. In general, the soil may be acidic (pH less than 7), neutral (pH is 7) or alkaline (pH higher than 7) poor crop growth obtained in acid soils may be due to aluminum toxicity, calcium and magnesium deficiency or manganese toxicity. Liming of such soils reduces the toxic effect.

3.3 Biotic Factors

The biotic factors influencing agriculture include pests, diseases and soil microorganisms that exist in the neighborhood of plants and animals. We have microorganism that lives in the soil and the air. These are predators i.e. organism that feeds on other organisms. There are parasites and saprophytes. Parasites are living organisms that depend on other living organism for their food, while saprophytes are living organism that lives on dead and decaying remains of other living organisms. There is competition among living organisms for all the necessities of life. The success or failure of any crop or animal in any particular place is affected by its relationship with the other organisms that live in the same place and interact with it.

SELF-ASSESSMENT EXERCISE 2

i. Give an account of the way rainfall affects agricultural production in Nigeria.
ii. Explain the environmental factors affecting agricultural production in Nigeria.

4.0 CONCLUSION

Climatic factors influence agricultural production in Nigeria, while rainfall distribution, more or less, determines the rate and distribution of agricultural products. Hence, adequate presence of these factors definitely leads to a bumper harvest.

5.0 SUMMARY

In this unit, you have been exposed to the environmental factors influencing agricultural production in Nigeria. These factors determine production and yield during the season, especially for both crop and animal production.

6.0 TUTOR-MARKED ASSIGNMENT

1. Give an account of the ways in which rainfall affects agricultural production in Nigeria.

2. Explain the effect of climatic factors on agricultural production.

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MODULE 3

UNIT 11 THE NEED FOR AGRICULTURAL COOPERATIVES
UNIT 12 PROBLEMS OF AGRICULTURAL CO-OPERATIVES
UNIT 13 AGRICULTURAL DEVELOPMENT POLICY
UNIT 14 AGRICULTURAL DEVELOPMENT PLANNING
UNIT 15 AGRICULTURAL DEVELOPMENT PROGRAMMES

UNIT 11 THE NEED FOR AGRICULTURAL COOPERATIVES

CONTENTS

1.0 INTRODUCTION

This is a follow up to Unit 1 which spelt out Co-operatives in Agriculture. This Unit deals directly with the need for agricultural cooperatives. You will recollect from the proceeding unit that cooperatives came to Nigeria through agriculture and this is the need for us to examine agricultural co-operative at this stage and its contributions to the socio-economy of Nigeria.

2.0 OBJECTIVES

At the end of this unit, you should be able to:
• understand the need of agricultural co-operatives;
• explain the various types of agricultural operatives; and
• explain farmers' benefits as a co-operator.

3.0 MAIN CONTENT

3.1 Definition of Agricultural Co-operatives

Agricultural Co-operatives are autonomous associations of persons united voluntarily to meet their common economics, social and cultural needs and aspirations through jointly owned and democratically controlled agricultural enterprise. 3.2 The Need for Agricultural Co-operatives

From the various monitoring exercises and the extension services in the data collected, the following specific conditions of small-scale farmers necessitates collective action through the formation of agricultural cooperatives.

1. The individual small-scale farmer is often unable to procure and use efficiently inputs to production such as land, capital etc. 2. The individual small-scale farmer is too poor to bargain for discount in the input market and ensure regular supply. 3. The farmer alone is unable to take advantage of economics of scale, thus production units are underutilized. 4. The farmer is rarely able to withstand losses arising from natural hazards. 5. The farmer is unable to carry out marketing research required for efficient marketing of produce 6. The individual farmer cannot demonstrate to the appropriate authorities his/her need for public utilities and agricultural infrastructures for enhanced productivity. 3.3 Types of Agricultural Co-operatives

Different types of agriculture co-operatives, because they are not directly involved in production process. However, they provide services which are vital for effective performance of the members, who undertake agricultural production. There are various forms of auxiliary agricultural co-operative societies. Some of these are discussed below.

3.3.1 Auxiliary Agricultural Co-operatives

These are also referred to as service co-operatives, because they are not directly involved in production process. However, they provide services which are vital for effective performance of the members, who undertake agricultural production. There are various forms of auxiliary agricultural co-operative societies. Some of these are discussed below.

3.3.1.1 Agricultural Thrift and Credit Co-operative Society (ATCCS)

This society otherwise, called Rural Thrift and Credit Co-operative Society, accumulate capital through member's shares, savings etc. and external loan when necessary. The society encourages thriftiness amongst members and thus helps to save members' money. Fund created is disbursed to members as credit for productive purposes. A major benefit of this type of society is that members have easy access to credit facilities. The lending policy is devoid of the numerous bottlenecks prevailing with other formal financial institutions such as laborious paperwork, demands for collateral security, guarantor etc. It operates a character lending policy. Guarantors are another member. The interest rate is relatively low, with an average maximum of 10% interest per annum, compared with other credit sources. Members are also educated on the management of loan. Thus, a well-organized and efficiently managed ATCS enhances members' solvency and solves their problems of indebtedness.

3.3.1.2 Agricultural Supply Co-operative Society (ASCS)

Agricultural Supply Co-operative Society pools members' resources to procure inputs of production such as farm tools, agro-chemicals (fertilizers. herbicides etc), improved seeds and seedlings and retail to members at fair prices. The society takes advantage to economies of scale and discount given for bulk purchase. This arrangement ensures easy, timely and regular supply of inputs to the farmers. The supply of inputs is also made to tally with seasonal requirements. When effectively managed, members are encouraged to increase and sustain their productivity levels. The Co-operatives Supply Association of Nigeria is a regional apex organization registered in 1951. It procures and distributes .agricultural chemical and equipment in Nigeria.

3.3.1.3 Agricultural Produce Marketing Co-operative Society

Agricultural Produce and Marketing Co-operative Society collects members' produce and sells same "on the market" at the best possible price. The proceed is passed on to the members. Through this collective effort marketing cost is minimized, better prices are demanded, activities of middlemen are reduced and members' income are stabilized to a great extent.

Originally, marketing co-operatives was organized for cash crops (cocoa, cotton, groundnut, coffee, palm kernel, ginger, copra, chillies). Co-operatives has however developed to embrace food crops such as rice, palm oil, beans etc. Agricultural marketing co-operatives have a vital role to play in interstate commodity trade.

Other types of single purpose agriculture co-operatives include processing and storage co-operative societies.

SELF-ASSESSMENT EXERCISE 1

Explain the need for agricultural co-operative especially for the small scale farmers.

3.3.2 Agricultural Production Co-operatives

There are three main types of agricultural production co-operatives. The degree of integration of members' activities is the main distinguishing factor. These are as follows:

3.3.2.1 Agricultural Production Co-operative Society Operated on Individual Basis

Members carry out actual production activities on their separate farmlands, at their own risks and responsibilities. However, since the objectives of this society is to produce best quality products at least cost possible, capital resources, are pooled together to purchase all inputs of production. It is often organized by farmers with contiguous farms. In this way, cooperative successfully avoids exploitation of the members. Members also readily have access to credit and market information. Modern technology or innovation is also readily dissemination to members for improved productivity cooperative, is essentially a multipurpose cooperative society because it provides multiplicity of services to member

3.3.2.2 Agricultural Production Co-operative Society Organized Jointly by Members

This type of co-operative society is called by different names, in literature, such as community cooperative farm, cooperative group farming society, joint farming society etc. A very significant feature of this cooperative is that the farms are run on communal basis. All factors of production, land, labour, capital, skill etc are integrated. The land is cultivated as a single farm with centralized management. The society plans the production programme, and provides security to the members. It is obligatory for each member to be actively involved in the production activities of the society based on the society's policy. All inputs of production are purchased jointly and hence farmers enjoy the benefit of economics of scale, avoid exploitation and ensure regular supply of inputs, the products of the society are sold jointly to the best advantage of the members.

Proceeds realized are shared amongst members after deduction of total expenses incurred and providing for all statutory reserves. This is shared in proportion to the member's contribution to society's activities.

3.3.2.3 Co-operative Tenant Farming Society

This type of agricultural cooperative society obtains land on freehold, divide same into suitable holdings and lease to members to cultivate as tenants, with the society as landlords. This is very important in areas where individual funds are very difficult to acquire land for agricultural production due to institutional barriers.

Each member pays a fixed rent for his or her farmland. While the cultivable land is farmed according to the society's plan, members are at liberty to produce desired crops and livestock. Depending on the byelaw, the society, any arrange for supply of other inputs of production required by members and marketing of members produce. The profit made after meeting all expenses and providing for reserves is shared among

members in proportion to the rent paid and patronage by tenant members of the society's services.

SELF-ASSESSMENT EXERCISE 2
i. What is an auxiliary agricultural cooperative?
ii. Explain the term agricultural production cooperatives.

3.3.2.4 Agricultural Multi-Purpose Co-operative Society

This is organized by farmers with the objective of providing more than one service to themselves. The society performs at least two functions. It promotes integration of economic activities such as mobilizing capital to provide credit and inputs of production to members. It may also assist members with storage, processing and marketing of produce. The range of services provided by the society is determined by the members and the society's capability.

Agricultural multi-purpose cooperative enhances members' participation in the society and reduce disloyalty exhibited by members who belong to more than one society. However, for easy integration of the functions performed by a multi-purpose agricultural cooperative, the society should take off as a single purpose cooperative, with gradual introduction of other functions, one at a time. This allows for efficiency in the performance of the society. In this case, the success records in performing the single function provide the impetus for providing additional services.

Agricultural multi-purpose cooperative society has some significant advantages over single purpose cooperative society. These include the following:

1. A multi-purpose co-operative society has some significant advantages in that multi-purpose societies employ only one set of management staff i.e. one manager, secretary, book-keeper etc. this results in savings in money expended on staff emoluments.
2. The principle of diversification of enterprises employed ensures stability of the society and members' income.
3. It promotes linkage of economic activities
4. It reduces proliferation of subscription of shares, savings etc to various single-purpose co-operative societies.
5. Agricultural multi-purpose co-operative has greater capacity for promoting rural development by integrating many economic and social activities under an umbrella.
6. Suppressing and auditing of multi-purpose co-operative society is also cost effective compared with two or more single-purpose societies which offer similar services.

Inspite of these merits, multi-purpose co-operatives require great skill to manage due to the multiplicity of operations.

3.3.2.5 Farm Settlements Co-operative Society

A farm settlement scheme is a scheme designed deliberately to settle farmers outside their native homes where they will be taught and encourage to adopt new techniques of agricultural production instead of the traditional methods they are used to. Farm settlements are established by the government and given to farmers-settlers to manager. The cardinal objectives of the settlement are:

1. To provide employment to young school leavers who may not be absorbed by the public service and private sector.
2. To reserve the prevalent rural-urban drift by making rural life comfortable and attractive.
3. To ensure effective utilization of national and land resources especially in sparely populated areas where fragmented land holdings have been consolidated.
4. To increase and maintain agricultural production at a level to sustain the population.
5. To create awareness of the importance of agriculture in people and demonstrate that farming is as lucrative as white-collar jobs.

Often, the government provides the settles with dwelling places, contiguous land holding, while most inputs of production are supplied at the beginning, at subsidized rate. This is to stimulate participants' interest in the programme. However, the settlers pay for the resources provided including cost of housing over a specified period at fair interest rate. The setters, on completion of the repayment, become the owners-occupiers of their houses and other facilities on the terms of contract.

The factors that determine the sizes of settlers holding include:

a. Available family and hired labour
b. Size of family income
c. The extent to which the family can use in divisible inputs of production like tractors and machinery
d. Economics of scale in all the operators of the farmer

Farm settlement co-operative society is therefore formed when the settlers pool their resources together to undertake agricultural enterprises on co-operative principles.

3.4 Farmer's Benefits as Co-operators

A farmer derives both social and economic gains as a member of cooperative society. By belonging to an agricultural co-operative society, he/she learns such virtues as (1) orderliness (2) foresight (3) punctuality and (4) strict respect for engagements entered into, which are not necessarily profit-oriented. In addition, the farmers make socio-economic gains. These include:

1. The farmer is now a part of a social gathering identified by common needs and objectives.
2. There is usually a sense of belonging which makes him/her act in concert with others in matters affecting the group, in the decision making process and implementation of programmes. Thus, he/she is exposed to better opportunities for skill improvement.
3. The farmer-member has access to the tree training and functional education facilities provided by the society.
4. Economically, farming needs and problems of each member are the concern of the group e.g. he/she .could hire agricultural machinery and equipment from the society more cheaply than buying these as an individual.
5. Agricultural inputs (seeds, seedling, insecticides, fertilizers, fungicides etc) could easily be obtained and at cheaper prices by the farmers from the co-operative society.
6. There is also a great opportunity for capital formation. The farmer-members pool their financial resources together with a view to providing credit to members.

7. The equitable distribution of bonus to members from the society's annual surpluses is assured. Besides the share capital payable by each member is within the reach and control of members.
8. The members of co-operatives have easier access to government aid schemes for improved production and income such as agricultural loan facilities.
9. A member of co-operative society can also process, store and market his/her farm products more efficiently and for a lower cost through the use of joint facilities and services provided by the society.
10. Finally, there is significant increase in farmer's productivity, income and eventually increased standard of living, general welfare of the farmer and his/her family.

SELF-ASSESSMENT EXERCISE 3
i. Mention the various types of agricultural co-operatives. ii. Give five benefits of farmers as co-operator.

4.0 CONCLUSION
This unit has really analyzed the various types of agricultural cooperatives and the need for these co-operatives.
5.0 SUMMARY
This unit gave a better understanding of the need for agricultural cooperatives especially the small-scale farmers which also highlighted the types of agricultural co-operatives to include the auxiliary, production, and multi-purpose. It also explained the farmer's benefits as cooperators.

ANSWER TO SELF-ASSESSMENT EXERCISE 1
The need for agricultural co-operatives includes:
a. The individual small-scale farmer is often unable to procure and use efficiently inputs to production such as land, capital etc. b. The individual small-scale farmer is too poor to bargain for discount in the input market and ensure regular supply. c. The farmer alone is unable to take advantage of economics of scale, thus production units are underutilized. d. The farmer is rarely able to withstand losses arising from natural hazards. e. The farmer is unable to carry out marketing research required for efficient marketing to produce. f. The individual farmer cannot demonstrate to the appropriate authorities his/her need for public utilities and agricultural infrastructures for enhanced productivity.

ANSWER TO SELF-ASSESSMENT EXERCISE 2
i. Auxiliary Agricultural Co-operatives are referred to as service co-operatives because they are not directly involved in the production process. However, they provide services which are vital to effective performance of members who undertake agricultural production. These are various forms of auxiliary agricultural co-operative societies. These include:
- Agricultural Thrift and Credit Co-operative Society
- Agricultural Supply Co-operatives Society
- Agricultural Produce Marketing Society

ii. Agricultural Production Co-operatives are those societies that specialize in the production of food, raw materials for the local industries. They all carry out production activities. The degree of member's activities is the main distinguishing factor. This includes:
- Agricultural Production Co-operative Society Operated on individual basis.
- Agricultural Production Co-operative Society organized jointly by members.
- Co-operative Tenant Farming Society.

ANSWER TO SELF-ASSESSMENT EXERCISE 3
i. The various types of agricultural co-operatives include:
a. Auxiliary Agricultural Co-operative - Agricultural Thrift and Credit Co-operative Society (A.T.C.S) - Agricultural Produce Marketing Society (A.S.C.S)
ii. Agricultural Production Co-operatives:
- Operated on Individual basis - Operated on Joint basis - Operated on Tenant Farming Society - Agricultural Multi-purpose Co-operative Society - Farm Settlement
ii. Five benefits of Farmers as a Co-operator include:
- The farmer is now a part of a social gathering identified by common needs. - There is a sense of belonging that makes then concern with others in matter affecting the group. - The farmer member has access to free training and functional education. - There is also a great opportunity for capital formation. - Easier access to go government aid schemes.

6.0 TUTOR-MARKED ASSIGNMENT

1. a. Briefly explain the term farm settlement
   b. What are its objectives?
   c. State clearly the factors that determine the sizes of settlers holding.
2. Make a clear distinction between farmer's production cooperatives and farmer's services co-operatives.

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UNIT 12 PROBLEMS OF AGRICULTURAL CO-OPERATIVES

CONTENTS

1.0 INTRODUCTION

This unit deals with the problems confronting agricultural co-operatives in Nigeria. You will recollect that in Unit 2, we dealt with co-operatives and make particular reference to agricultural co-operatives. These problems discussed in this unit retarded the growth of agricultural Cooperatives. Definitely if efforts are geared towards the solutions of these problems the rate of agricultural development will be increased and more food production will be noticed in the markets which will directly leads to increase in farmers' income and standard of living in the rural areas. The general effect will be self-sufficient in food production, a final direct effect on the National Output and an increase in the foreign exchange earnings as it was the case in the early 1960s with agriculture in Nigeria.

2.0 OBJECTIVES

At the end of this unit, you should be able to:
• identify the problems of agricultural co-operatives; and
• examine the problems with their solutions.

3.0 MAIN CONTENT

3.1 The Problems

Agricultural co-operatives all-over the worlds are subject to problems that may hinder the growth and development of any group. Problems which are specific to farmers group in Nigeria will be fully discussed here. These include the following:

3.2 Inconsistent Policy

Government lack basic consistent policy on the establishment and management of agricultural co-operatives. What we have may be referred to as management statements based on projects which in themselves are planned and run on an ad-hoc basis. In this regard, any project initiated by a particular government regime is usually phased out with the exit of such a government. The Operation Feed the Nation (OFN) Programme gave way to Green Revolution Programme with change of government in 1979.

The instability of the Federal Department of Agricultural Co-operatives is another factor which hinders development of Agricultural Cooperatives in Nigeria. The Federal Department of Agricultural Cooperatives was carved out of the Federal Department of Co-operatives where it was a division in 1979. It was moved to the Federal Ministry of Agricultural Co-operatives Policy. The department provides

institutional supports for effective performance of agricultural co-operatives in the country, through:

a. Provision of on-farm storage depots to farmers co-operatives
b. Effective distribution and marketing of inputs (fertilizers and agro-chemicals) and outputs through the National Agricultural Co-operative and Marketing Organization (NACMO).
c. Facilitating co-operative groups access to credit and security through the Nigerian Agricultural Insurance Company (NAIC) respectively.

In 1989, the Federal Department of Agricultural Co-operatives activities were almost grinding to a halt consequent upon its transfer to Directorate of food, Road and Rural Infrastructure (DFRRI) under the Presidency. The commencement of the Federal Government rationalization of ministries in 1992, returned the Agricultural Cooperatives Department to .the Federal Ministry of Agriculture. The frequent movement of the department hampered .the performance of its function within this period. There is need for consistency in the implementation of the agricultural co-operative polity. Agencies responsible for the implementation of agricultural co-operatives development policy need be provided and enabling environment for effective performance and achievement of their laudable objectives.

3.3 Lack of Educational and Administrative Guidance

The poor performance of the agricultural co-operatives in Nigeria is also attributed to lack of administrative guanaco and inefficient management capabilities of members and elected representatives. Farmers willing to form co-operatives may lack knowledge of what to do and how to go about it. This dampens their enthusiasm and they revert to individual peasantry. Besides, the problems of extension services make it very difficult for extension officers to have frequent contact with the fanner co-operators.

Adequate planning need be made for continuing education of farmer cooperators. Farmers all over the world rely on extension agents for educational guidance on how to form and manage co-operative societies. They need to know the elements such as membership size personal character of prospective member of the society, co-operative principles, laws and values, management principles and functions etc.

This problem can be addressed through vigorous co-operative education and management training programmes at Federal, State Governments and co-operatives movement level.

3.4 Lack of Capital

The most frequently demeaned services by farmers is financial assistance. They actually need adequate capital to start any meaningful agricultural production. It could be recollected that so many studies have been carried out with facts and figures and came to the conclusion that capital is the basis of farmers joining the co-operative societies and only few i.e. below 45% have benefited from financial assistance of the society when really in need of fund.

This is an indication that co-operative societies are short of funds to meet the financial needs of their members. It therefore implies that cooperatives need to intensity efforts in sourcing for capital from other financial institutions in order to fulfill the aspirations of members. However, there are difficulties in obtaining finance from those institutions especially in terms of collateral especially from the commercial banks.

3.5 Lack of Storage Facilities

Storage may be defined as the act of preserving and keeping agricultural produce or any commodity for future use without necessarily losing its quality. This problem is most critical in developing countries.

Until we address this particular problem over 70% of our food production will always be lost annually. The importance of storage is enormous and cannot be overemphasized.

SELF-ASSESSMENT EXERCISE 1

List four problems confronting agricultural co-operatives in Nigeria.

3.6 Lack of Process and Inefficient Marketing Scheme

You should remember our discussion of the factors in unit three. The main objective of farmers' co-operatives is to increase member's production through the provision of enabling services. However, due to absence of our inadequate storage, processing facilities and marketing outlets, increase production merely results in farmer's frustration. Hence, there is need for provision of adequate processing: storage facilities and marketing outlets for agricultural produce.

3.7 Lack of Infrastructural and Social Facilities in the Rural Areas

Lack of facilities such as transportation, electricity, water supply, health services, recreational facilities etc. constitutes a hindrance to effectiveness of agricultural co-operatives in rural areas. Existence of these facilities provides an enabling environment for agricultural cooperatives to thrive. Hence, the farmers should be provided with good access roads, good water supply (needed by people, livestock and crops), electricity, basic health care services and appropriate educational facilities. These will tend to stabilize the rural population thus arresting the rural-urban migration, (which is prevalent in the country because of greater wages and comparatively higher standard of living in the urban areas). Therefore, to have a sustained agricultural growth, the farmer (co-operator) should not only be white and blue collar job in tl1e cities) but also be assured of comfortable living conditions in his/her own rural area.

3.8 Lack of Patronage and Membership Qualities

Patronage by the farmer members is one of the key requirements of any co- operative organization. Therefore, the contribution of every member of the co-operative society not necessarily in terms of money but in interest and active participation in running of the society is important for its success. In Nigeria, members patronage of their societies especially farmer's co-operative societies is very poor. Quite often, a high

proportion of members are apathetic to the group activities. This may arise from a number of reasons among which include:
1. Farmers may feel that they spend too much time and energy on the activities of co-operatives and that the benefits they get are not commensurate with the time and energy expended on the society.
2. The returns from 1arms operated by farmers individually may exceed their own share from a co-operative enterprise.
3. Co-operative leaders may be authoritarian or government may exert excessive control on the co -operatives.
4. Farmer - members of co-operative society may feel that the surpluses or the society are not equitably disturbed to them according to their efforts. They also feel cheated if they discover any act of misappropriation of their funds by their representatives. Managers, Secretaries. Etc.
5. The society may be unable to meet its financial obligations promptly e.g. paying each for the farmers, produce .at the time of delivery. A study by Aweto (1984).revealed that about 46% of society's members do not sell all their produce through their society. It was discover that these farmers prefer selling a proportion of their produce to private licensed buying agent who pay cash for the produce when they are in need of money rather than sell to their society. This is due to the fact that the society is not able to make advance payment for the produce delivered by the members.
Another major fault in co -operative farming is the small size and qualities of the members. Members may be too few to make for effective farm operation. Besides, they may be too poor to make any substantial contribution to the initial share capital of tile society.

3.9 Fraud

Fraudulent and dishonest practices have been widely identified as the most serious all which hinders the growth of co-operative endeavors in the country.
Corruption and embezzlement could be widespread among co-operators themselves or amongst the co-operative fund. This consequence has made many co-operative societies or union bankrupt. Sometimes, the administrators or co-operative personnel such as co-operative officers exploit the ignorance of the members by embalming the society's fund. Corruption can also occur if there is not adequate auditing of the society's account.
This situation usually discourages farmer co-operators from participating fully in the co-operatives activities. Apart from this, it prevents potential co-operators from being involved in co-operative; activities .The problem of misappropriation of fund is further worsened by the numerous problems posed by the depressed economy. Thus, cooperatives should evolve management strategies such as internal check or control system for preventing fraud. They also need to ensure that their business transactions are well managed so as to alleviate the problems of their business transactions are well managed so as to alleviate the problems of their employees and members.

3.10 Failure to Employ Competent Staff

Many co-operative societies do not engage the services of qualified and competent manager, secretaries etc. The practice of employing a Senior Secondary School Certificate holder or worse still, a candidate yet to pass his examination, as secretary, manager, book-keeping is common with co-operatives societies and unions. The only co-operative education and training received by these "managers" etc is the three months in-service training organized at the co-operative union levels. This invariably resulted in the poor performance of these societies.

3.11 Poor Management

As a result of employing incompetent staff without adequate education training, there is bound to be poor management of the societies hence many members discouraged in forming or joining co-operatives especially the farmers. Most agricultural co-operatives have died a natural death due to the poor management of all its activities which has been well explained under 3.9 (Fraud) most of the business transactions are not all managed coupled with the books of accounts which are poorly handled.

SELF-ASSESSMENT EXERCISE 2

i. List all the problems confronting agricultural co-operatives in Nigeria. ii. Discuss any two of them

4.0 CONCLUSION

Unless these problems militating against the rapid growth of agricultural co-operatives are attended to, there could be little or no success recorded along this line hence there is need for adequate attention to the solutions of all these problems. 5.0 SUMMARY

The various problems confronting agricultural co-operatives have been identified and examined while there is the need for an urgent or immediate solution to all the problems from the government and the cooperative groups.

ANSWER TO THE SELF-ASSESSMENT EXERCISE 1

i. The problems militating against the development of agricultural co-operatives include:

- Inconsistent policy - Lack of educational and administrative guidance - Lack of capital - Lack of storage - Lack of processing and inefficient marketing system - Lack of infrastructure and social facilities in the rural areas - Lack of patronage and membership qualities - Fraud - Failure to employ competent staff - Poor management

6.0 TUTOR-MARKED ASSIGNMENT

Examine the problems of agricultural co-operatives in Nigeria. In your own opinion, give some practical ways of solving the problems.

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UNIT 13 AGRICULTURAL DEVELOPMENT POLICY

CONTENTS

7.0 References/Further Readings

1.0 INTRODUCTION

In this unit, you will be going through the agricultural development policy. This will give you a better understanding of the government involvement in agriculture. This has greatly affected the development of both agriculture and agricultural co-operatives. Since the Nigerian independence in 1960, we have had almost 15 different types of governments with different policies in agriculture hence the development in agriculture has been nothing to write home about especially in being self sufficient in food production. The agricultural co-operative policy has also not been consistent hence this has also affected the growth and development of Co-operatives especially those that are agriculturally oriented.

2.0 OBJECTIVES

At the end of this unit, you should be able to:
• identify the key points of agricultural development policy;
• understand the policy objectives; and
• examine the role of government in agriculture from the policy.

3.0 MAIN CONTENT

3.1 Definition

Agricultural development policy may be defined as statement of goals, ideals, objectives made by the garment about the agricultural sector of the economy. It is often based on the overall constraints or problems encountered within the sector. It is a declaration of the government of how to solve the identified agricultural problems or constraints. Agricultural development policy therefore indicated the attitude of the government to the agricultural sector witl1in a specified period of time. It outlines the agricultural activities to be undertaken, channels of implementation and systems of accountability. Policy contains targets to be achieved and the means of attaining them. It is referred to as policy objective.

3.2 The Policy Objectives

The primary agricultural policy objectives of any nation are to attain food security. Thus, the Nigeria's agricultural policy focuses on the achievement of self-sustaining growth in every sub-sector of the agricultural sector and the realization of the structural transformation required for overall socio-economic development of the rural environment. Generally, the policy objectives of the Nigeria agricultural sector include:

a. Attainment of self-sufficiency in all basic foodstuff particularly those which consume significant share of the country's foreign exchange but can be produced locally.

b. Acceleration of production and supply of agricultural law materials to meet the growing needs to expanding industrial sector.

c. Increasing the production and processing of export crops thereby enhancing the country's foreign exchange earning capacity.
d. Expansion of rural employment opportunities through improvement in infrastructural facilities in order to increase farmers income and absorb the increasing labour force in the rural areas.
e. Modernization of agricultural production, processing, storage and marketing through improved technology and management techniques, to enable the sector he effectively responsive to the changing demands of the other sectors consequent upon their development.
f. Improvement in the quality of life of rural populace through provision of basic social facilities such as improved health, educational and recreational facilities, electricity, feeder roads and regular portable water.
g. Provision of adequate infrastructures especially those required for combating drought, desert encroachment, soil erosion and flood. Besides, policies are formulated for the various sub-sectors (such as food crop, livestock, fishery, industrial crop, forestry and wildlife, agricultural by-products) and support services (agricultural technology development transfer and extension, credit, insurance, research, land resources. marketing, storage, preservation and processing co-operative etc).
Policies are reviewed periodically in consonance with the prevailing socio-economic conditions, problems and constraints.

SELF-ASSESSMENT EXERCISE 1
Mention four of the policy objectives.

3.3 Problems of Agricultural Sector
You will remember that prior to 1973 when oil emerged as the leading sector of Nigerian economy agriculture was her mainstay as it was the major source of employment, government revenue and foreign exchange. Agriculture's contribution to the gross domestic product in 1970, 1980 were 49% and 21% respectively. Inspite of the declining role of agriculture, it has always been recognized as an important sector in Nigerian economy. It is also an area in which the country possesses considerable comparative advantage. Hence, it offers the greatest potential for expanding the productive base for the nation and diversifying the sources of foreign exchange. With this in view the major problems, constraints and need experienced by the sector are identified and used to formulate policies, strategies and design programmes and projects for the development of the sector. The problems constraints addressed by the development policies are discussed below.

3.3.1 Shortage of Agricultural Inputs
Inadequate input of production is one of the major constraints of the sector. This problem stems from low-level of domestic production, insufficient input, inefficient distribution system and excessive devaluation of the Naira for imported inputs particularly fertilizers, agricultural chemicals, machineries and spare parts. The problem is further aggravated by the following:
1. The little quantity, of inputs available does not get to the farmers when needed.
2. Inputs are not available to the farmers in the correct quantity required particularly inputs such as fertilizers, improved seeds or seedlings, credit, pesticides and

herbicides in the crop sub-sector and animal feed and drugs in the livestock sub-sector.
3. Agricultural machineries, spare parts and improved tools which are either imported or manufactured locally with imported components sell for very high prices which the farmers can barely afford.
4. The gradual reduction of subsidy on agricultural inputs and the prevailing high cost of credit tend to reduce new investments in agricultural sector of the Nigerian economy.

3.3.2 Inadequate Basic Infrastructures

The lack of basic infra structural facilities constitute serious constraints to increased production in the agricultural sector. The breakdown of the problem is given below:
1. There is inadequate supply if irrigational facilities such as dams, boreholes, etc which are required to increase production in areas prone to drought particularly in the North. Although, efforts of the government through the Directorate of Food, Road and Rural Infrastructure (in the past), River Basin Authority and Agricultural Development Projects in alleviating this problem through construction of dams etc has yielded some benefits, further development and maintenance of these facilities are becoming more difficult due to high cost of equipment and spare parts.
2. Inadequate processing, storage and marketing facilities are adversely affecting the preservation and effective marketing of agricultural products. Lack of on farm storage facilities couple farmers to quickly sell their produce to middlemen and in most cases at very low prices.
3. Insufficient feeder reads network causes inaccessibility of rural Nigeria by roads. Thus, transportation and distribution of agricultural inputs and products to and from the farm are hampered.

3.3.3 Technology Related Problems

The level of agricultural technology employed by majority of farmers in the country is still low. Therefore, the agricultural sector still operates at small scale production level. The major problem is that results or research efforts are yet to be transmitted to and adopted by farmers.

3.3.4 Inadequate Extension Services

The problems of extension services and roles it plays in the development of the sector were extensively discussed in chapter two. However, it is important to note, that the problem of low level of technology is further worsened by ineffective transmission of improved technology and farming practices due to ineffective extension service.

3.3.5 Problems Related to the Environment

The crop sub-sector in particular is affected by unfavorable weather conditions such as severe drought (North) soil erosion and flood (South) and disease problems of crop and livestock. Drought and desert encroachment have decimated some crops and livestock which result in heavy losses to farmers.

3.3.6 Poor Implementation of Programmes

On the formulation of agriculture development policies, programmes and projects are devised to attain the policies. Often, the implementation of these programmes and projects are attended by operational inefficiency, due to poor co-ordination of the activities of implementation agencies, high overlap in services provided and unnecessarily high administrative overhead costs. Invariably, these lead to unduly high cost of providing services to the beneficiaries i.e. farmers.

3.3.7 Smuggling

Smuggling activities across the borders of the country is negating the policy of selective closure of Nigerian market to some imports such as food and non-food items. The problems above reflect the socioeconomic, technical, organizational and institutional needs within the agricultural sector. Thus, they provide the basis for the formulation of the policies and designing of strategies through which the policies may be achieved. The strategies are then transformed into programmes and projects of actions which are executed for attainment of the policies. To attain stated policy objectives, planning is imperative and proceeds .programmes of action. What then is agricultural development planning and plan?

SELF-ASSESSMENT EXERCISE 2

i. List the problems of agriculture.
ii. Discuss any two to them.

3.4 Agricultural Co-operative Policy

The Federal Department of Co-operatives in the Federal Ministry of Agriculture is the custodian of all Co-operative Policies in the Agricultural Co-operatives implementing the 1993 Decrees on Nigerian Co-operative Societies in using co-operatives as reliable vehicles for attainment of co-operative programmes as it specifically affects promotion of the development of co-operatives as participatory institution contribution to employment creation, poverty alleviation, income generating and improvement of socio-economic conditions in both urban and rural areas.

3.4.1 The Policy Objectives

The primary policy objectives of the Federal Government on agricultural co-operatives are:

1. To provide a conductive environment which will facilitate cooperative practice and its effective use in agricultural for social and economic development of the rural communities in Nigeria.
2. To promote the development of an effective, efficient and economic agricultural co-operative and use it as a machinery for rural transformation and development

3.4.2 Policy Strategy

In order to achieve these objectives, these strategies are pursued by the government.

1. Intensification of agricultural co-operative education, training and public enlightenment at all levels. This is to increase participation and involvement of farmers and other rural people in co-operative movement activities. Besides it will

hopefully enhance decision making process of the rural people in order to improve their general welfare.
2. To use agricultural co-operatives to achieve the macro-economic objectives of increased domestic production of food and cash crops, industrial raw materials, equitable distribution of inputs and. Production, farm products and other commodities, diversify export earnings and generation of employment.
3. To widen the democratic base in the local communities through co-operative participation in the formulation and implementation of rural development programmes.
4. The methodical and gradual withdrawal of government's involvement in the management and running of the co-operatives. In this regard the government's role in co-operative development will be to create and maintain a conducive socio-economic and political framework and environment for co-operatives to thrive.

SELF-ASSESSMENT EXERCISE 3
Enumerate the strategies used by government in pursuing the policy objectives.

4.0 CONCLUSION
The agricultural policy is directed towards the attainment of food security while the co-operative policy is using co-operatives as reliable vehicles for attainment of co-operative programmes as it specifically affects the promotion of the development of co-operatives as participatory institution contributing to employment creation, poverty alleviation, income generating and improvement of socio-economic conditions in both urban and rural areas.

5.0 SUMMARY
The main point of agricultural policy is to attain self-sufficiency in food production of adequate raw-materials to meet the growing needs of expanding industrial sector. It has also been revealed that the government dictates the pace of agricultural development in Nigeria through the policy objectives.

ANSWER TO SELF-ASSESSMENT EXERCISE 1
The four policy objectives include:
a. Attainment of self-sufficiency in all basic food stuff
b. Acceleration of production and supply of agricultural raw materials to meet the growing needs of expanding industrial sector.
c. Expansion of rural employment opportunities d. Modernization of agricultural production process, storage and marketing through improved technology and management techniques.

ANSWER TO SELF-ASSESSMENT EXERCISE 2
i. The problems of agriculture include:
- Shortage of agricultural inputs
- Inadequate basic infrastructure
- Technology related problems
- Inadequate extension services

- Environmental problems
- Poor implementation of programmes
- Smuggling

ANSWER TO SELF-ASSESSMENT EXERCISE 3

The strategies used in pursing the policy objectives include:

1. Intensification of agricultural co-operative education, training and public enlightenment at all levels.
2. Using agricultural co-operatives to achieve the macro-economic objectives of increased domestic production of food and cash crops.
3. Widening the democratic base in the local communities through co-operative participation. 4. The methodical and gradual withdrawal of government involvement in the management and running of the co-operatives.

6.0 TUTOR-MARKED ASSIGNMENT

1. Discuss the major problems militating against the development of agricultural sector.
2. Explain the term agricultural development policy.

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UNIT 14 AGRICULTURAL DEVELOPMENT PLANNING

CONTENTS

1.0 INTRODUCTION

This unit will critically examine agricultural development planning which are a conscious, sustained and systematic attempts or efforts made by the government to utilize the available agricultural resources of the nation to the benefit of the farmers and the teeming population. Planning gives room for effective implementation of the programme. This is a step further for the implementation of the agricultural programmes and projects. The vital role of the agricultural sector in the economic development of any nation has really prompted this unit to give a better understanding

of this course hence effective panning is a major tool to proper or adequate implementation.

2.0 OBJECTIVES

By the end of this unit, you should be able to:
• identify the importance of planning in agricultural sector;
• examine the various reasons for agricultural planning; and
• understanding agricultural development plan.

3.0 MAIN CONTENT

3.1 Definition

Agricultural development planning is a conscious sustained and systematic attempts or efforts made by the government to utilize the available agricultural resources of the nation to be benefit of the farmers and the teeming population. The ultimate goal is sustained increase in the farmers' income, standard of living and food security of the country. It is a conscious effort to guide the development of the agricultural sector to accelerate economic development of the country.

3.2 Importance of Planning Agricultural Development

It is important to plan agricultural development of any nation for the following reasons:
1. The vital role of the agricultural sector in the economic development of a nation calls for adequate and effective planning of the sector's development.
2. Consequent upon the above, agricultural planning often forms part of the national development plan and this reflects the attitude and hence the objectives of the government or ruling class to the agricultural sector of the country.
3. It ensures that the whole country is evenly developed. All regions, states, local government areas, wards and villages are attended to.
4. Agricultural planning ensures that farmers particularly peasants have access to modern technologies such as irrigation facilities, which are beyond their capability die to lack of capital.
5. Agricultural planning ensures that the desired agricultural production pattern for the country is achieved. Production patterns should be left to market forces to determine. If market forces place high value on particular crops such as cocoa or rice, the tendency is for farmers to shift all resources to the production of these crops. This action will lead to scarcity of other crops and increase in their prices. Thus, the situation needs to be arrested through planning.
6. Planning also enables the economy to cope with problems of uncertainty in agricultural production consequent upon occurrence of natural hazards such as floods, drought, pest attack etc. Management of these risks necessitates effective agricultural development planning.

3.3 The Necessary Steps

The following steps are taken in planning agricultural development sector based on the sector's problems.

1. Identification of the social economic and institutional needs of the agricultural sector based on the sector's problems.
2. Formulation of realistic agricultural development policy objectives.
3. Design of strategies by which policy objectives may be achieved.
4. Estimation of the available agricultural resources with the performance of the agricultural sub-sectors' crop, livestock, fisheries, forest and wildlife etc.
5. Projecting the expected production and identifying the demand supply gaps.
6. Setting of achievable targets based on the above information.
7. Translating these into programmes of actions and projects to be executed.
8. The projects are monitored and evaluated in accordance with the set targets and the overall policy objectives.

3.4 Agricultural Development Plan

Agricultural development plan is the immediate output of agricultural development planning process. It is therefore and arrangement for agricultural development worked out or designed in advance such that the stated agricultural development policies can be achieved. It embodies the whole information, activities and the roles and responsibilities of the various tiers of government and private sector for achieving the policies. The information includes, identified problems, constraints, available resources and facilities, present situation of the sector, policy objectives, and policy instruments institutional arrangements for implementation of the policies, programmes, and projects and estimated monetary allocation for the execution of the subsectoral projects. The National Development Plan which used to be of 5 years duration now referred to as National Rolling Plan (2 year plan period) is in booklet form published by the planning office of the Federal Ministry of Budget and Planning.

SELF-ASSESSMENT EXERCISE 1

i. List four importance of planning.
ii. What is agricultural development plan?

3.5 Problems of Planning Agricultural Development

Problems of planning agricultural development are:
1. Lack of definite and consistent agricultural development policy.
2. Inadequate agricultural development planners.
3. Inadequate administrative and managerial machinery for effective implementation of agricultural development plan.
4. Lack of adequate data for effective planning.
5. Inability of farmers to keep accurate farm records.
6. Reluctance by farmers to keep accurate farm records in releasing same
7. Institutional problems of land tenure system in the country.

3.6 Perspective Plan

It was mentioned in the preceding section that policy and plan have definite beginning and period and period within which the stated objectives must be achieved. This is one of the criteria utilized in monitoring and evaluating the performance of the sector.

Nevertheless government actions to influence economic activities often go beyond the plan period. Hence, a futuristic approach to development plan is adopted. A perspective plan is a futuristic plan used as a mechanism of policy discipline to achieve the following objectives.

1. To enable the government link the past present and future policies in order to facilitate orderly transition or ensure smooth continuity.
2. Identification and resolution of possible conflicts among agricultural I development policy objectives and between agricultural objective and those of the overall economy.
3. It enables the government modify programmes and projects and identify areas requiring new strategies approaches.

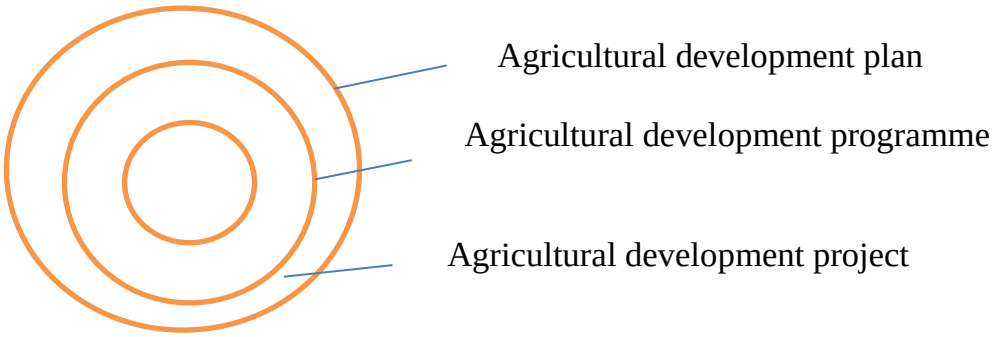
In perspective planning, the government projects beyond the prevailing economic conditions to ensure a more stable and healthy investment environment for economic and social development of the country. Perspective plans ensure that government goals in agricultural development are fulfilled in accordance with set objectives and operational modalities.

SELF-ASSESSMENT EXERCISE 2

What are the problems of planning agricultural development?

3.7 Relationship between Agricultural Development, Plan Programme and Project

The diagram below illustrates the relationship between plan, programme and project.



Agricultural development plan emanates from policy statement. .It is from plans that programmes are developed while projects evolve from programmes. Hence project is the smallest unit of the three representing a subset of programme which in turn is a subset of plan.

4.0 CONCLUSION

Agricultural development planning is a conscious effort to guide the development of the agricultural sector to accelerate economic development of the country.

5.0 SUMMARY

This unit has been able to identify the importance of planning in agricultural sector knowing fully the contributions of the agricultural to the economic development of the country. It has also examined the various reasons for planning in agricultural sector.

ANSWER TO SELF-ASSESSMENT EXERCISE 1

i. The four important reasons for planning include:

1. Agricultural plays vital role in economic development. 2. It ensures even development in the country. 3. The desired agricultural production could be easily achieved. 4. It enables the economy to cope with the problems of uncertainty in agricultural prediction.

Agricultural Development Plan

Agricultural Development Programmed

Agricultural Development Plan

6.0 TUTOR-MARKED ASSIGNMENT

1. Discuss the major problems militating against the planning of agricultural development

2. a. What is agricultural development planning? b. Enumerate five importance of planning agricultural development.

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UNIT 15 AGRICULTURAL DEVELOPMENT PROGRAMMES

CONTENTS

1.0 INTRODUCTION

In the last unit you will recollect that our discussion centered on agricultural programmes which is a subset of agricultural plan hence agricultural development programmes emanated from agricultural development plan. In this unit efforts will be made to examine some of the agricultural development programmes right from the 1970s up till the end of 1999. One thing that is sure is the activities that fit into the overall policy objectives of the agricultural sector. It therefore stems from development strategies and plans derived from the development policies. It is for you to note that all these programmes really contributed to the realization of agricultural objectives especially the food security particularly the attainment of self-sufficiency in all basic food stuff of those which consume significant share of the country's foreign exchange.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- understand the various strategies being undertaken to achieve the agricultural development programmes;
- examine the rapid improvement made within agricultural sector; and
- compare the usefulness of all these programmes.

3.0 MAIN CONTENT

3.1 Agricultural Development Programmes

Agricultural development programme is the totality of development activities undertaken by the government or other organizations in order to achieve the stated development objectives. The activities must fit into the overall policy objectives of the agricultural sector. It therefore stems from the development strategies and plans derived from the development policies. Some past and current agricultural development programmes include the following: 3.2 National Accelerated Food Production Programme (NAFPP)

The National Accelerated Food Production Programme started in 1872. The primary objectives were:

• To stimulate farmers to increase rapidly the production of grains (rice, maize, guinea corn, millet, wheat) and cassava to ensure abundance of food at low cost.

• To increase the farmer's income

• Acceleration of the rate of diffusion of new agricultural technology and service as a medium for testing and adopting agricultural results to on-farm situations.

The institutional arrangements for the implementation of the programme include the federal and state departments of agriculture selected research institutions (e.g. II LA) extension service experts, private farmers etc.

3.2.1 Activities of NAFPP

a. Establishment of agro-services centre designed to provide farm inputs within the reach of farmers and serve as a ready market and disseminations points for farmers agricultural products and information respectively. b. Intensify research activities and training of agricultural experts. c. Transfer of improved agricultural technology and services by providing effective link between research personnel and farmers through extension services.

The programme resulted in substantial increase in crop yield particularly during the third development plan period (1975 1980). However, it was not without problems.

i. There was lack of steady funding from the Federal government (main source of fund) and later the State government. Thus, local transport and travel claims of extension officers were not paid. It became very difficult to maintain vehicles and undertake seed multiplication for distribution to farmers.
ii. Non-payment of extension staff claims forced the staff to leave for other better paying jobs result in shortage of competent staff
iii. Late arrival of inputs and ineffective performance of the agro-service centers.
iv. Reluctance of peasants to adopt the recommended innovation packages
v. Lack of supervision by the responsible government authorities.

In spite of all these problems, the NAFPP spanned the various development plan periods. During the second National Rolling Plan 1991-1993, increased food crop production was promoted through the NAFPP. Under this dispensation, technical support was given by the Federal Department of Agriculture (FDA) to States to intensity activities in production of selected food crops in which they have comparative advantage in terms of ecological suitability.

Appropriate incentives were also given to both medium and large scale farmers. The rural environment was improved by providing essential infrastructural facilities such as feeder roads.

Presently, the NAFPP uses Agricultural Development Project (ADPs) as their implementation strategy. The ADPs assist small-scale farmers with farm inputs, extension services, to achieve the annual incremental food production targets. The DFRRI contributed to the programme through provision of necessary infrastructures such as dams etc. and expansion of irrigable and cultivable land.

3.3 Nigerian Agricultural and Co-operative Bank (NACB)

The bank was established in 1973 with the following objectives:

• Providing loan to agro-industrial firms and large scale agriculturists such as co-operative organizations, states and federal agencies, and private entrepreneur.
• Improving the income and welfare of farmers.
• Promoting rural development and
• Increasing the nations output of food and cash crops to meet the need of rapidly increasing population.

3.3.1 Activities of NACB

The activities include the following:

i. Financing all forms of agricultural projects which include arable crops, three crops, horticulture; livestock such as poultry, piggery, cattle, rabbitry, fishery; forestry and timber production
ii. It also provides credit for entrepreneurs engaged in agro-allied industry such as processing, storage of agricultural products.
iii. iii. Provide loan for marketing of agricultural products.

SELF-ASSESSMENT EXERCISE 1

i. Enumerate the objectives of NAFFP. ii. Enumerate the objectives of NACB.

3.3.2 Organization Structure of NACB

The headquarters of the bank is located in Kaduna with branches in all states of the federation including the Federal Capital Territory, Abuja. In order to bring agricultural credit to the door step of the farmers, the bank opened six offices in the local government areas of each state in the country in 1986.

3.3.3 The Operational Scheme of NACB

The different scheme includes:

1. The Direct Lending Scheme

Under this scheme, the bank relates directly with individual farmers and farms organizations without involving any intermediary or agency.

2. The On-Lending Scheme

Loan is disbursed to establish institutions such as co-operatives, state government agricultural credit organizations. Agricultural development projects etc. for on lending to small-scale farmers. This ensures easy recovery of loans.

3. Small Holder Direct Loan Scheme
This scheme was introduced in 1981, when it was realized that the small-scale producers were precluded from the programme. It was designed to serve millions of small-scale farmers who constitute over 90% of agricultural producers in Nigeria.
The security requirement such as certificate of occupancy of project land and other collateral applicable to the direct lending scheme are waived for the farmers. All that required of the farmer to quality for the loan is evidence of his/her active involvement in farming, a farm belonging to him/her or his/her family and two guarantors, to guarantee the loan.
4. Special Small-Holder Loan Scheme
This is a special on-lending scheme also designed to provide credit to small scale farmers as in the case of (c) above. The loan is disbursed to the farmers through the state ministries of agriculture and directly controlled by the offices of the State Governors, for on lending to the farmers in all Local Government Areas. The scheme has a maturity period of one year. The major difference between this and other on lending scheme is the non-disbursement of more loans until the previous on is defrayed.
5. Worker's Scheme
This scheme is specifically designed to provide credit to workers or retrenched workers who intended to undertake agricultural business. The only security required is a guarantor of good standing.
6. Marketing Loans
Marketing loans are provided to peasants to enable them purchase excess crops during harvesting seasons, process and store them so as to reduce wastage, thus stabilizing, prices, The maturity period of this loan is two years, The interest charged on loans is ' often lower than the prevailing commercial rates. The interest rates of the above various schemes differ slightly. Besides, the bank prefers kind disbursement to cash disbursement where possible, in order to discourage loan diversion. The NACB also undertakes consultancy services on behalf of their clients, on agricultural projects as subsidized rates. This includes preparations of feasibility studies, training on effective management of loans, linking of farmers with organizations capable of providing technical services etc. Details of conditions of borrowing may be obtained in any of the NACB branches in Nigeria.

3.4 Operation Feed the Nation (OFN)

Prior to the OFN Programme, the Nigerian Farmers concentrated on cash crop production because past agricultural development policies passed to us by the colonial government encouraged farmers to produce cash crops for exports. Thus, farmers merely cultivate enough food crops to meet their family needs with surplus for sale.
The Nigerian Civil war coupled with the unprecedented natural drought in the early 1970s and flood made agricultural production very difficult for the affected areas shortly .after the war. The rapidly increasing population, movement of able bodied people from rural to urban areas further increased the food crop supply and demand gap. The worsed situation of food crop then called for urgent attention of the government to commission the "Agricultural Seminar" to bring together all experts in

the field. On detailed examination and analysis of all aspects of agriculture in the country, the experts at the seminar concluded with the following warning signals.
a. That if the pace of food production existing then was maintained by 1975. Nigeria's food demand would exceed supply by five million metric tons.
b. That by 1985, this deficit would exceed sixteen million metric tons.

3.4.1 Strategy

In order to forestall this food disaster the Federal Government embarked upon massive importation of food items maize, guinea corn etc to reduce the competing demands of human and livestock for these crops. Massive importation of livestock products (meat, poultry) was also undertaken to avoid any serious protein deficiencies in the people's diet. These involved expenditure of substantial amount of the nation's foreign exchange. Realizing that the pride of a nation depends on her ability to feed her population and maintain a healthy economy and to reverse her dependency on oil (an exhaustible resource), the government launched the OFN programme in 1976 with the following objectives:

i. Mobilization of the nation's population to increase agricultural production with a view to achieve self-sufficiency, self-reliance and food security.
ii. Encouraging the urban working and middle class (which then relied on buying all their food items) to grow some of their own food.
iii. Restoration of the dignity of farming to peasant communities to curb the rural youth migration to urban areas in search of white and blue collar jobs.

3.4.2 Organization Structural

The organizational structure of the programme comprised to the National Council, National Committee, State Councils and Committees and the Local Government Committees.
That National Council consisted of Federal Commissioners with the chief of staff, supreme headquarters as chairman. The council formulated national policy and co-ordinates the activities of the state councils.
The national committee consisted of professionals whose responsibility was to advise the national council on the technical and administrative issues affecting the OFN programme and implement the council's decisions at the Federal level.

The state council consisted of state commissioners whose ministries were directly involved in the OFN programme, with the military governor as the chainman. The council was charged with the responsibility of implementing the national policies and initiating other policies that may facilitate the achievement of the programme objectives.
Local government committee, was made up of all professional, local dignitaries and farmers under the chairmanship of chiefs, etc. the committees' primary objective was to implement the decisions of the state councils, mobilize the general public, assist in provision of agricultural land and undertake all activities that would facilitate the achievement of the programme's objectives.

The programme created a general awareness of food problems, the vital role of agriculture in a nation's stability and mobilize people of all walks of life namely farmers, urban dwellers (white and blue collar workers), members of the armed forces, housewives, students, etc. to participate in agricultural production.

3.4.3 Activities of the Programme

• Creating a generals awareness of the food problems in the country and mobilizing the populace towards self-sufficiency in food production through various information outlets radio, television, etc.
• Provision of agricultural inputs to farmers and all those participating in the programme, improved seeds were imported for multiplication and distribution while massive importation of fertilizers was undertaken, local production was intensified the fertilizers were distributed to the farmers etc at highly subsidized prices. Participants were encouraged to use manure as substitute for inorganic fertilizers where the latter was not available.
• Control of pests and diseases was rigorously pursued.
• Storage facilities were provided to store surplus agricultural products.
• Day old chicks were raised and supplied to schools, institutions and interested individuals at subsidized prices
• Students of tertiary institutions were deployed to establish government and private farms to be directly involved in agricultural production during long vacations.
The programme lasted for a period of about three years and was replaced by Green Revolution Programme in 1980. Some of the problems encountered are mentioned below: Inefficient distribution of input, particularly fertilizers, inadequate extension services, insufficient planning, poor communication and transportation system.

SELF-ASSESSMENT EXERCISE 2
i. List the agricultural programmes we have discussed in this unit. ii. Enumerate the activities of one of them.

3.5 The Green Revolution Programme (GRP)

The Green Revolution Programme (GRP) was launched in 1980 shortly after the inception of civilian government, to replace the OFN programme and remove the deficiencies observed in the OFN.

3.5.1 Activities of the Programme

The activities of the programme are:
a. Establishment of new input procurement and distribution systems
b. Timely provision of inputs and appropriate technical advise to the farmers
c. Provision of input subsidies for attainment of crop sub-sector policies.
Apart from the usual propaganda which often characterizes the inception of political programmes. There were no visible additional benefits of the Green Revolution Programme over those of the QFN programme.

3.5.2 Problems

Problems of inadequate resources such as loans, fertilizers, farm implements were prevalent. The few available resources were allocated to people based on their political inclinations. Thus, there was misallocation of scarce resources. Inputs such as fertilizers and other agro chemicals find their way into hands of people with no interest in farming who resell them in the open markets.

SELF-ASSESSMENT EXERCISE 3
Enumerate the activities of the Green Revolution Programme.

4.0 CONCLUSION

All the various agricultural development programmes discussed above have immediately contribution to the agricultural development policy especially in the attainment of self-sufficiency in all basic food stuff particularly those which consume significant share of the country's foreign exchange. The various strategies used in achieving the agricultural policy objective to attain food security especially through the agricultural development programmes, especially in the attainment of self-sufficiency in all basic food stuff.

5.0 SUMMARY

This unit has been able to examine the various strategies used in achieving the agricultural policy objective to attain food security especially through the agricultural development programmes, especially in the attainment of self-sufficiency in all basic food stuff.

ANSWER TO SELF-ASSESSMENT EXERCISE 1
i. The objectives of the National Accelerated Food Production Programme include:
a. To stimulate farmers increase rapidly the production of grains and cassava b. To increase the farmers income c. Acceleration of the rate of diffusion of new agricultural technology
ii. The objectives of the Nigerian Agricultural and Co-operative Bank include:
a. Provision of loan to agro-industrial firms b. Improve the income and welfare of farmers c. Promoting rural development d. Increasing the nation's output of food and cash crops to meet the needs of rapidly increasing population.

ANSWER TO SELF-ASSESSMENT EXERCISE 2
The Agricultural Development Programmes include:
a. National Accelerated Food Production Programme b. Nigerian Agricultural Co-operative Bank c. Operation Feed the Nation d. Green Revolution Programme
ANSWER TO SELF-ASSESSMENT EXERCISE 3
The activities of the Green Revolution Programme include:
a. Establishment of new procurement and distribution system. b. Timely provision of inputs and appropriate technical advice to the farmers. c. Provision of input subsidies for attainment of crop sub-sector policies.

6.0 TUTOR-MARKED ASSIGNMENT

Examine the past agricultural development programmes in Nigeria, highlighting reasons for failure or success of such programmes.

7.0 REFERENCES/FURTHER READINGS

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MODULE 4

UNIT 16 AGRICULTURAL DEVELOPMENT PROGRAMES (ADP)
UNIT 17 INTEGRATED RURAL DEVELOPMENT
UNIT 18AGRICULTURAL MARKETING

UNIT 16 AGRICULTURAL DEVELOPMENT PROGRAMES (ADP)

CONTENTS

1.0 INTRODUCTION

You will recollect that unit 5 and unit 1 in module 2 have dealt with agricultural plans and programmes which are larger sets to agricultural projects hence project is the sma1lest unit of the three representing a subset of programme which in turn is a subset of plan. In this unit, l want you to focus your mind on agricultural development projects which is one of the major ways the government is using to boost agricultural production hence all efforts will be made to simplify the discussion for better understanding. As of today, agricultural projects are in all the 36 States including the Federal Capital Territory implementing one project or the other and contributing to the food production especially using the new improved technology. You will also discover that some of these projects are jointly sponsored by the World Bank. Federal and State governments. This has really made an effective performance of the projects in the various locations since the focus is on the peasant farmers.

2.0 OBJECTIVES

By the end of this unit, you should be able to:
• understand the various agricultural projects;
• identify the projects contribution to agricultural production; and
• examine the effects of their contribution on Nigerian populace.

3.0 MAIN CONTENT

3.1 The Focus of Agricultural Development Projects

Agricultural Development Projects (ADP) are derived from Agricultural Development Programmes. They are therefore the smallest units of economic activities undertaken to attain the overall policy objectives of the agricultural sector. They involve investing scare resources and creation of wealth sources capable of yielding future streams of income within the agricultural sector.

3.2 The Focus of Agricultural Development Projects

The focus of ADP is on the peasant farmers. All efforts are geared towards improving their standard of living. Projects have specified objectives of mobilizing small scale farmers to achieve aims of increased productivity, production, areas of expansion and increased income.

3.2.1 Operation

Agricultural Development Project started in 1975 and was partly financed by the World Bank. Presently almost all states in Nigeria including the Federal Capital Territory have ADPs. They are the implementing arms of the states' ministries of agriculture, though which the ministries reach the peasant farmers. They are semi-autonomous and jointly funded by the state, federal government and in some cases external sources such as the World Bank.

3.2.2 Objectives of ADPS

The cardinal objectives of the Agricultural Development Projects are:
1. To provide integrated rural development by providing Facilities for intensive extension services, modern/improved agricultural inputs/supplies and rural infrastructures particularly feeder roads.
2. To increase the productivity of the farmers and their income
3. To increase the overall standard of living of the farmers and the rural dwellers.

3.2.3 Activities of ADPS

The activities of Agricultural Development Projects include the following:
1. Provision of credit facilities directly and indirectly through financial institutions by serving as guarantors or linkage for the farmers.
2. They assist financial institutions in the recovery of loans granted to the farmers.
3. Provision of technical advice to the farmers and dissemination of innovations, modern techniques of farming of farmers.
4. Distribution of inputs of production
5. Assisting farmers in the procurement of framing implements such as tractors and tractor driven machineries.
6. Undertake research activities relating to the specific problems encountered by farmers.

3.2.4 Operational Divisions

The extent to which these activities are undertaken varies from state to state or project depending on availability of resources. The above listed objectives and activities are undertaken by the under listed operational divisions of the ADPs.
1. Technical Services Division (TSD)
2. Commercial Services Division (CSD)
3. Engineering Services Division (ESD)
4. Planning, Monitoring and Evaluation Division (PMED)
5. Manpower Development and Training Division (MDTD)
6. Finance, Management and Administrative Division (FMTD)

The technical services division of the state ADPs consists of the applied research and extension units. While applied research conduct research on farmers' problems and obtaining appropriate solutions, the extension unit transmits solutions or innovations to farmers in their locations. The diagram below represents the organizational structure of ADPs' Technical Services division of some states' ADPs in the country (e.g.) Ogun State Agricultural Development Project Abeokuta Oyo State Agricultural Development Shaki Osun State Agricultural Development Project Iwo Ekiti State Agricultural Development Project Ikole Ekiti Ondo State Agricultural Development Project Ikare Akoko Bauchi State Agricultural Development Project Bauchi Kwara State Agricultural Development Project Ilorin, Kogi State Agricultural Development Project Ayangba Sokoto State Agricultural Development Project Bodinga Kebbi State Agricultural Development Project Birnin Kebbi

SELF-ASSESSMENT EXERCISE 1
i. Give a clear definition of Agricultural Development Project. ii. Mention the Cardinal Objectives of the development Project. iii. Who are the focuses of the ADPs?

3.3 National Agricultural and Development Authority (NALDA)

Established by the Federal Government on the 7th May 1991 the National Agricultural Land Development Authority was to correct the identified deficiency in the country's agricultural development policies. The deficiency centres on the lack of sufficient attention to the quality and quantity of agricultural land and inefficient socio-agricultural land. Thus NALDA is to execute all national agricultural land development programmes towards attainment of food security in the country.

3.3.1 The Specific Objectives of NALDA

a. To promote and support optimum utilization of the nation's rural land resources.
b. Development of the country's agricultural land for enhanced agricultural production
c. Consolidate the present fragmented and scattered agricultural Land holding thereby reducing rural-urban income inequalities
d. Minimizing high labour cost associated with farming presently
e. Provision of gainful employment opportunities and stable income for the rural dwellers
f. Mobilizing public support towards the achievement of the goals of national food security.
g. Provision of incentives for the programme participants for the establishment of economic size village settlements capable of supporting basic facilities and agricultural activities.

3.3.2 Activities of NALDA

Activities of NALDA include the following:
1. Development of contiguous farmlands in the states of the federation.
2. Placement of farmer's participants on farm lands such that farmers do not need to travel more than 3-5 kilometers to get to his/her farm.
3. Conduct training/workshops for farm settlers on various themes such as management of agricultural land resources etc.

4. Subsidizes land development and management by the settlers.
5. Provision of integrated extension services to programme participants.
Thus, the programme participants are encouraged to increase their productivity. In addition, the processing and marketing of produce are supervised while the participant enjoy 15-20 years loan recovery period.

3.3.3 Development Programmes

Some specific sub-sectoral agricultural development programmes are:
1. Farm Input Production Programme: The objectives of this programme is intensification of input production, procurement and effective distribution to farmers
2. Infra structural Development Programme: The objective of intensifying production of essential raw materials for domestic industries and export.
3. Industrial Food Production Programme: It has the objective of intensifying production of essential raw materials for domestic industries and export.

SELF-ASSESSMENT EXERCISE 2
Enumerate the activities of NALDA.

3.4 The Role of Co-operatives in Agricultural Development Programme/Projects

The specific role of co-operatives in ADPs includes:
1. Co-operatives mobilize farmers into collective units in readiness for the agricultural development programmes/projects' activities geared towards enhancing farmer's productivity overall production and increased income.
2. Co-operatives build the capacity of participants to have effective working relationship in associations that are free and democratic for the achievement of the community, individual security and desired development.
3. Co-operatives arc used as conduit between the rural small scale farmers and the agricultural development programmes/projects.
4. Co-operatives facilitate the transfer of useful agricultural information and modern technology to farmers. Using cooperatives is less costly and most convenient compared with individual fanners.
5. Distribution of agricultural inputs to small scale farmers is most effective through the use of co-operatives.
6. The group action to co-operative societies ensures rapid adoption of innovation by farmers.
7. Co-operatives participation in the small holders on lending scheme ensures easy and quick access to peasants to loans, effective loan management and recovery.
8. Co-operatives assist in organizing small scale farmers to cope with the expected increase in agricultural output consequent upon the projects' effects. They facilitate storage, processing and marketing of products.
9. Co-operatives facili1ates training of farmers participating in the programmes/projects are developed management capacities.
10. Co-operatives encourage thriftiness among members. From capital mobilized therefore, loans are disbursed to members. This enables farmers to surmount the .problems of lack of capital which often hampers their rate of adoption of innovations.

11. Co-operatives ensure sustainability of the activities of the agricultural development projects and facilitate attainments of the development objectives.

4.0 CONCLUSION

The agricultural development projects have contributed immensely to the food production in this country and it has really improved the standard of living of the peasant farmers who are the focus of the project.

5.0 SUMMARY

The various agricultural development projects are designed purposely to boost food production in agriculture and purposely to improve the standard living conditions of these peasant farmers who are their targets. The projects have indirectly contributed to the socio-economic development of the country.

ANSWER TO SELF-ASSESSMENT EXERCISE 1

i. Agricultural Development Projects are derived from agricultural development programmes. They are therefore the smallest units of economic activities undertaken to attain the overall policy objectives of the agricultural sector. They involve investing scarce resources and creation of wealth resources capable of yielding future streams of income within the agricultural sector.

ii. The Cardinal objectives of Agricultural Development Projects include:

- Promotion of integrated rural development by providing facilities for intensive extension services, modern/improved agricultural inputs/suppliers and rural infrastructures particularly feeder roads. - To increase the productivity of the farmers and their income. - To increase the overall standard of living of the farmers and the rural dwellers.

iii. The focus of the Agricultural Development Projects are the peasants farmers.

ANSWER TO SELF-ASSESSMENT EXERCISE 2

The activities of National Agricultural Land Development Authority (NALDA) include:

a. Development of contiguous farmlands in the states of the federal. b. Placements of farmers participants on farm lands such that farmers do not need to travel more than 3 to 5 kilometers to get to his or her farms. c. Conduct training/workshops for farm settlers on various themes such as management of agricultural land resources. d. Subsidize land development and management of the settlers. e. Provision of integrated extension services to programme participants.

6.0 TUTOR-MARKED ASSIGNMENT

1. What do you understand by Agricultural Development Project (ADP). Discuss the cardinal objectives and activities of a named agricultural development project. 2. Differentiate between Agricultural Development Policy (ADP) programme and project. How are these three ADPs linked together?

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UNIT 17 INTEGRATED RURAL DEVELOPMENT

CONTENTS

7.0 References/Further Readings

1.0 INTRODUCTION

This unit ends the series of agricultural development policy, plan, programme and projects. It gives an outcome of all the various activities of our past discussions as to the development of the rural areas. From our past discussions, you will note that this is just the total activities of the policy, plan, programme and projects which give a comprehensive impact on the socio-economic life of the rural dwellers. You will remember that the fact that a single sector within a community is developed does not necessarily imply the development of the rural area concerned, this is because a community consists of several sectors such as agriculture, health, education, industry just to mention a few. It also involves a number of co-ordinated, interdependent multi-sectorial activities taking place within a defined area which covers all the sectors of the community.

2.0 OBJECTIVES

At the end of this unit, you should be able to:
• identify the key point of rural development;
• understand the basic needs of the rural dwellers; and
• explain the effects on rural dwellers.

3.0 MAIN CONTENT

3.1 Integrated Rural Development

The fact that a single sector within a community is developed does not necessarily imply the development of the rural area concerned. This is because a community consists of several sectors such as agriculture, health, education etc. therefore, the development of the agricultural sectors does not imply the development of the rural area involved in the development of all the sectors within the community. It Involves a number coordinated, interdependent multi-sectoral activities taking place within a defined area which covers all the sectors of the community. You should please note that efforts of different agencies concerned with the development of rural areas are integrated, in such a way as to provide the basic need of the rural dwellers. Integrated rural development often adopts perspective planning approach in its programme because most of the programmes are of long gestation period and are implemented in phases. Kindly note that the main objectives of Integrated Rural Development (IRD) is to improve the general standard of living of the rural population.

3.1.1 Implementation

During the implementation of the programme, targets are set towards the achievement of the overall objectives. Through the IRD Programme, the rural dwellers are provided with good access roads (feeder roads), good water supply for people, livestock and crops, electricity, basic health care and appropriate educational facilities for the rural area to further stabilize the rural population. It aims to arrest the rural urban migration. In order to have a sustained agricultural growth the farmers should not only be assured of income higher than the prevailing minimum wage in the cities, but also of comfortable living condition in the rural areas.

SELF-ASSESSMENT EXERCISE 1
i. Give a clear definition of integrated rural development. ii. What is the aim of the integrated rural development?

3.1.2 Role of Co-operatives

Given the integrated nature of development the roles of co-operatives cannot be over-emphasized. These roles arc similar to those mentioned under agricultural development projects. However the following additions are relevant to the integrated rural development programmes:
1. Co-operatives provide a better forum through which development agencies can channel inputs required for implementation of the integrated rural development programme to the rural dwellers. Family Planning material, storage and processing equipment etc. are distributed through co-operatives.
2. In situations where some of the rural dwellers are indifferent to the programme due to lack of misinformation, co-operatives may combine the role of instructing and stimulating members of the community to participate in the programme.
3. Agricultural co-operatives as rural institutions are part of the overall plan to raise the level of social and economic consciousness of the rural dwellers. Thus they are an integral part of integrated rural development scheme

3.2 Subject Matter Specialist

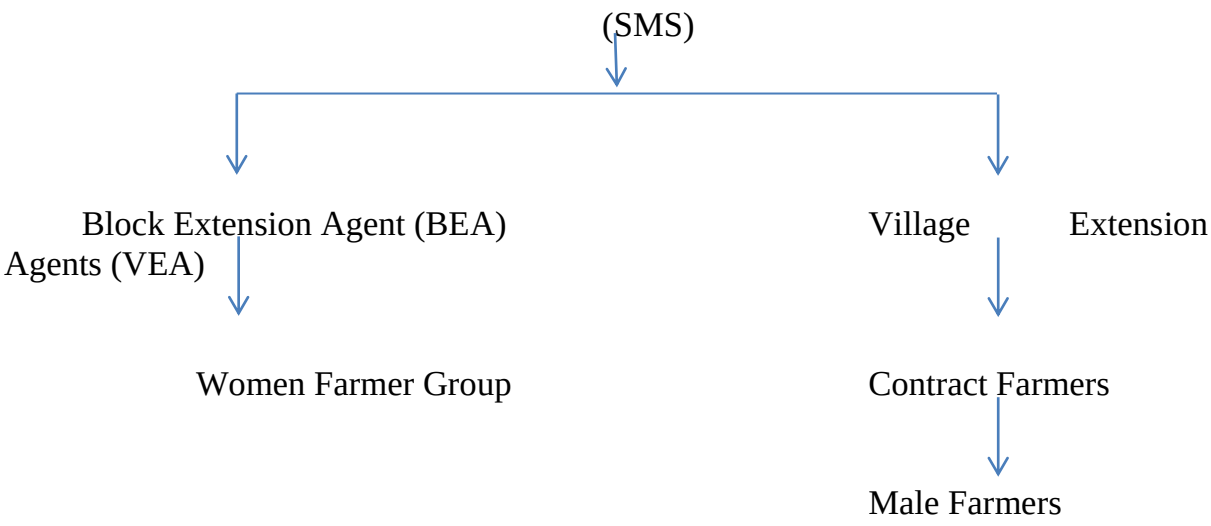

Fig. 17.1: ADP Extension Services Channel
The Subject Matter Specialist (SMS) trains the Village Extension Agents (VEA) who are charged with the responsibility of disseminating new technology and innovation to the farmers on their farms. They often make use of contact farmers. Contact Farmers are farmers who are ready to accept, adopt innovations and disseminate same to other farmers. They must be residents of the particular village and in possession of a reasonable size of farm land holding bush as 2-3 acres.
The Block Extension Agents (BEA) is women extension agents who are mainly responsible for disseminating innovation to women group in all agricultural cells. A

cell is a geographical location with 80 contact farmers and about two hundred and forty (240) farmers. Thus a cell may comprise of more than one village depending on the population of farmers in the village. Any location where there are up to 10 contract farmers' constitute a sub-cell, and an operational unit of VEA activities beginning with the Small Plot Adopting Techniques (SPAT). Small Plot (S.M.S), Block Extension Agent (BEA), Village Extension Agents (VEA)
Women Farmer Group Contract Farmers.
Adopting Techniques involve the use of a 10m area of land for growing improved seedling to be introduced to the farmers with all the accompanying farming practices such as fertilizer application, timely weeding etc. and pegged round, with the farmers' adjacent plot of the same size of comparison

SELF-ASSESSMENT EXERCISE 2
What are the roles of co-operatives in rural development?

3.3 Strategies of Rural Development

Rural Development Strategies usually take the form of programmes which implement projects in a specific rural area. Such programmes form the basis of most government and non-government efforts to assist rural areas and they include both agricultural and non-agricultural projects. It should be emphasized that the problems a farmer faces are complex and not all of them are physical or tangible. With this in mind, the kinds of strategies which rural development programme can adopt can be considered. The first point to make is that there is not on strategy which is relevant to the problems and strategy must be adapted accordingly. There are three broad rural development strategies to be considered.

3.3.1 Technological

Here, the emphasis is upon technological transformation or different aspects of the rural society e.g. improved cropping practice or better water supply, by the provision of the inputs and skill required to bring about the transformation.

3.3.2 Reformist

In this strategy, importance is also attached to technological change, but with a corresponding effort to provide the means by which the farmer can plan a bigger part in rural development, for example, through organizational development, or participation in rural development programme.

3.3.3 Structural

This strategy seeks to transform the economic, social and political relationships which exist in rural areas in such a way that those who were previously disadvantaged by such relationships find their position improved. Often this strategy is carried out by means of an agrarian reform programme.

3.4 Suggested Principles

The following principles are suggested to implement rural development programmes.

a. Access: Try to ensure that the programme and its benefits can reach those in need, and beware of the consequences if some farmers have access to the programme while others do not.
b. Independence: Ensure a programme which helps and supports the farmer but which does not make him or his livelihood dependent upon programme.
c. Sustainability: Ensure that the programme's plans and solutions are relevant to the local economics, social and administrative situation. Short-time solutions may yield quick results, but long-term programme that are suitable to the local government have greater success.
d. Going Forward: Technological aspects of rural development programmes should help the farmers to take the next step in his development and not demand that he take a huge technological leap. It is better to secure a modest advance which can be sustained than suggest a substantial advance which is beyond the ability of most farmers.
e. Participation: Always try to consult the local people, seek out their ideas and involve them as much as possible in the programme.
f. Effectiveness: A programme should be based on the effective use of local resources and not necessarily on their most efficient use. While efficiency is important its requirements are often unrealistic.

SELF-ASSESSMENT EXERCISE 3
Enumerate the suggested principles of rural development programmes.

4.0 CONCLUSION
This unit has emphasized that integrated rural development involves the development of all sectors within the community. It involves a number of coordinated, interdependent multi-sectorial activities taking place within a defined area which covers all the sectors of the community.

5.0 SUMMARY
The unit has identified the main objective as the improvement of the general standard of living of the rural population especially the farmers which directly arrest the rural urban migration.

ANSWER TO SELF-ASSESSMENT EXERCISE 1
i Integrated rural development is the total development of all the sectors within community. It involves a number of coordinated, interdependent multi-sectorial activities taking place within a defined area which covers all the sectors of the community. ii. The aim of this is to improve the general standard of living of the rural population purposely to arrest the rural-urban community.

ANSWER TO SELF-ASSESSMENT EXERCISE 2
The roles of co-operatives in rural development include:
1. Provision of a better forum through which development agencies can channel inputs required for implementation of the integrated rural development programme to the dwellers. 2. Provision of information to the rural dwellers. 3. Combines the role of

instructing and stimulating members of the community participate in the programme 4. Co-operatives are an integral part of integrated rural development scheme.

ANSWER TO SELF-ASSESSMENT EXERCISE 3

The suggested principles of rural development programmes include:

a. Access: Devise a programme which helps and supports the farmer's. b. Independence: Device a programme which helps and supports the farmers. c. Sustainability: Ensure that the programmes plans and solutions are relevant to local economic, social and administrative solution. d. Going Forward: It should help the farmer to take the next step of development. e. Participation: Always try to consult the local people, seek out their ideas and involve them as much as possible in the programme.

f. Effectiveness: The programme should be based on the effectiveness use of the resources while efficiency and effectiveness is very important and should be considered.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the term integrated rural development with reference to the aims and objectives. 2. Enumerate the roles of co-operative in rural development.

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UNIT 18 AGRICULTURAL MARKETING

CONTENTS

1.0 INTRODUCTION

This is the second Unit and we are focusing on marketing of agricultural products. From your experience in life, you will recall that marketing involves more than buying and selling hence this unit is going to examine the details of activities right from the farmer's gate to the consumer's yard.

You will remember from the rudimentary knowledge that marketing is the performance of all business activities involved in the flow of goods and services from the point of production to the ultimate consumer. With the above explanation it entails the exchange of ownership of goods and services for money or money worth. A man who grows an onion or vegetables along river Niger axis in Lokoja Kogi State and takes to the market at Lokoja for sale is involved in marketing. Hence, agricultural marketing is the performance of all business activities involved in the movement of agricultural commodities from the point of production to the consumer's yard.

2.0 OBJECTIVES

By the end of this Unit, you must be able to:

• identify the key point of agricultural marketing;
• understanding the salient features of marketing; and
• examine marketing contributions.

3.0 MAIN CONTENT

3.1 Definition

Agricultural marketing is the performance of all business activities involved in the movement of agricultural commodities from the point of production to the consumers. It is sometimes difficult to state precisely when marketing begins. This is because anyone embarking on agricultural production would have identified possible buyers, mapped put strategies for disposal of the output and projects gains accruable to him/her before actual production processes commence. However, real marketing is said to be with arrangement for transfer of ownership of the goods and exchange of the same for money or money worth.

3.2 The Need for Agricultural Marketing

The need for agricultural marketing arises with production of excess, over and above consumption. This relates to the concept of marketable surplus which is defined as the proportion of the total output that is available for sale after satisfying the producer consumption, seeds for next season are planting, gift and other needs. There is however, an exception to this conception, as certain agricultural commodities are produced for meeting specific population's needs. Thus, "Gbanja" kola is widely grown in south western Nigeria, transported and sold to the people of the northern parts of the country who relish the commodity. Marketing bridges the gap between production and consumption. It brings together impersonal forces of supply and demand irrespective of where the market is located. Therefore, one is involved in marketing whether one grow yam, sells the tubers or processes same to yam flour (elubo) and sells in the village or town markets in the southern parts of the country or received supplies of grains, onions, or goats from the north.

3.3 Market and Market Place

Market is the interaction of impersonal forces of supply and demand irrespective of the physical location of the sellers or buyers. It involves all possible buyers of the commodity. It differs from a market place, which refers to a specific physical location where the supplier (seller) and the buyer meet, for the exchange of the commodity for money or money worth.

Hence, a market may be a market place or not. The essential factor is the contact between seller and the buyer, which could be effected by any means communication such a personal visit, letter, telegram, telephone, fax or electronic mail. In this regard, a market may be local, regional, national or international in scope.

SELF-ASSESSMENT EXERCISE 1

i. Define Agricultural Marketing.
ii. What is the need for Agricultural Marketing? iii. Explain the term market and market place.

3.4 Features of Marketing

The salient features of marketing include prices, marketing functions and marketing institutions.

3.4.1 Prices

Prices are very important because they determine the farmer's income and its stability. Besides, they determine the profit of the trader. Agrobased industrialists and the final consumer's real income i.e. the quantity of goods and services they are able to buy at a particular level of income. Prices are also used by producers to allocate resources. The rise in the price of and demand for cocoa in the 1980s in the world market led to shift of factors of production such a labour, land etc. from other .products to the production of cocoa in the cocoa producing areas of Nigeria.

3.4.2 Marketing Functions

Amongst the marketing functions features listed above, marketing functions are the main specialized activities performed within the marketing system. The functions are grouped into three different categories as follows:

3.4.3 Exchange Function

This function involves processes that assign monetary value to and transfer of ownership the commodity. It affects the exchange of goods by the seller the money paid by the buyer. The function includes selling and buying. Selling is the act of giving commodity to someone in exchange for money. However, in marketing system, selling goes beyond this simple act. It involves them search for all possible buyers of the goods or services, assigning value to the commodity, promotional activities (viz advertising, occasional reduction of prices etc,) and the search for the best el of distribution of the products.

Buying includes activities such as the search for the sources of supply and the act of giving out money in exchange for the goods purchased. This function enables the seller and consumer to have a fair price and cost for good sold and bought respectively

3.4.4 Physical Functions

This function involves physical handling of the commodity. The function affects the goods in terms of their forms, movements from one place to another and the extension of the product's life span from one period to another. The specific functions are:

• Processing • Transportation • Preservation and • Storage

1. Processing is the marketing function which ensures the availability of a particular agricultural product in the forms desired by the consumers, it provides the form utility to the final consumer of the product. Thus, cassava is processed into various forms such as gari, chips, Tapioca, cowpea into bean cake (moimoi, ekuru, akara) and soya beans into soya milk, paste etc.

2. Transportation is a physical function which ensures that goods are available as at when desired. It therefore creates time utility for the consumer. It involves the movement of produce form one place to another ensuring availability of produce at location of needs by the consumer.

3. Storage is a marketing function which ensures that goods are available as at when (desired. It therefore creates time utility for the consumer. In view of the time factor, involved in storage there is need to preserve the produce such that there is little or no, change in the desired quality of the good. Hence, preservation precedes storage.
However, the extent of the preservation is determined by the nature of the commodity to be stored. It is important to note that the performance of these functions varies from one commodity to another within the marketing system. Some commodities are rarely processed. For instance yam is sold in tuber forms while maize is sometimes sold in maize cobs to consumers, after harvesting. Cassava is processed into garri, cassava flour or fufu (paste), transported outside the point of production to market places for sale, fresh tomatoes, and pepper are transported in baskets to market places for sale. The extent of marketing functions performed on a particular commodity therefore determines the marketing cost, marketing margin, the unit cost of good and the profit.

SELF-ASSESSMENT EXERCISE 2
i. List the salient features of marketing. ii. What is exchange function? iii. Enumerate the physical function.

3.4.5 Facilitating Function

The facilitating functions are those that make possible the smooth performance of the exchange and physical functions. These activities are not directly involved in either the exchange of title of the physical handling of products. However, without them the modern marketing system would not be possible. They might aptly be called the grease that makes the wheels of the marketing.
Facilitating is the provision of credit facilities for marketing the commodity. This need arises in view of the fact that fund is tied up in the commodities produced for marketing. There is time lag between production and marketing of the products.
Standardization is the process of credit establishing and maintaining a uniform measurement of a commodity in terms of quality. For standardization to be effective, it needs to be proceeded by grading which is predetermined as per agreed criteria within the marketing system such as type, size, shape, flavour, amount of foreign substances (rodent hair, insect ‘remnants, stones etc). This function deters adulteration of goods, and ensures good measures and quality.
Provision of marketing information involves gathering, interpreting and dissemination of all the data which tend to facilitate the bylines activities of selling and buying and such as supply and demand, prices, availability of credit facilities etc.
Risk bearing is the assumption of possible losses incurred due to the occurrence of several risks suffered while marketing. The losses include reduction in the market value of goods consequent upon loss of freshness or shrinkage of the good, loss in market value, fire outbreak, and theft, accidental fluctuation in prices occasioned by upsurge of supply, insect attack and unfavorable climatic conditions (cold and heat) which makes the produce prone to fungal attack. The effect of these varies and includes:

i. Reduction of the desirability of the produce by the consumers and

ii. Loss of physical products. These changes observed in the goods reduce prices offered for the commodities and results in reduction of the farmer's or sellers, income.

Advertising involves activities that deal with publicizing of goods and services for sale or increase sales. It therefore keeps the product constantly in the minds of the consumers thus creates effective demand.

The market intelligence function is the job of collecting, interpreting, and disseminating large variety of data necessary to the smooth operation of the marketing processes. Efficient marketing cannot operate in an information vacuum. An effective pricing mechanism is dependent on well-informed buyers and sellers. Successful decisions on much to pay for commodities or what kind of pricing policy to use in their sales requires that a large amount of market knowledge be assembled for study. Adequate storage programs, an efficient transportation services, and an adequate standardization all depend to a considerable extent on good information.

Much of the market research that is carried to evaluate the possible alternative marketing channels that may be used, the different ways of performing other functions, and the market potentialities for new products may be performed by those who specialize in its performance. On the other hand, everyone in the marketing structure who buys and sells products evaluates available market data and therefore performs this function to some degree.

SELF-ASSESSMENT EXERCISE 3

Enumerate the facilitating functions of marketing

4.0 CONCLUSION

This Unit has fully explained that marketing involves more than buying and selling and it is the-inter-personal forces of demand and supply irrespective of where the market is located. Marketing bridges the gap between productions and consumption.

5.0 SUMMARY

Agricultural marketing is the performance of all business activities involved in the movement of agricultural commodities from the point of production to the consumers yard. The salient features of marketing include prices marketing functions and marketing institutions.

ANSWER TO SELF-ASSESSMENT EXERCISE 1

i Agricultural marketing is the performance of all business activities involved in the movement of agricultural commodities from the point production to consumers yard.

ii. The need for agricultural marketing arises with production of excess over and above consumption. This relates to the concept of marketable surplus defined as the proportion of the total output that is available for sale after satisfying the need of producer’s consumption, seeds for next seasons planting, gift and other needs.

iii. Marketing is the interaction of the impersonal forces of supply and demand irrespective of the physical location of the sellers or buyer. Market place refers to a specific physical location where the supplier (seller) and the buyer meet of the exchange of the commodity for money with essential factor, is the contact between seller an: buyer which could even be affected by any means of communication.

ANSWER TO SELF-ASSESSMENT EXERCISE 2
This salient feature of the marketing includes:
1. Price 2. Marketing Functions 3. Marketing Institutions
1. Exchange functions are those activities involves in the transfer of title to goods. They represent the point at which the study of price determination enters into the study of marketing. These functions are never performed in our economy without a Judgment of value usually expressed at least partially as a price, being place on the goods. Both the buying and the selling functions have not their primary objectives the negotiation of favourable terms of exchange.
2. The physical functions are those activities that involve handling, movement and physical change of the actual commodity itself. They are involved in solving the problems of when, what and where in marketing.
3. The facilities functions are those that make possible the smooth performance of the exchange and physical functions. These activities are not directly involved in either the exchange of title or the physical handling of products. However without them the modem marketing system would not be possible. They might aptly be called the grease that lubricants the wheels of marketing efficiency. The functions include:
a. Standardization b. Financing c. Risk Bearing d. Market intelligence

6.0 TUTOR-MARKED ASSIGMENT

1. List the salient features of marketing.
2. Discuss the characteristic of agricultural marketing in Nigeria under the following headings. a. Marketing place. b. Scale of Operation.

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UNIT 19 CHARACTERISTICS OF AGRICULTURAL MARKETING IN NIGERIA

CONTENTS

1.0 INTRODUCTION

In the last unit, you will remember that we dealt with the genesis and evolution of marketing. We did emphasize that marketing involves more than buying and selling. We also examined the features of marketing through marketing functions. This unit now focuses on the local marketing system coupled with the characteristics of marketing in Nigeria. You should recollect that the farmer's and the consumer's view points on an ideal marketing system differ. While the farmers expect maximum prices possible to be paid for produce sold especially during the harvest time, the consumers' expectation is the availability of produce at minimum price possible. Thus the marketing functions reconcile these two divergent ideals by creating consumers utilizes within the marketing system. This unit will explain clearly all these view for a better understanding.

2.0 OBJECTIVES

At the end of this unit, you should be able:

- identify the key points of ideal marketing system; and
- understand the characteristics of agricultural marketing.

3.0 MAIN CONTENT

3.1 Ideal Marketing System

Within the marketing system, the marketing functions discussed in the last unit are performed with varying degree of efficiencies. Everyone who handles agricultural products performs at least one of these functions either consciously or unconsciously, prior to the consumption of the products. A farmer who decides to sell the unharvested cassava he/she cultivated to women who process it to garri only performs the function of selling. The woman consumer who uproots, transports, process and sells the final product performs:

i. Exchange functions of buying and selling

ii. Facilitating function of risk-bearing

The extent of the marketing function that goes into the produce and the number of hands the produce passes through before it gets to the ultimate consumers determines the price of the produce and the proportion of this value that gets to the producer. This is of relevance to the concept of ideal marketing system. Generally, an ideal marketing system is one which allows a reasonable proportion of what the ultimate consumer pays for the goods to reach the producer (farmer). Some farmers perform most of these of what the functions to enable them reduce the marketing chain thus obtaining a significant share of what the consumer offers for his/her produce.

3.1.1 The Farmer's View Point

The farmer's and the consumers view points on an ideal marketing system, differ. Farmers consider a marketing system an ideal one when:

i. Maximum prices possible are paid for produce sold
ii. Producers are purchased at harvest time at maximum prices possible
iii. Produces are paid for in cash or in advance if possible
iv. Produces are collected from the site to production and
v. All produces are acceptable to the buyer irrespective of quality such that he/she does not lose his/her produces

3.1.2 Consumer's View Point

However, the view points of the consumer about an ideal marketing system are:
i. Availability of produce at minimum price possible
ii. Availability of produce when needed at all times
iii. Produce to be purchased on generous credit terms
iv. Availability of produce at close range i.e., proximity to home or place of consumption; and v. Produce to be only of high quality
Thus, the marketing functions reconcile these two divergent ideals by creating consumers' utilities within the marketing system.

SELF-ASSESSMENT EXERCISE 1

i. Explain the term ideal marketing system. ii. Explain the farmers' and consumers' view points on ideal marketing system.

3.2Characteristics of Agricultural Marketing in Nigeria

The following constitutes the main features of agricultural marketing in Nigeria.

3.2.1 The Market Place

The market place as mentioned in the earlier section is a specific location where sellers and buyers meet regularly to perform the exchange functions of marketing. The market place occupies an important aspect of the marketing system.
Also, it provides a forum for meeting friends; acquaintances, to initiate and establish social, political and religious relationships, disseminate information and undertake adult educational programmes. Information on family planning, health and nutrition etc. is disseminated to the traders especially women participants by the appropriate extension personnel.

Except in some market (textile materials etc), agricultural commodities constitute over two thirds of items traded in, in most markets in Nigeria. However, some markets were specifically established for food. These are called farmers' markets. They hold specific market days, Ojo markets (Ibadan) holds every nine days.
An important feature of these market places is the general lack of adequate market infrastructures such as storage, warehouse facilities, counter or selves for display of commodities, lock up stalls etc. Other basic amenities which are usually lacking or inadequate include lavatories, parking areas and refuse disposal facilities. Hence, in many market places the produce are displayed in basins, bowls or trays on the ground, such that the efficient flow of goods and services is hampered. Furthermore, the lack of or inadequate refuse disposal and lavatory facilities tend to endanger the health of the attendants.

SELF-ASSESSMENT EXERCISE 2
Differentiate between market and market place.

3.2.2 The Marketing Function

The marketing functions performed in marketing of agricultural products in Nigeria ranges from the exchange function to the facilitating functions, with varying degrees of efficiencies. Marketing efficiency relates to the movement of produce from the producers to the consumers at the lowest cost possible that is consistent with the services desired by the consumers. Marketing efficiency focuses on the cost of functions performed within the marketing system in relation to the consumer's satisfaction. Thus, reducing this cost means increasing marketing efficiency. However, increase in total cost of marketing does not necessarily imply inefficient marketing. There are two types of marketing efficiencies namely Technical and Economic efficiencies. Technical efficiency relates to procedure, physical facilities and scale of operation i.e., capacity utilization. It measures the effectiveness with which the physical functions of marketing are performed. These activities include processing, storing, transporting etc. thus, the use of the best available technology for processing, storing and transporting which tend to meet consumers' satisfaction regardless of cost leads to increase in technical efficiency, terms with the minimum available resources. Thus, economic efficiency is achieved when the marketing functions are performed using the most profitable techniques, and considering the prevailing market prices and margins, degree of competition and responsiveness of marketing system to consumers' desires. From the above the main objective of marketing efficiency is to provide commodities to final consumers in the desired form, at the required time and place, at the lowest feasible marketing costs in the interest of the produces i.e. Farmers.

SELF-ASSESSMENT EXERCISE 3
i. Explain the term Marketing Efficiency. ii. Explain the term Economic Efficiency.

3.2.3 Marketing Operations

A greater proportion of traders in staple food marketing in Nigeria operate on small scale. They buy and sell their goods in small quantities. This is a reflection of the

small scale production level at which the farmers operate which leads to the small marketable surplus. Another factor responsible for traders selling in small lots is the low levels of consumers' income which has been further drastically reduced by the high level of inflation attending the continuous devaluation of the Naira since the inception of Structural Adjustment Programme in 1986.

The situation is becoming more critical with the further reduction of household purchasing power due to the skyrocketing prices of food items and stagnant workers' wages in recent times. For instance a unit measure of bean (1 congo) which sold for between N20 AND N30 in 1995 has risen to between N100 N120 by the following year. This represents a staggering increasing of between 300 and 400% depending on the variety in just one year. Many households are now forced to buy in small quantities in attempt to spread the available money on as many food items as could be accommodated.

Again there is little specialization by function amongst middlemen as traders themselves move from farm to farm in search of goods to buy in addition to performance of other functions of storage, processing transportation, financing and risk-bearing before selling. Selling and buying are characterized by price haggling due to non-usage of fixed prices r and price tags as obtained in supermarkets or departmental stores.

3.2.4 The Performance

The performance of the physical function of storage, processing and transportation is impeded due to lack of or inadequate marketing facilities. Consequently, post-harvest losses are high and usually about 30 to 33% of total production m the country. For example, goods are stored in jute bags open basins or tins and placed on either earthen or cemented floor, which makes them prone to excessive spoilage by pests and rodents. Commodities such as fresh tomatoes, vegetables and fruits which are highly perishable are also stored in baskets, placed on the ground in the market places due to lack of and non-use of cold storage facilities. In view of the nature of these products greater proportion of these is lost through spoilage. Likewise, cold storage for meat and fish are uncommon in the market places except in the case of wholesalers who operate cold rooms for selling fish to market women for retailing. The fresh fish trade is dominated by women in the market places. They often store these commodities in basins, stuffed with jute bags and cellophane bags to keep the fish from defrosting and spoilage.

However, the remaining stocks at the end of the day's sales are often preserved mainly by roasting. Food processing facilities are still inadequate. Hence, food processing is done manually with ineffective traditional techniques. Marketing of livestock products particularly beef is dominated by men in most market places in Nigeria. The livestock products arc often displayed on tables with non-use of cold storage facilities. However, in recent times: few meat shops with adequate cold storage facilities exist in some of the big cities.

3.2.5 The Food Market Structure

The food market structure in Nigeria is made up of large number if middlemen and women especially at the retail level compared with other agricultural products such as

cocoa, rubber, timber etc. This is due to the relative ease of entry and exit, little starting capital outlay, small scale of operation, lack of alternative remunerative employment and the fact that little or no specialization skill is required. New entrants only need to understudy older ones as apprentices for a short period.
The market costs, prices and margins are relatively high for food items compared with other crops. Generally, the factors responsible for these include small scale of operation by operators, losses and wastage, ineffective temporal and spatial arbitrage and collusive pricing by the wholesalers and numerous product specific trade associations, such as rice sellers' associations, yam sellers' associations etc. Specifically, marketing margins and price structures are determined by the nature of the product function that goes into the products (transportation. storage. processing etc) and the demand and supply conditions.

SELF-ASSESSMENT EXERCISE 4
List the physical functions performed in Agricultural marketing.

4.0 CONCLUSION
An ideal marketing system is one which allows a reasonable proportion of what the ultimate consumer pays of the goods to reach the producer (farmer) while marketing functions reconcile both the farmers and the consumers view point by creating consumers utilities within the marketing system.

5.0 SUMMARY
The key point of ideal marketing is from both the farmers and the consumers viewpoints which are being reconciled by creating consumers utilities within the marketing system. The farmer's view point is that the maximum price possible is paid for produce sold while the consumer maintains that availability of produce at minimum price possible.

ANSWER TO SELF-ASSESSMENT EXERCISE 1
i. An ideal marketing system is one which allows a reasonable proportion of what the ultimate consumer pays for the goods to reach the producer (farmer) some fanners perform most of these functions to enable them reduce the marketing chain thus obtaining a significant share of what the consumer offers for his/her produce.
ii. The farmer's viewpoints are:
• Maximum prices possible are paid for produce sold. • Produce are purchased at harvest time at maximum prices possible. • Produces are paid for in cash or in advance if possible. • All produce are acceptable to the buyer irrespective of quality such that he/she does not lose his/her produce.
The consumer's views include:
i. Availability of produce at minimum price possible ii. Availability of produce when needed at all times iii. Produce to be purchased on generous credit terms, iv. Availability of produce at close range v Produce to be only of high quality

ANSWER TO SELF-ASSESSMENT EXERCISE 2
Market is the interaction of the impersonal forces of supply and demand irrespective of the physical location of the sellers and buyers. It involves all possible buyers of the

commodity. Market place refers to a specific physical location where the supplier (seller) and the buyer meet, for the exchange of the commodity for money or money worth.

ANSWER TO SELF-ASSESSMENT EXERCISE 3
Marketing efficiency relates to the movement 01- produce from the producers to the consumer at the lowest cost possible that is consistent with the services desired by the consumers. It focuses on the cost of functions performed within the marketing system in relation to the consumer's satisfaction. Thus reducing this cost means increasing marketing efficiency.
Economic efficiency is a subset of marketing efficiency and it is concerned with realization of maximum output in monetary terms with the minimum available resources. Thus, economic efficiency is achieved when the marketing functions are performed using the most profitable techniques and considering the prevailing market process and margins, degree of competition and responsiveness of marketing system to consumers desires.

ANSWER TO SELF-ASSESSMENT EXERCISE 4
The physical functions performed in marketing include:
a. Processing b. Transportation c. Preservation d. Storage

6.0 TUTOR-MARKED ASSIGNMENT

1. Differentiate between ideal marketing and marketing efficiency.
2. The marketing functions reconcile both the farmers and consumers divergent ideals by creating consumers utilities within the marketing system. Discuss

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UNIT 20 MARKETING INSTITUTIONS

CONTENTS

1.0 INTRODUCTION

In the last two units, you have been reading about agricultural marketing in Nigeria, this unit will take another step further with you in explaining marketing institutions which is from the institutional approach. This is the study of various agencies and business structures that perform the marketing processes. This institutional approach to marketing problems focuses attention on the "who". Marketing institutions are the wide variety business organizations that have developed to operate the marketing machinery and it considers the nature and character of the various middlemen and related agencies and also the arrangement and organization of the marketing machinery. .In this unit, the human element receives primary emphasis hence middlemen are those individual or business concerns who specialize in performing the various marketing functions involved in the purchase and sale of goods as they are moved from producers to consumers.

2.0 OBJECTIVES

By the end of this unit, you should be able to:
• identify the key actors of marketing institutions;
• understand the of these middlemen; and
• explain their various effects

3.0 MAIN CONTENT

3.1 The Institutional Approach

Another method of analysis is to study the various agencies and business structures that perform the marketing processes. Where the function approach attempts to answer the 'what' in the question of "who does what" the institutional approach to marketing problems focuses attention on the "who." Marketing institutions arc the wide variety of business organizations that have developed to operate the marketing machinery. In this approach the human element receives primary emphasis.

3.2 Middlemen of Marketing

Middlemen are those individuals or business concerns who specialize in performing the various marketing functions involved in the purchase and sale of goods as they are moved form producers to consumers. Our concern here is with the place in the marketing processes which the middlemen occupy. There is no limitation as to the way in which they have organized for doing business. They may operate as individual partnerships, or cooperative or non-cooperative corporations.

SELF-ASSESSMENT EXERCISE 1
Explain the term middlemen in marketing.

3.3 Marketing Channels

This is sometimes referred to as marketing chain. It is defined as the sequential movement of the commodities form the producer (farmer) to the final consumer. It is the stages through which commodities pass form farmers to the consumers.

It represents the outlet for the distribution of the commodity. The marketing of agricultural products is characterized by a long and sometimes complicated chain of distribution with many intermediaries. Hence, there is no typical marketing channel for a particular produce. A particular commodity can take any or a combination of these forms of channel.

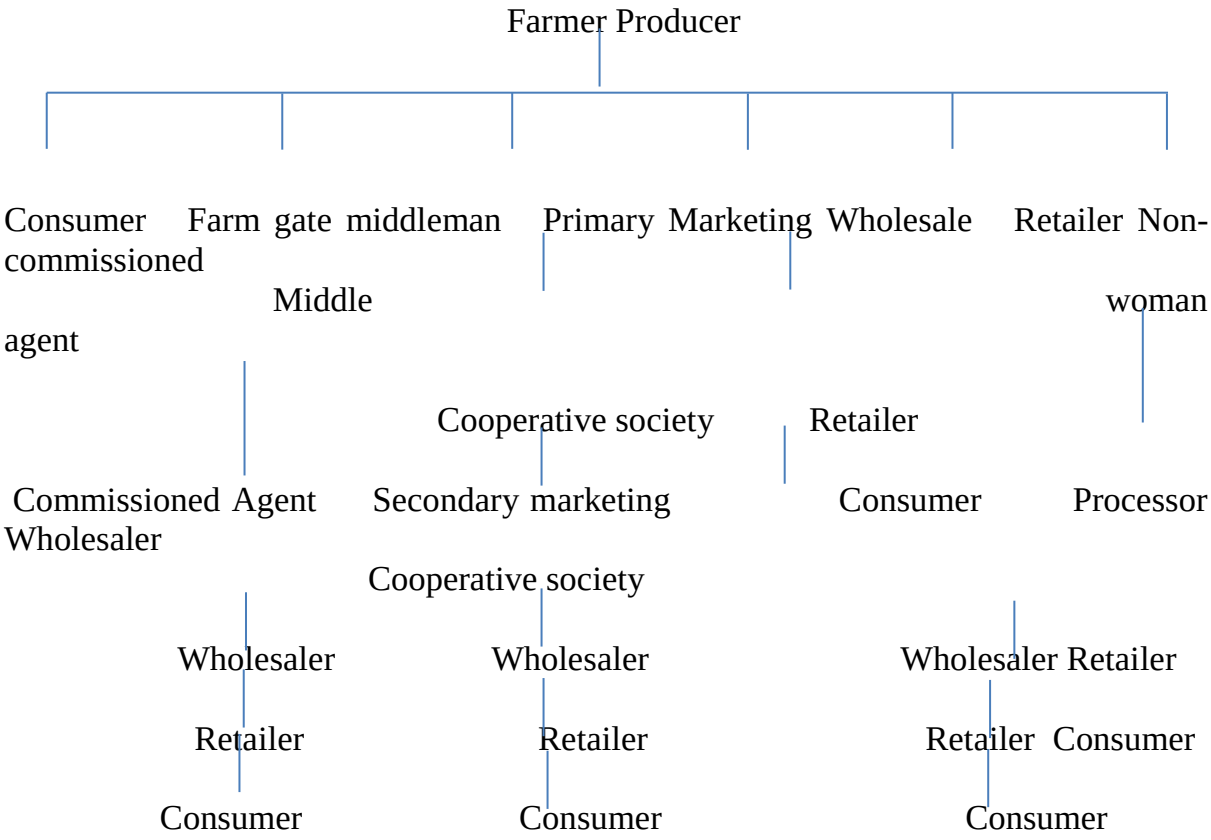

Figure 20:1: Possible Marketing Channels for Agricultural Food Crops in Nigeria

SELF-ASSESSMENT EXERCISE 2
What is marketing channels?

It is important to note that the longer the channel of marketing a particular produce, the greater the number of middlemen/women and marketing institutions, resulting in higher marketing cost and final retail prices. The percentage of retai1 prices which returns to the farmers is lower, hence a higher marketing margin.

3.4 Marketing Institutions

Marketing institutions are the various organizations that participate in the marketing of goods and services within the marketing system. They are also referred to as marketing agents and constitute the principal actors within the marketing institutions have been identified as peasants, large scale producers, farm gate middlemen/women, commissioned agents, non-commissioned agents, processors/manufacturers wholesalers and retailers, trade association including co-operatives.

These are distinguished by the size of operation, capital outlay required and function they perform.

3.4.1 Farm Gate Middlemen/women

This category of middlemen women buys the produce from site of production taking advantage of the spatial price differential. They undertake the transportation of the produce from the farm to market places for sale to wholesalers or retailers.

3.4.2 Commissioned Agents

These are middlemen or women who simply act as representatives of another marketing institution. They act as intermediaries between the farmer and buyer of the produce. Usually they do not take titles to the goods they sell. They however, have a good knowledge of the market situations such as information which they use to bring together the buyers and sellers of the commodity. In essence, they render marketing services. They perform the facilitating functions of marketing. At the end of the transaction they are paid a previously agreed commission or fee.

3.4.3 Non-Commissioned Agents

Non-Commissioned Agents are middlemen or middle women who take titles to the commodity they sell. They perform the marketing function of transportation, storage and sometime processing before selling to wholesaler, retailer or consumer.

3.4.4 Wholesalers

Wholesalers buy in large quantity and sell in bulk to others such as retailer's industrial users of the product, processors, institutions and other middlemen or middle women. They do not sell significantly to ultimate consumers. In most market places, in Nigeria, wholesalers constitute a small proportion of the traders usually accounting for less than 10% of the entire traders' population. The wholesalers perform the function of collecting, grading, storing, delivery and financing, in marketing of the commodity.

SELF-ASSESSMENT EXERCISE 3

Briefly describe the following:

i. Farm gate middlemen. ii. Wholesaler the commodity.

3.4.5 Retailers

Retailers are middlemen or middle women who buy commodities for resale to final consumers, often in small quantities. In this way they perform the function of breaking bulk, storing, sometimes giving credit and promoting sales. They are often referred to

as the personal representatives of the producers to the ultimate consumers. They depend on haggling power to buy cheaply and sell at high prices. They make profit through the use of different measures. They purchase with large measures and sell with small measures. Some use false measures or change to smaller measures when innocent buyers are not watching. The introduction of uniform measure by the Oyo State Ministry of Commerce and Industry in late 1980s has significantly enhanced retailing in the state.

3.4.6 Processors/Industrialists

Farm products are the raw materials of these marketing institutions. They purchase the produce, transport. Store in warehouse and effect changes in the physical form of the commodity (process) and sell to ultimate consumers. Examples are (1) Women who process cassava into garri, cassava flour (ii) Cadbury Nigeria PLC that process cocoa into Bournvita. (iii) Fruit canners who process fruits into fruit juice etc.

3.4.7 Speculative Middlemen/Middle women

These undertake buying and selling of goods with the purpose of taking advantage of spatial and temporal price differentials. By so doing they perform the function of risk-bearing, storage and financing as money is tied down in the commodity store. Most agricultural products sell for relatively lower prices at the peak or the season and command higher prices at off seasons. Other marketing institutions are facilitating in their nature of operations such as Bodija market rice sellers' association. Kaduna butchers association etc. these associations assist in pricing and dissemination or marketing information to their members. They also provide credit facilities to members. The effects are that within a particular market place, a uniform unit price is place on a product depending on the type and the quality. Often, sanctions are placed on any defaulting member when discovered. They constitute cartel in the marketing system. Except for the facilitating and processors marketing institutions, all other marketing institutions are individualistic in operation. Other non-individual organized marketing institutions arc commodity boards and cooperative.

3.4.8 Facilitative Organizations

Faci1itative organizations aid the various middlemen in performing their tasks. Such organizations do not, as a general rule, directly participate in the marketing processes either as merchants, agent's processors, or speculators. One group of these organizations furnishes the physical facilities for the handling of products or for the bringing of buyers and sellers together. They establish the "rules of the game" which must be followed by the trading middlemen, such as hours of trading and terms of sale. They may also aid in grading, arranging and transmitting payment. They receive their incomes from fees and assessments from those who use their facilities. Another group of organization falling in this general category are the trade associations. The primary purpose of a large majority of these organizations is to gather, evaluate, and disseminate information of value to a particular group or trade. They may carry on research of mutual interest. In many cases they also may act as unofficial policemen in preventing practices the trade considers unfair or unethical. Though not active in the

buying and selling of goods, these organizations often have far-reaching influence on the nature of marketing.

3.4.9 Speculative Middlemen

These are those who take title to products with the major purpose of profiting price movements. All merchant middlemen of course, speculative in the sense that they must face uncertain conditions. They undertake buying and selling of good with the purpose of taking advantage of spatial and temporal price differentials. By so doing they perform the function of risk bearing, storage and financing as money field down in the commodity stored. Most agricultural products sell for relatively lower prices at off seasons.

SELF-ASSESSMENT EXERCISE 4
Explain the following term:
a. Retailer b. Speculative middleman

4.0 CONCLUSION

The activities of middlemen in marketing could not be over emphasized and are distinguished by the size of operation capital outlay required and the function they perform. the greater the number of middlemen in a marketing channel, the higher tic marketing cost and final retail prices and the percentage of this retail prices which returns to the farmer is lower hence a higher marketing margin middlemen or middle women. They do not sell significantly to ultimate consumers. In most market places in Nigeria, wholesalers constitute a small proportion often traders usual1y accounting for less than 10% of the entire traders population.

SELF-ASSESSMENT EXERCISE 5
Retailers are middlemen or middle women who buy commodities for resale to final consumers often in small quantities. In this way they perform the function of breaking bulk, storing, sometimes giving credit and promoting sales. They are often referred to as personal representatives of the producers to the ultimate consumers. They depend on haggling power to buy cheaply and sell at high prices. They make profit through the use of different measures.

5.0 SUMMARY

The key actors of marketing institution are the middlemen who specialize in performing the various marketing functions involved in the purchase and sale of good as they a moved from producers to consumers. There is no limitation as to the way in which they have organized for doing business.

6.0 TUTOR-MARKED ASSIGNMENT

Explain the following:

1. Wholesaler
2. Retailer
3. Speculative middlemen

4. Farm gate middlemen

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UNIT 21 FOOD PROBLEMS IN NIGERIA

CONTENTS

1.0 INTRODUCTION

Food provides the basic human need and energy. Before 1970, food supply in Nigeria was enough given the population. The abundant food at this time was due to low prices. From then onwards, food shortage in the country has remained a permanent problem. This is reflected in the high food prices, and growing expenditure on food imports. However, in this unit you will find out that although Nigeria is an agrarian society there is still shortage of basic food.

2.0 OBJECTIVES

A hungry person is an angry person. When you infer from this perspective, you should be interested to know that there are indicators that show the existence of food shortage in our society. Therefore, at the end of this unit, you should be able to:

- trace the indicators of food problem
- explain the reasons for food problem in Nigeria
- outline government's objectives, policies and programmes for combating the food shortage problem.

3.0 MAIN CONTENT

3.1 Indicators of the Existence of the Problem

Food shortage is ironically becoming a major national problem in this country, a country that is supposed to be agricultural. In this unit, we intend to provide some evidence that attests to the growing acuteness of the problem.

3.1.1 Growth Rate of Food Supply and Demand

For some time now, available data have indicated that the rate of growth of food demand, estimated at 3.4 per cent per annum, far exceeds that of food supply, which is estimated to be 2.2 per cent per rapid increase in population, urbanisation and increase in incomes.

In the 1960s, the population growth rate of Nigeria averaged 2.5 per cent per annum while in the 1970s this growth rate has been estimated to be in the range of 2.5-3 per cent per annum. This shows that the population growth rate is greater than the growth rate of food supply in the same period. The increase in the growth of population has been largely due to a decline in the mortality rate resulting from improvement in public health and nutrition.

Concerning urbanization, the rate of growth of the rural population in Nigeria between 1970 and 1975, was 1.6 per cent per annum compared to that in respect of urban population, which was 7.8 per cent per annum, more than double the growth rate of total population. The increased urbanization was a result of wider spread of education, better communications, and better employment opportunities. Generally, better levels of conditions of living increased the individual's economic horizon beyond the rural areas.

The excess demand situation also resulted from increased income as a result of the various salaries and wage increases, most especially the Udoji awards. The salary

increases have placed many more people within high-income level bracket. More people were able to buy food items of better nutritional value

3.1.2 The Nigerian Food Balance Sheet

Alternative criteria for measuring the acuteness of food shortage has been suggested by the Food and Agricultural Organization (FAO) of the United Nations. This is referred to as the analysis of Food Balance Sheet. A Food Balance Sheet shows the estimated per capita supply of food available to a country in a given period.
In 1972, a Food Balance Sheet for Nigeria was published in 'A Quantitative Analysis of Food Requirement Supplies and Demand in Nigerian 1968-1985' by S.O. Olayide. It was estimated that in 1968/69 about 61.2 grams of crude protein and 2203 kilo calories of energy per day were available to the population. Minimum requirements, according to the FAO, for meeting the food and nutritional needs of the population are 2420 kilocalories and 65 grams of crude protein. Thus, the nutrients from available food supply in Nigeria in 1968/69 were below the minimum requirements.

In 1974/75, the position had deteriorated further as only 56 grams of protein and 2023 kilo calories of energy were being derived from available food supply. This gloomy picture is often covered by reference to the national average since, in fact, practical experience shows that a greater percentage of the population actually lives below the national average just as a few rich ones live well above the national average. In the more developed countries, the corresponding data for 1974/75 averaged 3,000 kilo calories for energy and 95 gram for protein.

3.1.3 Changes in the Level of Food Imports

Another, and perhaps the most appropriate measure of food supply situation, is the changes in the level of food imports. Government policies during the First Republic were geared towards increased production of export crops to meet the requirement for increased foreign exchange earnings for development purposes. Food production was, therefore, often neglected. Thus, in the mid -sixties, it became apparent that the country could no longer feed herself and a substantial amount of food had to be imported, in the first stage, to supplement local production. At a later stage, however, imports substituted for home production.

If food import merely complemented domestic supply, it would be difficult to link a growing food import volume with a deteriorating food supply situation. But when imports become substitutes for domestic supply, the inference would be justified. The latter is true in Nigeria's case.

3.1.4 Domestic Food Prices

A rise in domestic food prices generally implies a situation of excess demand although prices can also be influenced by supply bottlenecks and speculation. However, there were continuous rise in domestic food prices situation. The result of a decline in growth rate of domestic food supply in the face of increasing population and increased urban income has been the increase in food prices.

Activity 1: Highlight the reasons for the food problems in Nigeria

Possible Explanations for the Food Problem in Nigeria, A number of plausible explanations could be provided for the food shortage problem in Nigeria. These are discussed briefly in this section.

(a) The Effect of the Civil War

The political and military crises of 1966 to 1970 had devastating effects on economic performance in the country. Apart from the fact that a large amount of labour was lost to the armed forces and that huge resources were diverted to prosecuting the war, considerable time and resources were put to the rehabilitation, reconciliation and reconstruction of the war-torn areas. These, no doubt, had some adverse effects on food production in all parts of the country but especially in the war affected areas.

(b) The Effect of the Sahelian Drought on Grain and Livestock Production

The country's main grain and beef producing areas were badly hit by the Sahelian drought of 1972/73. It was estimated that in 1973, the worst year of the drought, the production levels of such crops as millets. Guinea corn, groundnuts cowpeas, maize and rice were reduced by between 25 and 40 per cent. It was also estimated that about 300,000 heads of cattle died of starvation and many thousands more were slaughtered prematurely.

(c) Inadequacy or Lack of Effective Supporting Services

Only a small portion of total capital outlays was devoted to credit programmes in the First National Development Plan by the southern regional governments. Lack of adequate credit facilities has always been a major constraint to agricultural development in Nigeria.

During the Second Plan period, however, the Nigerian Agricultural Bank was established for the purpose of making loans available tofarmers on more or less favourable terms. It was provided with N20 million capital.

A sum of N150 million was earmarked for the bank during the Third Plan period. The 650 per cent increase in the bank's capital is in recognition of the importance of easy credit facilities to the development of agriculture. Since the bank's inception in 1973, it has carried out its loan lending activities. One can presume that the loans of the banks are never likely to reach the majority of Nigerian farmers since they will not be able to fulfill the conditions for getting the loans.

(d) Marketing Facilities

As regards marketing facilities, the marketing system, especially that in relation to staple food crops, is largely unorganized, very inefficient and constitutes a disincentive to producers. State Marketing Boards used to constitute the exclusive purchasers of Cocoa, groundnuts, palm produce and a number of minor commercial crops like coffee. The major commodities not controlled by Marketing Boards were the various food crops.

However, a Grains Board was established to deal with storage and marketing of products like maize and guinea corn and a Root Crops Board was also established to deal specifically with tubers like yam, coco-yam, cassava, etc. Commodity Boards have also replaced the existing Marketing Boards. In spite of these changes, however, there is still lack of adequate storage facilities, which is the most serious problem regarding the marketing of staple food crops in Nigeria. One implication of this is that virtually the whole farm output is brought to the market for sale at harvest time, resulting in prices that do not give the farmer sufficient incentive to expand output. The marketing of staple foodstuff is also inefficient because of the inadequate transportation facilities and the generally low infrastructural development of rural areas. Poor transport links tend to cause seasonal price variations in small isolated markets. Storage costs are as high as 2.5 -3 per cent of the value of the produce stored per month. The high cost of distribution of foodstuff has probably contributed to the increase in urban food prices.

(e) Land Tenure

Land ownership system varies from one ethnic group to another. However, there is a common characteristic feature, namely, the absence of individual land ownership. Before the promulgation of the Land Use Decree, land was owned by the community and individual holding was consequently often very small. Such a system discouraged individual investment in conservation and improvement of land, and makes it difficult for a farmer to obtain loans using his land for security. The essence of the decree in the rural areas is basically to facilitate large-scale farming. However, the lack of an effective law enforcement agency to back up the decree coupled with the foot-dragging that has accompanied the implementation of its provision has left it rather ineffective up to date. Although the decree vests the ownership of all undeveloped land in government, people are still selling land.

(f) Inadequate Supply of Agricultural Input

The use of improved inputs is extremely limited. Procurement and distribution of seeds, chemicals and other agricultural inputs are handled by each state government. The distributive system has always been bedeviled by inefficient handling. Not only are the quantities not enough but also very often the limited quantities distributed do not reach the farmers at all. Even when they do, they rarely get to the farmers at the time they are most needed.

Though agriculture still employs a considerable proportion of the Nigerian labour force, it still suffers from the problem of inadequate labour supply, especially during the clearing, planting weeding and harvesting seasons. The young ones are attracted to the urban areas in search of employment and thus the rural population is often old and, as one would expect, with declining productivity. As already narrated, the civil war attracted some able-bodied young men into the Army and thus their contribution to agriculture was lost while they consumed a high proportion of the food products.

Activity 2: Given the problems of food shortage in the country what effort has the government made to alleviate this problem?

3.2 Government Objectives, Policies and Programmes For Combating the Food Shortage Problem

Given the persistent nature of various agricultural problems, the federal and state governments had to be guided, from time to time, by certain objectives which have been stated in development plans as well as annual government budgets. The major stated objectives include:

i. Ensuring food supplies are adequate and quality to keep pace with increased population and need for fair and stable prices. These would be achieved by improvement of hoes and cutlasses with harvesters, tractors, and the use of National Seed Multiplication Scheme.
ii. Expanding the production of export crops with a view to increasing and further diversifying the country's foreign exchange earnings. This was to be achieved by the rehabilitation of low producing palms and the regeneration of cocoa. Hence, provision was made for creation of incentives to producers by way of better produce prices, loans incentive and extension services.
iii. Propagating the production of agricultural materials for extensive domestic manufacturing activities especially in the field of agro-based industries.
iv. Evolving appropriate institutional and administrative apparatus to facilitate a smooth integrated development of agricultural potentials of the country as a whole.

In furtherance of these objectives, land tenure system was to be vigorously pursued and National Agricultural Credit Scheme with centralised control but decentralised operation was to be established. In addition, Federal and state research centres were to

be reformed. This involves establishment of new ones and the improvement of existing ones.

The Federal government also embarked on a number of measures aimed at removing identified obstacles to rapid agricultural development and crop production and encouraging more investment in the sector. These measures include:

i. Guaranteed loan scheme in which the federal government guarantees all agricultural loans given by commercial banks to the tune of 75 per cent of the irrecoverable amount
ii. Five years tax holiday for investment in combined agricultural production and processing.
iii. Abolition of import duties on tractors and other machinery and equipment used for agricultural production.
iv. Increase of subsidies on fertilizer to 75 per cent.
v. Transfer of integrated agricultural production and processing from schedules II to III of the Nigerian Enterprises Promotion Decree.
vi. Treatment of agricultural production and processing and marking of agricultural produce as favoured sector under the credit guideline.
vii. All capital expenditure and equipment incurred in agricultural production by individuals or companies will, apart from attracting existing capital allowance, enjoy an additional investment allowance of 10 per cent.
viii. Indefinite carry-forward of losses suffered by a company engaged in agriculture until such losses can be written off against future profits.
ix. Exemption from taxation of the interest payable on loans granted to aid investment in agriculture.
x. Granting of capital allowance for tax purposes to those wholease out agricultural equipment.

Although most of the measures enumerated above are designed for types of farmers-small, medium and large scale - it is a fact that small-scale farmers who feed this nation hardly benefit from them. This is the major defect of governments' efforts.

Certain specific programmes were pursued to enhance the realization of improved agricultural system and productivity. Such integrated policies include the following:

i. Price and Tax Incentives for Producers

The federal government has already abrogated the Marketing Board System with a view to increasing producer prices, producer incomes and the level of inputs. The highlights of the reforms were as follows: price fixing has become the responsibility of producer; the two-tier system of produce taxation has been canceled; and prices were to be fixed with no ‘trading surplus’ in view.

ii. Infrastructure Programme

This constitutes the bulk of the subsectors' capital estimate with an allocation ofN428.26 million consisting mainly of irrigation, soil conversion, land use survey, agricultural research, manpower training and storage and marketing.

iii. Federal government participation in direct production
iv. National Accelerated Food Production Project (NSFPP)
v. Agro Service System

This system was designed to facilitate an expeditious delivery system for inputs such as fertilizers, pesticides, herbicides. It also involves storage schemes for combating scarcity in the event of crop failures.

vi. National Seed Multiplication Programme: The aim of the programme is to provide farmers with improved seeds.

vii. Agricultural Credit: This is aimed at tackling the problem of capital in Nigerian agriculture by establishing the Agricultural Credit and Co-operative Bank in 1975.

viii. Land Use Decree: The aim is to solve the problem of land ownership and make vast land available for farming.

ix. The Operation Feed the Nation (OFN) of 1976 and the Greenrevolution of recent years were major food production programmes designed to promote self-sufficiency in food supplies. The Green Revolution was formally launched in April 1980. It is a programme that was designed primarily to modernise the agricultural sector and especially to achieve self-sufficiency in food production by 1985. Under it, the federal government is expected to allocate substantial funds for the resuscitation of areas of food crop, livestock and fish production which had been hinder financial handicapped. Various projects such as land clearing schemes, the provision of farm mechanization centres. Agro-service centers, river basin development schemes, the national food production programme and tractor hire services will receive priority treatment. The Green Revolution programme included the increased supply of fertilizers and other materials inputs, and the expansion of credit facilities under the credit guarantee scheme, to farmers.

4.0 CONCLUSION

Food policy in Nigeria has so far gone along times that will create and intensify dependency between Nigerian agriculture and the agricultural products and technology of external economies. This is because its strategy for food production is biased towards sowing the urban food crisis. It is that capital intensive and focuses on transferring investment into the hands of elite farmers and not mobilising the creative powers of the millions of small rural farmers. It also ignores meaningful investment in

livestock sector which is in the hands of or the bush environment of rural farmers and normadic groups. This policy is brought with the internal contradiction of intensifying the poverty and migration of rural people into urban area.

5.0 SUMMARY

Food shortage is becoming a major national problem in this country. The growth rate of food supply and demand of food are growing disproportionately. This could be because of some fundamental problems such as the Sahelian drought on grain and livestock, lack of effective supporting services, marketing facilities, land tenure system, etc. However, supply of agriculture input has been a major strategy of the federal government. The federal government also embarked on many other measures aimed at removing identified obstacles to rapid agricultural development and crop production. These include, guaranteed loan scheme, tax holiday, abolition of import duties, amongst others.

6.0 TUTOR-MARKED ASSIGNMENT

The federal government of Nigeria embarked on certain programmes to improve food production in the country. Outline some of the programmes.

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