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I am submitting herewith a dissertation written by Emmanuel U. Ushi entitled "Nigerian Agricultural Development Strategy and Policy: A Theoretical Evaluation and Policy Implications." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Agricultural Economics.

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# NIGERIAN AGRICULTURAL DEVELOPMENT STRATEGY AND POLICY: A THEORETICAL EVALUATION AND POLICY IMPLICATIONS

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Presented for the

Doctor of Philosophy

Degree

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Emmanuel U. Ushi

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# PREFACE

Two days before his scheduled examination on the dissertation, Emmanuel Ushi was hospitalized with malaria. Four weeks later, on March 15, 1988, he died of leukemia without ever leaving the hospital.

His dissertation committee had anticipated requesting some further modification of the manuscript that had been submitted even though it represented a substantial amount of work on Emmanuel's part. Following his death the committee was of the unanimous opinion that Emmanuel should be given recognition for the work he had done even though it had some shortcomings.

Emmanuel's major professor undertook responsibility for the final editing of the manuscript. It soon become clear that many of the works cited by Mr. Ushi could not be located without an extensive search. In addition, where the cited works could be readily located, the credits given were not as precise as the committee would have desired. To the extent that they could be, these shortcomings have been corrected. Where the sources could not be located, every effort has been made to give those sources the credit which they deserve.

While somewhat limited, the committee feels that Mr. Ushi has made a contribution to the better understanding of the problem of agricultural development in Nigeria. It is on this basis that the committee has accepted the dissertation as partial fulfillment of the requirements for the degree of Doctor of Philosophy with a major in Agricultural Economics.

The members of the dissertation committee that worked with Mr. Ushi include Dr. John R. Brooker, Agricultural Economics,

Dr. William E. Cole, Economics, Dr. S. Darrell Mundy, Agricultural Economics, and Dr. Charles L. Cleland, Rural Sociology. Dr. Merton Badenhop had served to guide him through the early stages of his doctoral program.

Regina Gwin's contribution through the typing of the various final revisions must also be acknowledged.

## Abstract

The majority of Nigerians are dependent on agriculture for their livelihood but governmental policies for development of the economy have tended to neglect the welfare of farmers. The governmental policies with respect to agriculture since independence in 1960 have swung widely with the boom and bust of income from petroleum and the consequent shift in importance of agricultural exports for foreign exchange. The civil war that ended in 1970 was also a serious distraction to the concern with the welfare of farmers.

Four theories of agricultural development were examined with respect to the Nigerian situation and the policies followed by the federal government. Traditional agriculture as viewed by Schultz appeared to explain part of the pattern of government policies. The classical and neoclassical models described by Jorgenson and the parallel dual economy model dealt with by Ruttan were found to bear little resemblance to the Nigerian situation. The integrated approach put forth by Hagan and Lele were found to be the most useful in understanding the development of Nigerian agriculture.

Information about agriculture in Nigeria since the FAO study which was requested in 1964 was found to be exceedingly scarce, making the analysis very tentative and the recommendations to be based primarily on personal observation and private communications. The national five-year plans were instructive. "Operation Feed the Nation" introduced in 1976 was followed by the "Green Revolution" in 1980 with a change of administration. While substantial progress was

made in agriculture during the green revolution, some serious errors in its administration resulted in some unintended beneficiaries reaping very large rewards while the producers of agricultural products experienced very modest gains.

Successful agricultural development will require an atmosphere of trust of governmental officials, increased identification with national goals by farmers, emphasis on the well-being of the farmers, increasing investment in the infrastructure and sectoral goals that can be combined into a national food plan. The integrated approach suggested by Hagan and Lele has the greatest promise of the various theories that might be used to guide development.

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# CHAPTER 1

## INTRODUCTION

Agriculture is the most important sector of the Nigerian economy. Roughly 60 percent of gross domestic product (GDP) is still earned in the agricultural sector, and about 80 percent of the labor force is employed there (Helleiner 1966). Also agriculture together with fisheries, forestry and livestock contribute 60 percent to the national income (Oluwasami 1966).

The agricultural sector includes several subsectors which are distinguished by type of product being grown, but also, the level of their technology, and their level of integration into markets. These differences, in turn, create different competition for inputs and for consumers within the subsectors. These agricultural products differ in type and in composition and vary with geographical regions. The major crops include root crops, grains, cash field crops, tree crops, and livestock.

Root crops include cassava, yams and coco yams and are the largest proportion of agricultural production in terms of volume. Cassava and yams are generally grown throughout the southern half of the country while coco yams are grown in the cocoa region of the southwest. The Food and Agricultural Organization of the United Nations (FAO) has estimated that these crops provide 30 percent of the calories consumed in Nigeria.

Mabbs-Zeno (1986) maintains that more than 40 percent of calories consumed in Nigeria come from grains. Domestically, the bulk of this

is provided by the sorghum and millet agriculture prevalent throughout the northern part of the country. Corn, grown mainly in the south accounts for 15 to 20 percent of grain production. Rice grown in river valleys throughout the country, currently adds about 15 percent of grain output. The value of the rice crop, however, is approximately equal to that of millet or sorghum.

Livestock production yields more than 10 percent of the value of all agricultural production with poultry exceeding values from beef, milk, mutton and pork, according to Mabbs-Zeno. Different kinds of fish are also important along the coastal areas and other rivers and lakes within the territory. Domestically produced fish are estimated to provide about 30 percent of the animal protein consumed nationally, but total animal protein is only 15 percent of all protein consumed in Nigeria.

Field cash crops include pulses, peanuts, cotton, sugar, tobacco, sorghum, and sesame. Pulses, peanuts, and cotton are grown in the northern part of the country, while cotton is concentrated in the river valleys. The total value of these crops currently constitutes about 4 percent of the agricultural produce in Nigeria as estimated by Mabbs-Zeno.

Tree and bush crops have long been the major commercial crops. These are generally southern crops with cocoa in the southeast and rubber and palm in the south central and southwestern areas of the country. Bananas, palm products, cocoa, and rubber are the most important agricultural crops in Nigerian agriculture. Kola nuts and coffee are also significant. Together these crops account for about 7

percent of all agricultural value according to Mabbs-Zeno (Figure 1.1).

## Changes in Composition of Agricultural Production

Mabbs-Zeno insists that the data measuring the performance of the Nigerian agriculture reflect some major historical events and several certain long-term trends, even though details of agricultural performance are obscured by the poor quality of the data. He maintains that the index of total value of agricultural production (Figure 1.2) rose at about 1 percent per year from independence in 1960 until 1975. Mabbs-Zeno noted that substantial shortfalls occurred during the civil war and during the drought in the early seventies, but the index returned to the trend quickly after these events. Since 1975, the index has grown at about 3 percent per year, except for a drop in the drought year of 1983.

The index of per capita agricultural production (Figure 1.2) would, in theory, better describe Nigeria's performance in meeting its agricultural needs. In practice, however, Mabbs-Zeno's index of per capita agricultural production was calculated by mechanically adjusting the population growth. The result of these calculations indicated that value of per capita production declined about 2 percent per year during the first 15 years of the Nigerian Independence and stabilized thereafter. Again, substantial declines are indicated for the drought years of 1983, and the civil war years of 1967-1970. Also

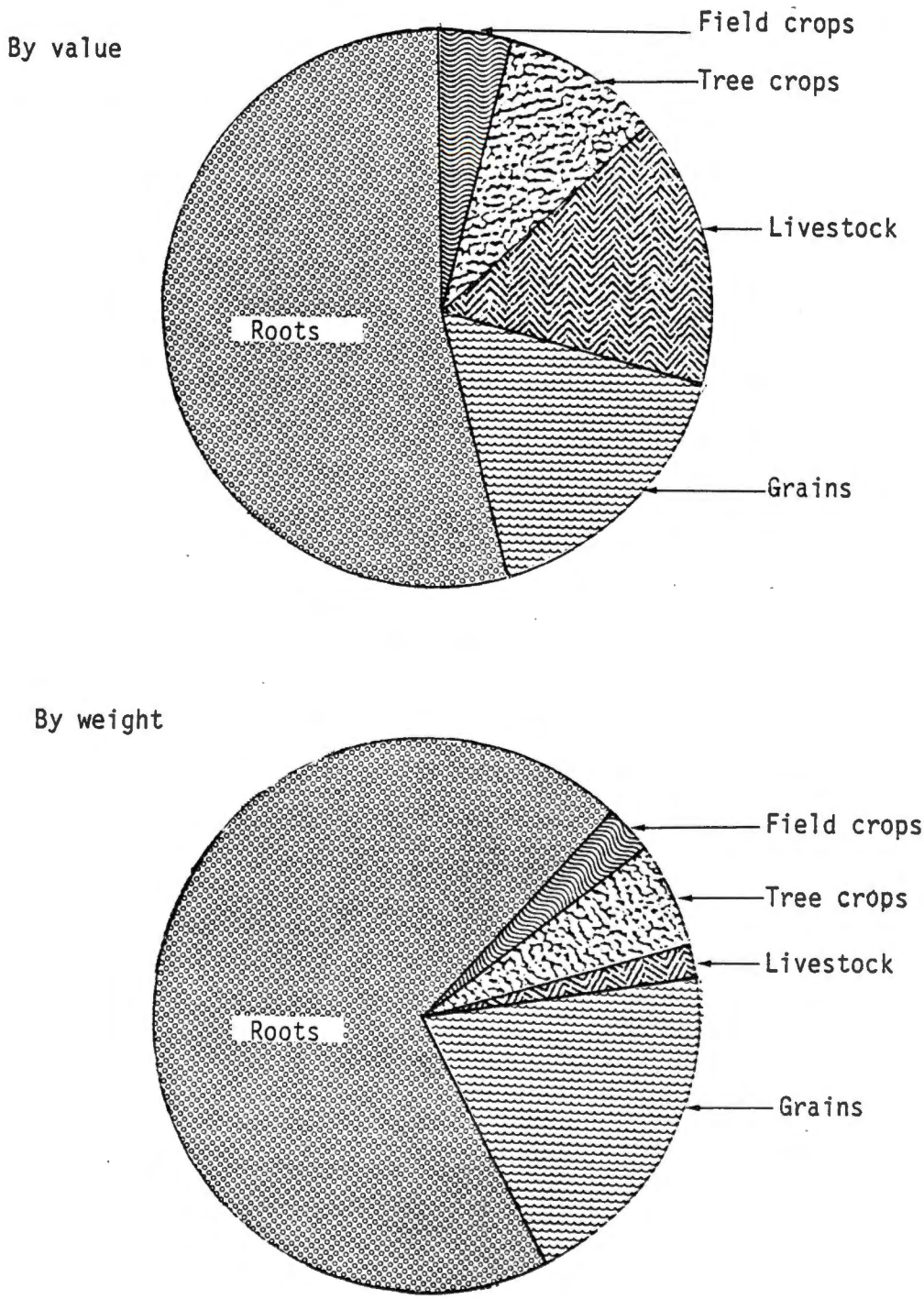



Figure 1.1. Nigerian Distribution of Agricultural Output by Crop 1981-1983

Source: USDA, Economic Research Service, Nigeria, An Export Market Profile.

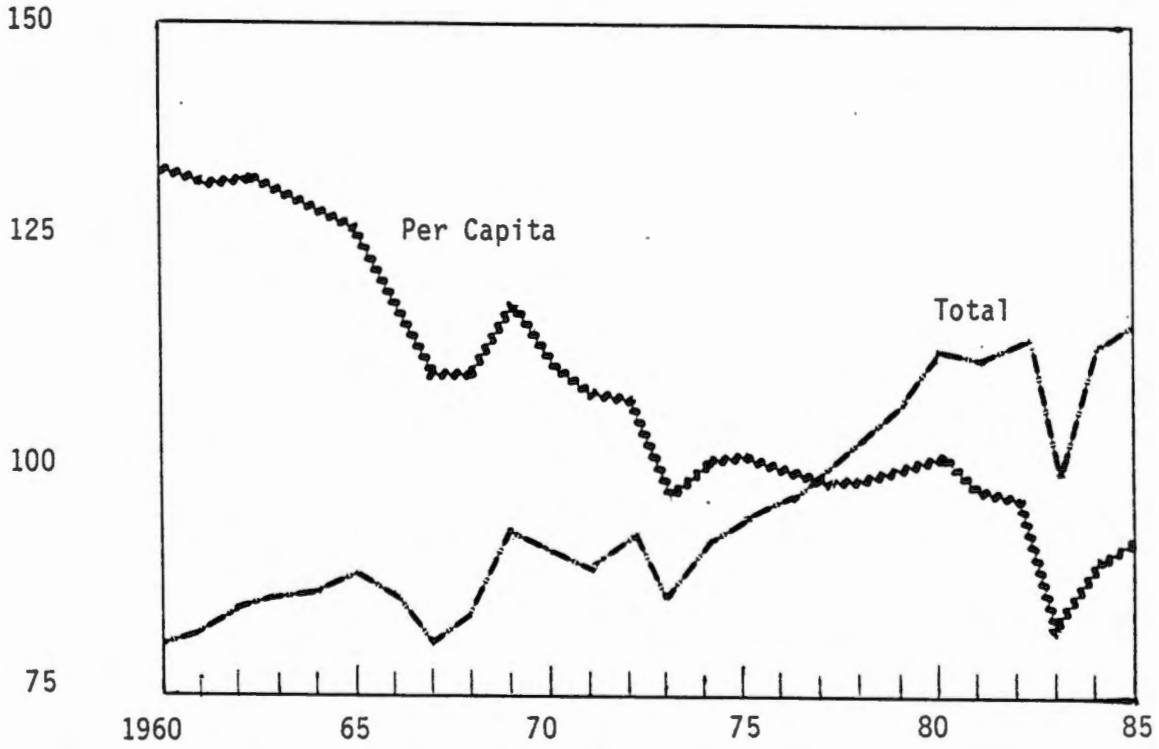



Figure 1.2

Nigeria: Indices of Agricultural Production, 1960-85

(Index: 1976-78 = 100)

Source: USDA, Economic Research Service, Nigeria, An Export Market Profile

as a result of the drought and the civil war in Nigeria, the quantity produced of specific products declined over time (see Figure 1.2).

In recent years, total production of palm products, cocoa and cotton has also declined. Production of bananas, peanuts, and sorghum has been stable recently, but at a level well below historical highs by Nigerian standard. Production of yams, corn, millet, pork, beef and lamb each grew modestly while production of both poultry and rice grew rapidly (Table 1.1).

## Agricultural Production Techniques

Nigerian agricultural products vary significantly with the geographical regions of the country. The northern part is predominantly savannah while the southern part is the equatorial rain forests. In the northern savannah areas, field crops like peanuts, millet, and tobacco are grown, and several production systems have been developed. Also cattle production is concentrated here due in part to the absence of the tsetse fly infestation.

In the northern part of the country, lives the group of people known as the Fulanis. Mabbs-Zeno estimates that they own about 90 percent of the nation's livestock, raising them in an annual migration which follows the edge of the tsetse fly region, as it shifts with the season.

Alternatives to the Fulani cattle culture exist in the form of another breed which tolerates the trypanosane parasite. These breeds are generally small but can prosper in the humid pasture areas. Also, several exotic breeds of relatively high-yielding dairy cattle have

Table 1.1 Nigeria: Agricultural Production of Quantity Trends Since 1972-73 Drought

| Trend | Product |
|---|---|
| Declining | Palm products, cocoa, cotton |
| Stable | Peanuts, sorghum, rubber, kola nuts, tobacco |
| Slowly growing | Corn, millet, yam, coco yam, beef, mutton, pork |
| Rapidly growing | Rice, poultry |

Source: U.S.D.A. Economic Research Service, Nigeria: An Export Market Profile. (1986)

been introduced in Nigeria from countries like Australia and other European countries. In the northern provinces, sheep and goats are more common, but a good number can be found in the south.

Poultry has traditionally been raised as scavengers in most village compounds with low annual harvest and almost no production of eggs for consumption. However, commercial operations designed to serve urban areas with both eggs and broiler meat have been attempted to exploit improved breeds through private enterprise. These efforts have significantly raised poultry production, especially of eggs, but their reliance on commercial feeds has left them vulnerable to input shortages according to Mabbs-Zeno. He also noted that when grain imports were restricted in 1984, commercial poultry production declined abruptly, due in part to grain restrictions and other factors that affect poultry production.

Nigeria is bounded to the south by the Atlantic Ocean into which both major rivers flow: the Niger and the Benue which flow southeast and southwest, respectively. There are numerous other streams and lakes in and around Nigeria and all these provide and encourage a variety of fishing both for domestic and commercial production. Most fishing is done in small canoes along the coastal areas. Also, a modern commercial fleet of about 300 ships exploits the coastal and in-shore areas of Nigeria according to information obtained from the national plan. As a result of increased fishing activities in and around Nigeria, a large off-shore fishing industry is pursued by foreign trawlers, although Nigeria claims an exclusive economic zone

extending 200 nautical miles from the shore. There is also potential for expanding freshwater fishing in both lakes and rivers in Nigeria.

In Nigeria, as many other developing economies, trees crops are grown mainly by small holders. Bananas and plantains are produced for domestic food supply throughout the southern part of the country. Palm products originally became a major export crop based on collection of fruits from wild trees. Recently, however, the government has supported planting of oil palm to the extent that nearly 28,000 hectares (ha) were planted between 1976 and 1980.

## The Economic Problem

All agricultural production involves the combination of land, labor, and capital. The quality and distribution of these factors help determine the success of agriculture, but research, extension and marketing contribute as well.

Traditionally, an objective of Nigerian research in many farm studies has been to provide the means to improve the organization and operation of individual farmers and their farming operation to achieve their desired goals. Based on investigation of such studies, Nagu, 1986, maintains that suggestions on policy issues from such studies depend on identifying farm goals as a necessary condition toward devising alternative ways or strategies of reaching them. Nagu also contends that goals are complex, vary with individual farmers and are usually tacit. The fundamental goal of assuring enough food for the individual farmers or the community is the primary aim of all farmers

in rural societies irrespective of their geographical location or the social-political system.

Agriculture accounted for 60 percent of Nigeria's gross domestic product (GDP) in 1966 and also employed 80 percent of the labor force according to Helleiner. He also asserted that no matter how much development and structural transformation is achieved in Nigeria, agriculture will retain its relative dominance in the economy for many decades to come. He also concluded that it was the agricultural economy, more particularly agricultural exports, that gave the economy its principal stimulus for growth. In Nigeria, however, peasant agriculture was part and parcel of the traditional economy. Nigerian economic growth was led by peasant agriculture (Helleiner 1966). The major problem facing Nigerian agriculture was its low technical level and the small scale of the majority of the holdings. Therefore, Helleiner (1966) maintained that the overwhelming bulk of production took place in "traditional" fashion, without the use of mechanical or, frequently, animal power on small, peasant-held plots. The principal tools of the peasant were and are hoes, cutlasses, axes and knives and as such suggest low productive capacity. Also, one of the problems facing the Nigerian agricultural sector is the land tenure arrangements. Land tenure has to do with the interrelationship between men in the use and control of land resources. In all societies, regardless of stages of social and economic development, this relationship is a complex one (Oluwasami, 1966).

This complexity in land tenureship in Nigeria is an aspect of the legal and political systems of the society and, in a sense, represents

a stage in the evolution of the economic and social institutions of the Nigerian society. Land is regarded throughout the country as the property of a community which could refer to a family, a clan, or a village consisting of a number of kindred or lineage groups or families (Oluwasami, 1966). The land tenure system also has two major obstacles which stand in the way of success in enhancing agricultural productivity (Food and Agricultural Organization of the United Nations, 1966).

(1) The traditional system of land tenure, means that an individual cultivator enjoys the usage of a plot of land for a limited time only, after which it returns to the pool for reallocation.

(ii) The prevailing custom of growing crops in mixed cultures, although it has some recognized advantages for subsistence farming under tropical conditions, often greatly reduces the possibilities of using, or may even prevent the use of, some improved techniques for cash crops where high yields and economic returns on investment become important.

Also, another prevailing condition in Nigeria is that of climate, soils, and vegetation, all of which exert considerable influence on the pattern of agricultural production. These physical factors of agricultural production can be changed, if at all, within very narrow limits and at great cost. Oluwasami (1966) suggested that the further away the production of a crop or of livestock is moved from what may be called its 'natural center', the more difficult it is for the farmer to grow crops or raise livestock successfully. Nigeria requires great expenditure of both effort and money in prolonged

research before livestock can be produced economically in the tsetse-infested and humid forest of Southern Nigeria, or before cocoa and oil palm can be successfully cultivated on the loose sandy soils of the Savannah country of Northern Nigeria.

Agricultural credit remains a destabilizing factor in the Nigerian agricultural sector. The Nigerian financial market is not yet developed and as such, farmers are not able to obtain funds when needed. Although both federal and state governments have provided, at subsidized prices, some agricultural inputs to the farmers, these are not sufficient to significantly enhance high productivity. Informal credit arrangements from friends and family are important in easing the seasonal demand for cash throughout Nigeria's small-holder agriculture and various studies have found that 30 percent or more of farmers use informal credit in a particular year, and most farmers use some form of credit occasionally. The prevalence of credit use and the amounts borrowed tend to be higher in the south, with typical informal loans averaging 30-70 Naire (₦1 = $2.00 US).

Formal credit has not been effective in serving smallholders, although several programs have professed that goal. The IMF estimated that less than 5 percent of credit to smallholders comes through institutions. Most of the loans from government programs to smallholders have gone into purchase of agricultural inputs, according to Mabbs-Zeno.

Transportation, marketing, and storage facilities also impose special problems of their own. Due to a lack of adequate facilities with respect to the above mentioned factors, agricultural crops cannot

reach the market in good condition. The farmer's total revenues are thus reduced, thereby lowering their net profit which directly affects their standard of living.

## Agricultural Research and Associated Problems

In Nigeria, as in most tropical African countries, the low productivity of the resources committed to farming is a basic problem. There is a definite relationship between agricultural productivity and the per capita level of incomes, the levels of nutrition, and the general welfare of the population. The supply of basic food for farm and nonfarm families depends on the efficiency of the subsistence sector of agriculture. The general purchasing power of peasant families, many of which produce for domestic consumption rather than for sale overseas, depends on the size of the surplus of food crops which they are able to place on the market. The size of the marketable surplus as well as the total food surplus is determined by the level of yields of food crops; the cash earnings of those farmers who produce cocoa, rubber, palm oil, palm kernels, groundnuts, cotton, tobacco, timber and livestock products for export markets are dependent on the level of yields of these crops and the conditions under which they are sold. Duties on exports and imports, which provide about 40 percent of government revenue, fluctuate with the prosperity of the export sector of agriculture (Mabbs-Zeno, 1986).

Research problems are common in all developing economies and Nigeria is not an exception. Although there are nineteen universities and as many as four dozen other institutions of higher learning in

Nigeria, these institutions are not research oriented. They simply give more emphasis on theoretical or academic instructions. Some institutions of higher learning do engage in research, but with limited funds from both state and federal governments. The research that is done is principally carried out at state institutions (research institutes, universities, and regional development authorities) as they pursue formal agricultural research programs.

Money for agricultural research is allocated to institutions with each institution specializing in one or more commodities. The distribution of funds does not reflect the relative contribution of the various commodities to the economy, but the allocations do reflect national goals for balancing agricultural production according to Mabbs-Zeno. The identification of research institutes with particular commodities has strongly emphasized agricultural production to the virtual exclusion of concern with marketing, soils, water management, mechanization, or other aspects of agriculture.

## Objectives

The general purpose of this study is to examine the role of agriculture in the Nigerian agricultural and economic development process. In light of this, an analysis of agricultural development strategy and policy will be presented and evaluated thus -

1. To assess the extent of agricultural and economic development in Nigeria.
2. To more clearly define the role of agriculture in the overall development of the Nigerian economy.

3. To suggest ways to improve the productivity of Nigerian agriculture which is predominately subsistence in nature.

## General Hypotheses

Traditional agriculture cannot contribute in any substantial way to the development of Nigeria because it represents a practical type of equilibrium (Schultz 1964). Much of the agriculture in Nigeria is traditional although some is plantation which has been export oriented since colonial days.

The programs advanced by the successive governments of Nigeria have been ineffective in transforming traditional agriculture so it can make a larger contribution to the development of the country. There have been very substantial sums of money directed toward agricultural development but these have represented a small proportion of the GNP. As a result, agriculture has not approached the potential that it has toward playing a significant role in the economic development of the rural areas of the country. Rather it has been maintained as traditional agriculture which has had enough resilience to supply much of the increase required to satisfy domestic needs but not enough of a transformation to have significance in the export market.

For agriculture to make the contribution to rural and economic development for which it has the potential, it will be necessary for a number of changes to take place. First, the policy of subsidizing urban residents with low food prices needs to be modified so the prices for agricultural products will provide the necessary incentives

for farmers to adopt technology that will increase production. Second, national policies need to recognize the dramatic differences between the various regions of the country so the services supported can be tailored to the distinctive needs of those regions. Finally, programs of applied research need to be developed along with appropriate provision for effective distribution of the information generated.

## Justification

The government and the people of Nigeria have undertaken as a primary objective of national policy, the raising of their material conditions of living at as rapid a rate as possible. They have also recognized the need for a considerable degree of government guidance in mapping the course of development and mobilizing resources.

The major policy problem in Nigeria as in any other developing economy involves the allocation of resources between current consumption and savings, the latter being for the creation of productive capacity for future use. As a result, the Nigerian government has instituted plans both on national and regional levels to deal with such developmental strategy. In these plans agriculture looms large since it still contributes nearly 60 percent of the national income, most of the export earnings, and provides employment opportunities to a significant proportion of the Nigerian labor force. Agriculture has a strategic potential for accelerating the economic growth of the country.

## Data Sources and Procedures

The data required for this study have been collected from various sources including journals, government documents, publications by the United Nations, the World Bank, United States Department of Agriculture (USDA), and other international agencies that have assembled information on Nigerian agricultural development and related policy. In this section, several procedural steps will be considered. The sources of data are described: first, a general description of the Nigerian economy will be presented. Second, the basic characteristics of the agricultural sector of the Nigerian economy will be brought into focus. Third, the relevant information obtained from the most current available sources will be used in the analysis.

In the next chapter is a survey of the literature related to agricultural development and economic growth in Nigeria.

Chapter Three contains a brief presentation of some characteristics of the Nigerian economy.

In Chapter Four, the extent of agricultural and economic development will be assessed, in conjunction with the role played by agriculture in the overall development of the Nigerian economy.

Chapter Five presents a summary and conclusion of the study. It also contains a discussion of the policy implications, and policy recommendations and suggestions to the Nigerian policy makers which might enable them to come up with effective and appropriate policy.

# CHAPTER 2

## REVIEW OF LITERATURE

The review of development economic literature suggests that a new consensus has emerged to the effect that agricultural growth is critical (if not a precondition) for industrialization and general economic growth. Nevertheless, the process of agricultural growth itself has remained outside the concern of most development economists. Both technical change and institutional evolution have been treated as exogenous to their system (Hayami and Ruttan, 1985). The first step in any attempt to evolve a meaningful perspective on agricultural development is to abandon the view of agriculture in premodern or traditional societies as essentially static.

Sustained rates of growth in agricultural output in the range of 1.0 percent per year were feasible in many preindustrial societies according to Hayami and Ruttan. They also maintain that with the advent of industrialization, potentials for the growth of agricultural output shifted upward to the range of 1.5-2.5 percent per year. Following the Industrial Revolution, rates of growth in the range occurred over relatively long periods in Western Europe, North America, and Japan. Since the middle of the twentieth century, the growth potential of agricultural production has apparently again shifted upward to annual growth rates of over 4.0 percent (Hayami and Ruttan, 1985). Hayami and Ruttan note that sustained growth rates in this range have been observed primarily in developing economies such as Mexico, Brazil, Taiwan, and Israel rather than in the older industrial economies.

Viewed in historical context, the problem of agricultural development is not that of transforming a static agricultural sector into a modern dynamic sector, but of accelerating the rate of growth of agricultural output and productivity, consistent with the growth of other sectors of a modernizing economy.

The primary purpose of this chapter is to understand the relationship between agriculture and economic development through an examination of four theories of agricultural development. These theories are: Transforming Traditional Agriculture by Theodore Schultz (Schultz, 1964); the Classical versus Neoclassical "Models of Growth," by Jorgenson (Jorgenson, 1969); the Growth Stage Theories and Dual Economy Models by Ruttan, and "An integrated approach to community development" by Hagan, (Hagan 1977); and Lele Uma (Lele 1976).

## Transforming Traditional Agriculture

Schultz (1964) suggested that traditional agriculture should be treated as a particular type of economic equilibrium at which agriculture gradually arrives over a long period, provided that particular conditions prevail. This type of economic equilibrium is based on Schultz's basic assumptions:

1. The "state of the arts" remains constant so that these are in fact known and used for generations such that nothing new has been learned either from trial and error or from other sources. In assuming so, the risk and uncertainties

associated with new knowledge about the yields inherent in factors embodying advance in knowledge are thus absent.

2. The state of preferences and motives for holding and acquiring sources of income remain constant.
3. Both of these states remain constant long enough for marginal preferences and motives for acquiring agricultural factors as sources of income to arrive at equilibrium, with the marginal productivity of these sources viewed as an investment in permanent income streams and with net savings approaching zero.

The particular economic equilibrium reflected by traditional agriculture is fundamentally in the spirit of classical economics in which the assumption of the "static" state of arts, is met. Schultz also looks beyond his principal variables (material factors and labor) and suggests that the particular economic equilibrium that represents traditional agriculture is fundamentally based on the state of the arts underlying the supply of reproducible factors of production, the state of preference and motives underlying the demand for sources of income, and the period of time during which these two states remain constant. Schultz and other development economists assert that agricultural factors that farmers (traditional or peasant) employ have been used by them and their forbearers for a long time and that none of these factors has been altered significantly as a consequence of learning from experience.

Thus, what is known by farmers about the factors they use has been known by people in the community for one or more generations.

This supports the notion that the state of the arts is constant in traditional agriculture, which meets one of the classical assumptions, though a much misused assumption in studying modern economic growth, or a dynamic world. Schultz argues that although the knowledge that is a part of the state of the arts is passed on from father to son by word of mouth and by demonstration, this does not mean that what is handed down is not authentic knowledge.

Historically, economists have made a distinction between "risk" and "uncertainty". The term "risk" is used when a decision maker can specify the possible outcome of a random process and can assign probabilities to each of the outcomes (Knight, 1921). In the same way farmers in traditional agriculture are aware of risk and uncertainty and these tend to guide them in their decision-making processes. Schultz (1964) concludes that, in general, farmers who are limited to traditional agricultural factors are more secure in what they know about the factors they use than farmers who are adopting and learning how to use new factors of production. The new types of risk and uncertainty about the yield inherent in factors embodying an advance in knowledge are of real concern to farmers. They could be of critical importance to farmers who are producing so little that there is barely enough production for survival. But since traditional agriculture is not introducing new factors, new elements of risk and uncertainty do not appear; they arise only when transformation gets underway. What matters here is that the state of the arts is in fact known, established, and given in the case of traditional agriculture,

and that the supply price of reproducible factors rise as the quantity of these factors increases, according to Schultz.

With Schultz's suggestion that agriculture approaches the particular equilibrium of traditional agriculture, the marginal productivity of investment in additional agricultural factors continues to decline. He concludes that there comes a point when the rate of return is so low that there is no longer any incentive to save for additional investment in these factors. Based on the above contentions that there are no new agricultural factors being introduced, and that productivity of all the factors being used have been known for a long time, there is virtually perfect knowledge about the marginal rate of return to investment in agriculture, and this state of knowledge has existed long enough for an equilibrium to have become established between savings and investment, or between the demand for and the supply of agricultural factors as a source of income. This supports Schultz's notion of traditional agriculture being in a state of equilibrium.

Schultz (1964) suggests that traditional agriculture has few significant inefficiencies in the allocation of resources. Nakajima (1965) has also demonstrated the theoretical subjective equilibrium, which is that the "static" state on the production possibility frontier of peasant farms under different situations ranges from pure subsistence to pure commercialization. The actual implication of the absence of inefficiencies in peasant agriculture is that no significant increases in agricultural production are to be gained by reallocating the factors at the disposal of the farm people.

Traditional agriculture that is characterized by long-run established equilibrium and its restrictive assumptions probably describes the Nigerian agriculture sector in its present stage of development. Nigerian agriculture is characterized by large numbers of poor subsistence farmers with a low income per capita.

Traditional agriculture can be transformed into a more productive agriculture by simply introducing new factors or investing in human capital. Economists have been aware of the importance of the advance in knowledge in increasing production, and, as a result, some of them have made the following comments. Alfred Marshall, as quoted by Schultz, rated knowledge very high and considered it the most powerful engine of production. Schultz also quoted Joseph Schumpeter as having attributed modern growth mainly to sources other than increases in the labor force and increases in the stock of traditional forms of capital. The treatment by Frank Knight that "all increases" in the production of agricultural commodities is useful knowledge, and it is to the advantage of those who engage either in modern or traditional agriculture. These assertions support Schultz's proposition - educating the farm population in the traditional agriculture is more important than differences in quality of both material capital and land on which they live.

In an article by Solon (1962), the formation of new capital goods is treated as a "carrier" of new technical knowledge and in this way, he seeks to cope with the production effects of some of these new factors of production and introduces these techniques into the production function presumably as integral parts of the observable

factors of production. In light of the above remarks by Solon, Schultz suggests that in transforming traditional agriculture, the agricultural ministry of a poor country may undertake a program to distribute new agricultural factors, adding that local experimental stations may distribute to farmers new varieties of seeds to be tested under actual farming conditions, and to induce farmers to adopt them. Schultz again suggests that an extension service may be established for this and other purposes. Schools may also contribute directly and very much so indirectly, in the long run by raising the level of schooling of farm people. Schultz suggests that philanthropic organizations, like the Ford Foundation and Rockefeller Foundation, can lend a helping hand in educating the farm population such as the programs going on in India and Latin America, respectively.

James G. Maddox (1956) also suggests that religious organizations through the support of schools and agricultural programs can educate the rural poor. The Food and Agriculture Organization of the UN and foreign governments through programs of economic aid that provide technical assistance to agriculture, are also suggested by Mosher (1976).

Schultz argues that profitable organizations cannot reach a social optimum in providing agricultural research to the peasant farmers due to two basic reasons:

(1) Such organizations cannot capture all the returns from the research involved, and

(2) Such organizations cannot as a rule establish a research establishment of optimum size.

Schultz in his book, Transforming Traditional Agriculture, sums up the book by saying that the man who is bound by traditional agriculture cannot produce much food no matter how rich the land is, and that thrift and work are not enough to over come the niggardliness of this type of agriculture. He goes on to say that to produce an abundance of farm products, farmers in poor communities should have access to and also have the skills and knowledge to use what science knows or provides about such factors of production as soils, plants, animals, and machines. He goes on to declare that even to command farmers to increase production is doomed to failure irrespective of their access to knowledge. Instead, Schultz maintains that an approach that provides incentives and rewards to farmers is required. The knowledge that makes transformation possible is a form of capital, which entails investment not only in material inputs in which a part of this knowledge is embedded, but also investment in farm people.

## The Role of Agriculture in Economic Development: Classical Versus Neoclassical Models of Growth

Jorgenson (1969) asserts that most backward economic systems have important relations with advanced economies, either through international trade or through the establishment of a modern "enclave" in an otherwise backward social and economic setting. Both relationships give rise to economic and social "dualism" in which a given economic or social system consists of two component parts, namely an advanced or modern sector, and a backward or traditional sector.

Jorgenson emphasizes that neither classical nor neoclassical theory of economic growth for a backward economy is directly applicable to the development of a dual economy. He points out the principal differences between the two approaches to the theory of dual economy. Such differences lie on the conditions governing the supply of labor to the advanced sector. Jorgenson characterizes theories of development for backward economies as classical and theories of growth for advanced economics as neoclassical. In the advanced sector, labor may be removed from the backward sector only by reducing the output of that sector. In the classical sector, labor may be removed at no sacrifice in output; in this sense, labor is surplus.

In the classical model, the real wage rate measured in agricultural goods is assumed to be fixed "institutionally" so long as there is disguised unemployment in the agricultural sector, as opposed to the neoclassical model where the real wage rate is assumed by Jorgenson and other development economists as being variable. Therefore, as a rule, the neoclassical and classical theories differ in the characterization of the backward or traditional sector of the economy. These assumptions are not without implications. Jorgenson implies that the agricultural labor force must decline absolutely before the end of the phase of disguised unemployment, while in the neoclassical approach the agricultural labor force may rise, fall, or remain constant over time.

The implications concerning labor tend to govern or dictate the terms of trade between the backward and advanced sectors. Thus, according to Jorgenson, in the neoclassical approach, the terms of

trade may rise or fall, while in the classical approach, the terms of trade cannot be determined endogenously.

In the classical approach to the theory of development of a dual economy, population growth is ignored or shunted aside as a qualification to the main argument that is the difference between the classical and neoclassical models. Lewis discusses a demographic theory quite similar to that of Leibenstein as outlined above. However, this demographic theory is not integrated into the theory of economic development in a satisfactory way. Lewis' main line of argument is that the unlimited quantities of labor are available to the industrial sector at a fixed real wage. He adds that the unlimited supply of labor may have its origin in population growth, but population growth is not affected by activity in either the agricultural or industrial sectors until the phase of disguised unemployment is completed. Jorgenson contends that a similar assumption is made by Ranis and Fei (1961).

Population growth will be treated as a know phenomenon exogenous to this model, according to Fei and Ranis (1961). They made these assumptions to support their hypothesis that as long as the real wage remains fixed, that the consumption of workers consists entirely of products of the agricultural sector. Ranis and Fei (1954) suggest that, as a consequence of the natural austerity condition arising from the same unlimited supply of labor situation, that much industrial output must take the form of capital goods due to the absence of a domestic market for consumer goods.

In conclusion, Lewis emphasizes that practically all saving is done by people who receive profits or rent. He continues to suggest that workers' savings are very small, and that agricultural rents are exchanged for goods produced by the industrial sector. The agricultural products represented by these rents are then provided to the industrial workers.

## Growth Stage Theories, Dual Economy Models and Agricultural Development Policy

However, List (1963), focuses his attention on a description of the conditions under which a mature agricultural stage can exist, under which it may progress, and how an agricultural stage can be transformed into one of a higher level by the introduction of manufacturing. List also regards the introduction of manufacturing as the dynamic element in the process of economic growth. He not only attributes this quality to higher productivity of industrially based societies, but also to the favorable environment for culture, social, technological and scientific progress generated in an industrialized society. List's work has particularly been concerned with demonstrating the positive role of industrial protectionism for countries (like Germany or the United States during the Nineteenth Century) which were in transition from a high level of agricultural development to industrialization. He equally agreed that free trade was the appropriate economic policy for such countries (a) which are "by nature" agricultural or which have not yet achieved a high level of agricultural development (mainly in the tropics) and (b) which have

achieved an advance level of industrial development (such as Great Britain). He concludes by stating that he "saw no rule for agricultural protectionism at any stage of development."

Progress in agriculture could only occur under the stimulus of export demand or through the input of domestic industrial development according to List. As a result, he regards domestic industrial development as the most important generator of agricultural progress because of the double impact resulting from the increased demand for farm products from an expanding nonfarm sector, and the development of more efficient methods of production resulting from the application of science and technology. Ruttan contends that there are some resemblances between List (1932), agricultural development stages and the concept of primary, secondary, and tertiary production developed in the 1930's by Fisher (1935), and propagated further by Clark and Hoselitz (1960). Ruttan tends to agree with Clark's model of the economic growth which accompanies agricultural transformation. Such transformation can be achieved if there are increases in output per worker in any sector accompanied by the transfer of labor from sectors with low output per worker resulting in a complete or partial elimination of unwanted labor. Ruttan then commented on the important impact of the Fisher-Clark generalization on economic development and policy during the decade following World War II. These are attributed to three factors, namely (a) the weight of empirical evidence generated by Clark's massive scholarship, (b) a felicitous choice of a value loaded terminology, and (c) the equating of economic progress with industrialization by the planners and policy makers of countries

which were attempting to emerge from economic and/or political colonization. In the mid-1950's, analytical validity and statistical evidence as well as the policy implications of the Fisher-Clark generalizations were questioned by development economists like Ruttan (1968) and Schultz (1951). Their analytical criticisms were due to the arbitrariness of the distinctions and lack of uniformity of income elasticity of demand among products classed within each of the three categories. These criticisms were aimed at the tendency of official statistics to conceal the high proportion of time spent by the rural population in secondary (handicraft, etc.) and tertiary (transportation, trading, personal services, etc.) activities in economies in which occupational specialization is limited.

The implications of the Fisher-Clark structural transformation model for agricultural development has been of concern to development economists. As a result of this concern, Schultz outlined a series of industrial impact hypotheses that economic development occurs in a special locational matrix; that locational matrices are primarily industrial-urban in composition; that the existing organization works best at or near the center of a particular matrix of economic development; and it also works best in those parts of agriculture which are situated favorably in relation to such a center. Schultz's hypothesis focuses on the failure of agricultural production and price policy to remove regional disparities in the rate and level of development in American agriculture. Ruttan points out that Schultz presented a rationale for the industrial impact hypotheses in terms of more efficient functioning of the factors and product market in areas

of rapid urban industrial development as compared with areas where the urban economy had not made a transition to the industrial stage.

The policy implication of Schultz's industrial impact hypothesis when critically viewed appears to be most relevant for the lesser developed regions of the more highly industrialized countries of western Europe and the United States. In such countries, Schultz adds that agricultural development can be accelerated by either increased industrial decentralization or migration of surplus agricultural workers to urban-industrial centers. Such policies, he continues, appear to have less scope in many of the lesser developed countries where, according to him, a) a major problem is that of achieving a satisfactory rate of economic growth in the nonfarm economy rather than the geographic distribution of economic activity, b) the technological prerequisites for rapid agricultural output growth in the face of a constant or expanding agricultural labor force are frequently not available, or c) the "pathological" growth of urban centers resulting from population pressure in rural areas frequently runs ahead of growth in the demand for nonfarm workers.

Johnston (1970) asserts that some of the most important and controversial issues of development policy revolve about the interpretation of the process of structural transformation. This involves the relative decline of the agricultural sector and the increasingly dominant position of the secondary and tertiary sectors. To some, this structural transformation is simply a consequence of development of increases in productivity and incomes in the various sectors of an economy that entails changes in the pattern of consumer

demand and the composition of output. Other writers take the position that structural transformation should be viewed not merely as a consequence of development, but as a process that should be deliberately fostered by policy measures. Such a policy will accelerate agricultural development and ensure that low-income, preindustrial societies will succeed in realizing their goals of achieving self-sustained economic growth, as will be seen in the case of Nigerian agricultural and economic development.

Ruttan (1968) suggests that the Fisher-Clark stages declined in professional importance due to the emergence of Roston's "leading sector" growth stage approach. He identifies five stages in the transition from a primitive to a modern economy a) the traditional society, b) the preconditions for take-off, c) the take-off, d) the drive to maturity, and e) the age of high mass consumption. These growth stage theories treat the transition from agricultural to industrial society as the major problem of development policy. One of the shortcomings of these steps of economic growth is their lack of specification of the time element in the movement from one stage to another. Students of economics, especially those from lesser developed countries, have found these stages rather confusing. For example, in an article by Itchon it was stated that "after entering

the 'take-off' stage in 1957, the (Philippine) economy immediately slipped back into the 'preconditions' stage--".[1]

Ruttan (1968, p.8) suggests that "in the agricultural development stage models, major policy interest focuses on the program instrument and measures that are required to move rapidly from Stage I (Static) through Stage II (Transitional) to Stage III (Dynamic)." These development stages indicate that within the agricultural sector, development economists like Lewis, Jorgenson, and Rostow, to name but a few, have emphasized the importance of biological innovations[2] and intensity of labor use to achieve a "yield take-off" during the transition from Stage I to Stage II, and that higher inputs of power in the form of mechanization are needed for the transition from Stage II to Stage III. Ruttan comments that such transitions imply the need for public social overhead investments (education, research, extension) and institutional modifications (tenure, credit, and market structure reforms) that would also lead to more capital intensive public infrastructure investment (communications, roads, dams). Also implied for a rapid transition from Stage I to Stage III is the need for policy to reduce the birth rate.

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[1]Gabriel Y. Itchon, "Philippines: Necessary Condition for 'Take-off'," Philippine Economic Journal 1 (First Semester, 1962): 30. As quoted in Hayami and Ruttan, 1985, p. 21.

[2]Biological Innovations include: improved high yielding varieties of seed, inorganic fertilizers, pesticides, fungicides and herbicides. Except herbicides, all others are considered to have the potential for unprecedented impacts on agricultural productivity.

Hayami and Ruttan define a Dual Economy Model as an approach which "emerged out of the attempt [for development scholars] to understand the relationship (or lack of relationship) between a lagging traditional sector and a growing modern sector within non-Western societies affected by economic, political and military intrusions of Western colonialism. [They also assume that] the static dual economy models emphasized the limited interaction between the traditional and modern sectors." (1985, p.22). There are several types of dualism in economic literature that are important for this study: "a) 'sociological dualism,' which stresses cultural differences leading to distinct 'Western' and 'non-Western' concepts of economic organization and rationality, b) an 'enclave dualism,' which emphasizes the perverse behavior of labor, capital, and product markets through which the modern industrial nations of the West interact with traditional societies in other parts of the world. [Hayami and Ruttan conclude that] both variants are important to an understanding of the assumptions about the structure and economic behavior of developing economies that have been incorporated into the modern dual economy model." (1985, p.22).

After critical review of both the growth stages and dual economy models and their utility as guides for directing policy makers' attempts to develop effective and appropriate policies to enhance economic and agricultural development, Ruttan (1968, p.19f) reaches the following five conclusions:

"First, we are faced with a choice between (a) carefully documented empirical generalizations associated with rudimentary

analytical equipment and (b) a carefully reasoned analytical system that has been subject to only the most casual of empirical tests. The promise of the dual economy models to replace the historical generalizations of the growth stage approaches with relevant, empirically testable, analytical relationships remains inadequately realized.

"Second, the more recent versions of both the growth stage and dual economy approaches have helped focus attention on the critical role of agriculture in the development process. Both the historical generalizations and the analytical models are consistent with the proposition that failure to achieve a technically progressive agriculture can dampen the whole process of economic growth. Since neither approach is yet able to contribute specific policy guidance as to how to achieve rapid productivity growth, this must be classified as a positive contribution to economic 'doctrine' rather than a new source of analytical power.

"Third, with further development the two sector models clearly have greater promise of yielding real analytical power than the growth stage approaches. To realize this potential, they will have to be elaborated to incorporate the detailed empirical knowledge regarding the magnitudes of variables and parameters for the specific economies for which the policy choices are relevant. The role of growth models is not to provide direct insight regarding policy decisions. Their appropriate role is to serve as an analytical framework for the empirical research needed to project the quantitative effects of the manipulation of alternative instrumental variables.

"Fourth, while major emphasis must be placed on the development of more complete analytical systems, one should not reject completely the possibility that a taxonomic scheme, using growth stage levels in its filing system, may remain of potential value to efforts to understand agricultural and economic processes. [He] would argue that typology based on particular 'ideal type' economic systems might have even greater value in attempts to understand the economic behavior of societies at different levels of technical and economic development. Such a typology could serve as a guide for the construction and application of appropriate analytical models for illustrating the consequences of specific policy sequences or alternatives for agricultural and general economic development within the historical context of a particular economy.

"Fifth, it seems apparent that models which attempt to achieve operational relevance for development policy will have to place less reliance on asymmetry in the production function for a device for generating differential growth rates in the several sectors. As a very minimum it will be necessary to provide for formal interaction between the agricultural and nonagricultural sectors through agricultural product markets, the markets for the manufactured inputs used in agricultural production, labor markets, the land markets, capital markets, and consumer goods markets."

## Rural Development:

## Meaning and Implementation in the Less Developed Countries

In most developing countries, rural development has in recent years been given a great deal of attention in national plans, in development literature, on political platforms and in the leading programs of most donors. (Hagan, 1977). This is because it is realized that all countries have programs of rural development not only because rural areas exist in all countries, but also because of its vital role in economic development. Consequently, the need for rural development seems to be most pressing in developing countries. This is due to the fact that it is here that the rural sector is appreciably larger than the urban centers, and it is here also that rural activities constitute the basis of national income generation. Therefore, any effort to modernize these countries requires the mobilization of the resources of the rural sector as a means to improve the standard of living of the rural population. Also to provide the main source of national income and foreign exchange earnings for use in the development of the urban and industrial sectors (Hagan, 1977).

The concept of agricultural development is usually seen by many researchers in pure economic terms as a process, through which farms become more productive. This "more productive" may either be an increase in farm production, or the production of output at a decreased cost. The idea of rural development is conceived by development economists as a step towards agricultural and economic development in less developed nations.

Hagan (1977) defines "Rural Development" as: a process through which a set of technical, social, cultural and institutional measures are implemented with and for the inhabitants of rural areas, with the aim of improving their socio-economic conditions in order to achieve harmony and balance on regional and national levels. The above definition suggests that all the ingredients of development should be brought into fruition in the rural areas.

The Moslin Conference, (1960) defines "Rural Development" as: the outcome of a series of quantitative and qualitative changes occurring among a given rural population and whose converging efforts indicate in time, a rise in the standard of living, and also favorable changes in other welfare or social indicators. Social indicators have emerged as a widely used and discussed concepts, although a consensus usage and definition have not yet developed. A social indicator may be a statistic of direct normative interest, which facilitates concise, comprehensive and balanced judgment about the conditions of major aspects of a society (U.S. Dept. of Health, Welfare and Education, 1969). Sawhill (1969) describes social indicators as quantitative measures of social conditions designed to guide choices at several levels of decision making. Social indicators include: per capita income, education, health services, etc. The Moshi Conference (1969) also suggests that "Rural Development calls for a set of projects and policies designed and coordinated so as to raise the whole pattern of living of a given rural population from a lower level to a markedly higher one."

The World Bank (1978) conceives "Rural Development" as: a strategy designed to improve upon the economic and social life of a specific group of people--the rural people. The World Bank suggests that this involves extending the benefits of development to the poorest among those who seek a livelihood in rural areas. The essence of this definition is, therefore, redress of rural poverty as the immediate objective; since as a group, the rural poor tend to be the most deprived of all sectors of the community. They have the least access to services such as health and education. In addition, they have very limited access to modern inputs for agricultural and economic development. FAO (1977) contends that unless special programs are developed to correct the existing bias about rural people, poverty will become self-reinforcing and will increase even if the economy grows.

Uma Lele (1976) defines rural development as : "improving living standard of the masses of low income population residing in rural areas and making the process of their development self-sustaining." Lele's definition has the following three elements:

I. Improving living standards of the subsistence population involves mobilization and allocation of resources in order to reach a welfare and productive service available to the subsistence rural sector.

II. Mass participation requires ensuring that resources are allocated to low-income regions and classes, and that the productive and social services actually reach the mass of the subsistence population.

III. Making the process self-sustaining requires the development of the appropriate skills and implementing capacity and the presence of institutions at the local, regional and national level to ensure the effective use of existing resources for continued development of the subsistence sector. Self-sustenance means "involving" as distinct from simply "reaching" the subsistence population through development programs.

Mosher (1976, p. 10f) provides a more comprehensive analysis of rural development because of the specific nature of the definition. In Mosher's view, rural development is "a trend in technologies, organizations, activities and values of society that: 1) increases the opportunities of all its rural people for vigorous health, broadening mental horizons, increasing knowledge and skills, and expanding opportunities to participate both constructively and pleasurably in the activities of their culture; 2) progressively provides more effective means for adjusting as peacefully as possible the conflicts and injustices that invariably arise as technological and other cultural changes take place; 3) maintains or progressively approaches an optimum balance between each rural person's opportunities for freely-chosen self expression and the corporate needs of the culture in which he lives; and 4) increasingly, brings all present and potential farm land into its most effective use--all without irreparable damage to the Earth's eco-system."

Rural Development theorists agree that the broad aim or goal of rural development is the improvement in the living conditions of rural population in areas of economic, social and political objectives.

Economic objectives include:

i) Raising the net per capita incomes of the rural population.

ii) Equitable distribution of incomes through the integration of the rural and urban economies.

iii) Creation of diversified employment opportunities within the rural economy.

Social objectives should include:

i) Improvement of social amenities such as health, education, housing and other infrastructural facilities like water supply and rural electrification.

Political objectives should include:

i) Improving the civic responsibilities of the rural folk.

ii) Assisting the rural population to adjust themselves to the changes in development process, and

iii) Encouragement of the spirit of self-reliance.

The objectives of rural development have been the focus of discussion of a lot of international seminars. The operational objectives which are common among these seminars:

i) raise productivity in the rural sector, of which agriculture may be the main activity in most developing countries at their initial stage of development;

ii) ensure equitable income distribution and provide employment opportunities;

iii) establish better social, economic and physical infrastructure in the rural areas and ensure that the majority of the rural people benefit from them;

iv) institutionalize political and administrative capability, including decisive participation of the rural people in decision-making and in community activities.

## Agricultural Development and Rural Development

In Nigeria there is a growing need for a rural development strategy in which agricultural improvement is increasingly realized to be an essential component. Since agriculture is the mainstay of the people of Nigeria, its development should play an important part in rural projects.

Any rural development program which is aimed at raising the levels of living of any community must first tackle the economic base of the community. So in Nigeria, of the many sectors, i.e. health, education, water, electricity, housing, roads, etc. that are considered in any comprehensive and integrated development program, the economy or the means of livelihood of the people must be given utmost priority.

Agricultural development, therefore, plays a very important role in rural development since in Nigeria and other developing countries, rural development programs are most vital to national development, as the bulk of the population comes from the agricultural sector (Hagan, 1977).

Agricultural development alone, however, cannot be equated to development. Although, the strategy of depending on progressive farmers for increased productivity has scored some successes, it has left behind millions of small holder farmers, tenants, and landless

peasants and their families (Lele, 1976). Agricultural development is then primarily technological development. Only rural development can promote social and institutional development (Mosher, 1976).

Rural development efforts, therefore, go beyond strictly agricultural development, they must encompass members of rural society who are directly engaged in other production, such as small merchants, local artisans, craftsmen (Amonoo, 1977). The planning and implementation of the non-agricultural production focused on community centers, drinking water supply, health clinics, promotion of small scale processing and servicing activities, women's extension programs, etc., require considerations substantially different from those in agricultural planning. It seems necessary, therefore, to allow greater scope for social choice and for local participation in the organization and delivery of these services.

Classifications of and Approaches to Rural Development: Rural Development has been classified in various alternative ways. This may be by the degree of integration, breadth of objectives, size of target population or by funding agencies.

Lele (1976), for example, classified Rural Development Programs into five categories to emphasize their diversity in design and implementation. These are:

i) Commodity Programs

ii) Functional Programs

iii) Regional Rural Development Progress

iv) Miscellaneous Category of Planned Programs

v) Spontaneous Efforts

A summary of the programs is presented below:

i) Commodity Programs. Development beyond subsistence agriculture in Africa was prompted by the relatively straight-forward objective of increasing production of export crops in the smallholder sector. They were financed by European Commercial companies, governments of former colonies, etc. Examples of these are cotton, cocoa and bast fiber in Ghana, Kenya; tea and the development of smallholder tobacco in Tanzania. In these export crop schemes, the agricultural services of extension, credit, inputs, marketing and processing were administered through project authorities or parastatal organizations. Development of export crops has also occurred through normal administrative efforts, through agricultural policies.

ii) Functional Programs. While regional programs involve a multifaceted approach to rural development, functional programs are undertaken to remove a single constraint that is considered to be particularly critical for getting rural development underway. Investment may be directed only to the construction of feeder roads, to the provision of agricultural credit (rural banks) or to improving the agricultural marketing network. Functional programs are easier to implement because they involve the development of a single major institutional structure.

iii) Regional Rural Development Programs. Regional Rural Development Programs are of two types:

a) integrated rural development programs undertaken mainly on the initiative of donor agencies and planned and administered by expatriates and

b) regional development programs undertaken with substantial initiative and participation by national governments.

These regional programs have been based on the assumption that a critical minimum effort is necessary to make a noticeable impact on the target population in a relatively short period. These integrated programs have, therefore, simultaneously provided a number of productive and social services, such as soil conservation measures, roads, agricultural extension, credit, marketing services, livestock development services, training, health clinics, water supply and nutrition education.

iv) Miscellaneous Category of Planned Programs. Rather than promoting the development of a specific commodity, a number of services related to the development of a specific subsector or region may be provided. This will in turn promote the development of commodity infrastructure to handle the designed rural development projects.

v) Spontaneous Efforts. In some areas, considerable development effort is underway through local initiative. These may include the building of school and health centers, the construction of feeder roads or the construction of markets. These spontaneous efforts may or may not receive any government support (Lele 1976).

Agriculture and the overall economy, rural society and society as a whole, are bound together by ties of interdependence. In certain circumstances, agricultural growth helps set in motion overall economic growth, but since such growth causes an increase in the number on non-agricultural jobs and the demand for foodstuffs, as well

as the production of agricultural implements, agriculture itself undergoes a transformation.

# CHAPTER 3

## A BRIEF PRESENTATION OF SOME CHARACTERISTICS OF THE NIGERIAN ECONOMY

This chapter deals briefly with the characteristics of the Nigerian economy which help to explain the various activities of peasant agriculture and its role in the development of this particular economy. These characteristics will show selected aspects of the incomes of the people which determine their consumption and saving propensities.

Agriculture is the main occupation of the people in Nigeria. Agriculture is by far the most important sector of the Nigerian economy. It accounts for about 60 percent of gross domestic product and employs approximately 80 percent of the labor force (Helleiner, 1966). Agriculture remains the mainstay of the Nigerian economy, and together with petroleum, experienced difficulties a few years ago. As a result, agriculture has stagnated and agricultural exports have declined very significantly. In the mid-1970's Nigeria ranked as a major exporter of cocoa, groundnuts, and palm products, and of these crops, only cocoa still earns foreign exchange. In 1983, for example, Nigeria imported approximately $2 billion worth of food stuffs, much of which could have been domestically produced (U.S. Department of State, 1984).

The Nigerian petroleum sector, which has been responsible for over 90 percent of export revenues, has suffered serious setbacks. Petroleum production declined from 2.1 million barrels per day in 1980

to slightly less than 1.3 million barrels per day in 1983; total oil revenue declined from $26 billion in 1980 to about $11 billion in 1983 (U.S. Department of State, 1984).

In 1981 and 1982, Nigerian imports increased despite the reverses in oil revenues. These high levels of imports were financed by depleting foreign exchange reserves from $10 billion in 1980 to $1.4 billion at the end of 1982, and also by delaying payment on trade debt. In 1983, imports fell drastically causing consumer goods shortages and the depression of local industries which depended heavily on imported materials. In an effort to deal with this worsening economic problem, the military government presented an austere 1984 budget which gave high priority to the development of agriculture, water resources, and steel and petroleum industries; to maintenance of the transport system; and to improvement of the country's power-generating capability and its telecommunications network (U.S. Department of State, 1984).

In the Nigerian economy, agricultural exports have provided the principal stimulus to economic growth. Primary exports are generally believed to serve as an important propulsive sector in the early stages of development.

The most important features of agriculture in Nigeria are its low technological level and the small scale of the majority of holdings according to Helleiner (1966). He asserts that most agricultural production in Nigeria takes place in "traditional" fashion with little or no mechanical or animal power on such small peasant-held farms.

## Traditional Agriculture

Traditional agriculture plays a significant role in the Nigerian economy. "Traditional" agriculture means nonmechanized small-scale farming according to Helleiner. Nigerian agriculture embraces production both for export and for domestic consumption. "Traditional" agriculture in Nigeria accounts for over 70 percent of total Nigerian food consumption. It is estimated that all of nonexported traditional agricultural production is for subsistence consumption, although there is considerable internal trade in domestically produced agricultural products. In the Nigerian economy there exists a considerable domestic exchange which takes place not only at the village level, but also on an intervillage, interarea, and even interregional basis (Helleiner, 1966).

Agriculture in Nigeria can be classified in different ways. The following chart (Figure 3.1) shows the make-up of the "traditional" and plantation agriculture. Both traditional and plantation agriculture generate output for export with the plantation production being totally for exports.[3]

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[3]One must be careful when presenting or classifying the Nigerian agricultural sector (Figure 3.1) because it does not represent any visible division of the agricultural sector.

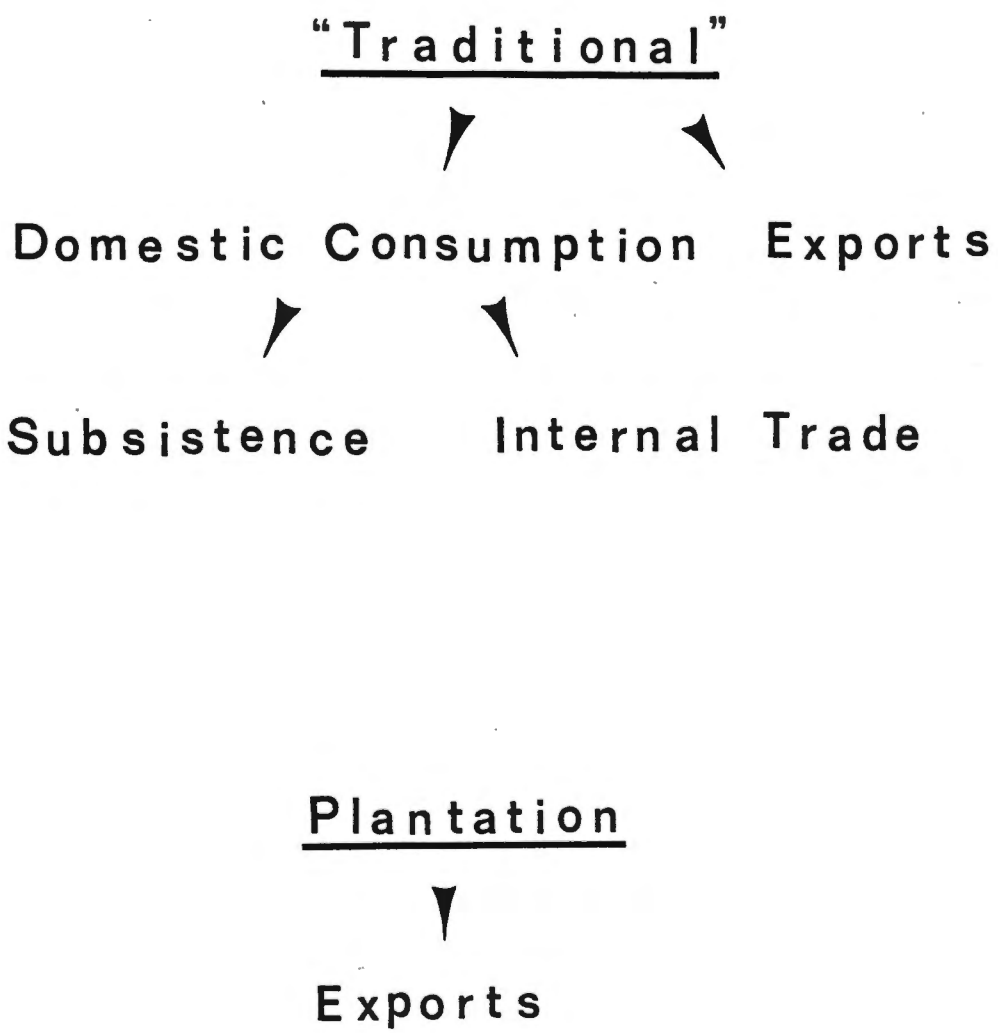



Figure 3.1

"Traditional" and Plantation Agriculture

Source: Helleiner, p. 45

Nigerian peasant farmers engage at one time or another in production for export, production for internal trade and production for subsistence. Helleiner suggests that all these types of production are actually taking place at the same time and on the same plot of land. For example, crops like groundnuts and palm oil, the three types of agricultural production export, internal trade, and subsistence are jointly pursued through the production of one crop (Helleiner, 1966).

Due to the nature of Nigerian agriculture, classification of farmers as either subsistence or export producers becomes difficult. The best one can do according to Helleiner is to arrange farmers on a spectrum according to the crops they produce. Therefore, every possible gradation which ranges from totally subsistence to totally export production can be observed. As a result, it is deceiving if not misleading to employ the concept of an "export sector" or a "subsistence sector" in the Nigerian economy. Helleiner suggests that the use of these concepts requires the division of individual peasants into two or more analytical parts, and it is not very helpful to discuss peasant farmers in terms of whether they are in exchange economy or not.

Helleiner gives another example of the frequent inapplicability of a simple analytical concept developed within other contexts to the "traditional" peasant economy by referring to Prest and Steward (1950-51) who said that they also found some difficulties in defining agriculture in Nigeria, due to the absence of the high degree of specialization to which they were accustomed in the United Kingdom.

To these individuals it was quite difficult to sort out (in the Nigerian case) the distributive and productive functions involved in a large part of agricultural activity. They talked about joint output of agriculture, transportation and distribution by asserting that in "traditional" agriculture, a farmer grows his crops (agriculture), carries them to the market, (transportation), and disposes of them (distribution). They also found it practically impossible to differentiate between the grower of grain, and the maker of farm tools like hoes, because they are often the same person. They finally concluded that any attempt to subdivide such functions is totally at variance with reality (Helleiner, 1966).

The most logical classification of the Nigerian peasant sector, if any, would not be based on principal export products, but on differences among non-exported agricultural crops. In Nigeria, as in many other developing economies, starchy staples - cereals, roots, and tubers - dominate indigenous diets because of their relatively low labor and land requirements. There exist significant differences in the make-up of these starchy samples, and this makes classification possible. An approach such as this would produce a broad division of the country into two main agricultural areas: the southern root economy and northern grain economy (Helleiner, 1966, and Johnson, 1958).

The southern part of Nigeria is comprised of the Eastern, Western, and Midwestern regions. This lies within the tropical rain forest belt which is primarily dominated by starchy tubers like cassava and yam, also maize, rice, other vegetables, but it also

includes citrus fruits, bananas, and plantains. Kola nuts and palm oil[4] are also native to this area. The northern part of Nigeria is characterized by higher and drier savannah land and specializes in grains such as guinea corn and millet, which may be supplemented by groundnuts. Beef cattle can also be found in this area. The absence of the cattle disease spreading tsetse-fly in this region, encourages the Fulani community to produce beef cattle and milk.

The Nigerian "traditional" agriculture can then be classified as in Figure 3.2. The Southern root economy is predominantly tree crops while the northern grain economy is mainly annuals. Nigeria is the biggest producer of natural rubber in the Continent of Africa, and ranks sixth in the world (Helleiner, 1966). It is estimated that Nigeria contributes about 3 percent of the world output of rubber. In the mid-70's, Nigeria's production of natural rubber increased from 20,900 tons to 72,100 tons with a net revenue of about ₦12.1 million ($24.4 million U.S.). Rubber is the most important export crop of Midwestern Nigeria which produces approximately 85 percent of Nigeria's total production, with the bulk of it from small rubber holdings in and around Benin City (FAO, 1966). After cocoa, groundnuts, and palm-kernels, natural rubber becomes Nigeria's fourth

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[4]The oil palm tree is a cash crop. Its importance cannot be overemphasized. Every part of this tree has value ranging from consumable items to building materials.

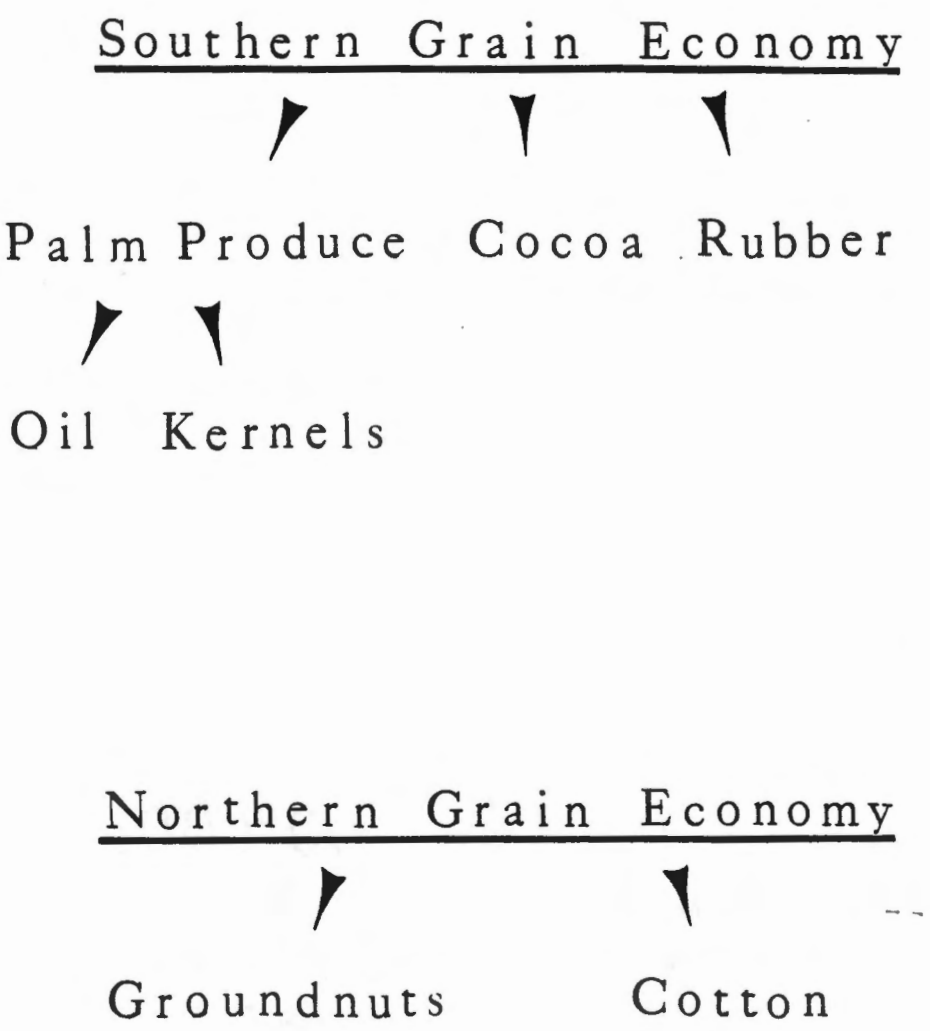



Figure 3.2

Nigerian "Traditional" Economy

Source: Helleiner, p. 48

most valuable agricultural export crop, and accounts for 6 percent of total agricultural earnings (FAO, 1966).

In the mid-60's, palm oil and palm-kernels commanded an export value of ₦21.0 million ($42 million U.S.). Nigeria's production of palm products has declined in recent years for two reasons: a) a reduction in the producer price from ₦53 per ton ($106 U.S.) for oil, to ₦32 per ton ($64 U.S.), and for palm kernels from ₦41 ($82 U.S.) to ₦26 ($52 U.S.) per ton, and b) high domestic consumption (FAO, 1966).

Cocoa has been the most important source of foreign exchange in the Nigerian agricultural sector and became the main source of income for most peasant farmers in the south in the early 1970's (Ekudana, 1973). It requires shady, high humidity, and an average rainfall. Cocoa is principally grown in the dry forest zone of Western Nigeria in the districts of Ibadan, Abeokuta, and Ondo (FAO, 1966).

Groundnut (Arcahis-hypogeo) is grown in the ecological conditions prevailing in the Sudan, sub-Sudan, and Northern Guinea. It commanded favorable export earnings in the 1950's and, as a result, it developed into the main cash crop over much of Northern Nigeria, and production was doubled. Groundnut is Nigeria's greatest single export in the form of nuts, oil, and cakes. In 1963 and 1964, it earned a net revenue of ₦46 million and ₦47 million ($92 million U.S. and $94 million U.S.) respectively. This accounted for a quarter of Nigeria's total export (FAO, 1966).

Cotton is grown mainly in the northwestern provinces of Northern Nigeria in the high plains of Housaland in the northeastern provinces of Bornu, Bauchi and Adamawa (FAO, 1966). Cotton has been grown by

smallholder farmers for many centuries mainly for local consumption such as the weaving of indigenous cloths. Commercialization of cotton did not begin until the first decade of the twentieth century as a result of the encouragement given to cotton farmers by the British Cotton Growing Association (BCGA). The reason for this encouragement was to supply the British market the raw material it needed to build its factories, and also make Britain independent of American cotton (Edudara, 1973).

Other cash crops for domestic consumption or export include benniseed, grown primarily in Benue province and also an important cash crop in the five areas, jute and jute substitute fibers. All regional governments encourage the production of fibers for sack making. Nigeria imported approximately 19 million jute bags in 1963 at a value well over ₦2.3 million ($4.6 million U.S.) and approximately 32 million bags at a cost of over ₦3.7 million ($7.4 million U.S.) in 1964. Tobacco is grown both in the northern and western regions of Nigeria. Production is carried out under the general guidance of the Nigerian Tobacco Company (NTC). NTC provides tobacco farmers with specialized extension service and also carries out field trials and experiments. Cashew nuts are also an important food or fiber source and its production is encouraged by various levels of government. Kola nuts, soy beans, citrus, coffee, and tea are also sources of income both on the local economy and in the export economy (FAO, 1966).

Table 3.1 presents yearly production of some specific crops in Nigeria from 1971 to 1973. These figures from the Nigerian Federal

Table 3.1 Nigerian Production of Crops 1971-1973 (In thousands of tons)

| | 1971 | 1972 | 1973 |
|---|---|---|---|
| Rice paddy | 471 | 468 | 515 |
| Millet | 2,688 | 2,584 | 2,350 |
| Sorghum | 3,140 | 3,499 | 2,966 |
| Corn | 931 | 1,120 | 1,287 |
| Pulses | 542 | 540 | 480 |
| Cassava | 12,396 | 12,700 | 13,000 |
| Yams | 16,104 | 16,257 | 16,800 |
| Cocoayams | 1,479 | 1,524 | 1,565 |
| Tobacco | 15 | 16 | 13 |
| Cotton | 38 | 49 | 30 |
| Cottonseed | 77 | 95 | 62 |
| Soybeans | 1 | 4 | 6 |
| Peanuts, in shell | 845 | 1,125 | 550 |
| Sesame seed | 3 | 6 | 5 |
| Bananas and plantains | 1,300 | 1,330 | 1,360 |
| Other fruits | 47 | 48 | 50 |
| Cocoa beans | 265 | 264 | 218 |
| Rubber | 62 | 54 | 68 |
| Kola nuts | 136 | 139 | 143 |
| Sugar, raw | 34 | 40 | 40 |
| Palm oil | 432 | 437 | 432 |
| Palm kernels | 307 | 295 | 259 |

Source: Nigerian Federal Office of Statistics, Annual Abstract of Statistics, 1974, and Economic Indicators, January, 1974.

Office of Statistics reflect substantial variations in production from year to year, notably in cotton and cotton seed, peanuts in the shell and rubber. There was a steady increase in soybean production during this period.

The Nigerian export economy seems quite different in character from that described in the well-known literature upon "dualism" in lesser developed countries according to Helleiner. He asserts that although the agricultural crops were being produced within a foreign-owned, foreign-managed, and self-contained enclave in the early part of this century, most of Nigeria's exports came from within the "traditional" world of the peasant. The separation of the "export sector" of the Nigerian economy from the subsistence and the internal exchange economy is not an easy one. This is because, as Table 3.1 shows, these crops serve as both export crops and locally consumed goods. For example, one of the reasons for the decline of palm oil exports was an increase in domestic consumption. This concept applies to nearly all the crops in Table 3.1. There is no single crop in Nigeria that is exclusively for export and this is why the export economy in Nigeria differs from traditional "dualism".

Helleiner and others maintain that when world trade first made its influence felt in Nigeria, it did so by reaching directly into the traditional peasant economy, and offered rewards to the peasant producers in the form of increased income. They also suggest that if Nigerian farmers are presented with opportunities for increased income, peasant farmers will respond by foregoing leisure and bringing more land under cultivation. Helleiner asserts that it was not

through foreign exploitation of mining and plantation enclaves, but rather through indigenous peasant response to economic incentives that Nigeria entered upon the world economy. He concludes that export production provided the stimulus for whatever economic change that occurred in this century, adding that other activities of a "traditional" nature such as handicrafts, home building, and others barely kept pace with population.

## Response to Economic Incentives

Researchers have identified some inconsistency among African peasants in their response to price incentives. Helleiner (1966) suggests that Nigerian peasants do respond to economic incentives both in the short-run and in the long-run, all other things being equal, especially when the response involves a change in acreage or in labor inputs. They do not hesitate to move along unchanged supply schedules. They do respond more readily to technological changes designed to raise yields with given factor input such as new cultivation methods, new seeds, fertilizer, etc. according to Helleiner.

Helleiner (1966) and Okurume (1973) argued that price responses in "traditional" peasant societies are unlike those with which economists from industrial economies are accustomed. They assert that some African peasants respond to price changes in an unpredictable fashion. Some African peasants tend not to respond at all, or do respond in what seems to be a perverse fashion i.e., when prices rise, less is produced, and when wages rise, fewer hours are worked. Jones

(1960) and Krishna (1963) agree with the above assertions of Helleiner and Okurume by stating that such behavior of African peasants have variously been attributed to a very high evaluation of leisure relative to material possessions of these farmers. Their behaviors are being guided by such attributes as the influence of tradition and culture on their living standards and methods of doing things, the absence of opportunities or incentives for individual initiative, and their imperfect knowledge or information with regards to markets and exchange facilities.

Krishna (1963) and Falcon (1964) state that peasants in India, Pakistan, and Malaya have clearly demonstrated considerable supply responses to price variations. African peasants, too, have been found to be far more "economic" than early writers suggested (Jones, 1960).

The history of the introduction and vast extension of cash cropping in Nigeria is one of peasant response to improved incentives, in particular, in relation to the terms of trade between leisure and goods. Nigerian peasants have demonstrated rapid and sophisticated response to much shorter-run price incentives. Nigerian cocoa producers are most commonly cited as examples of price-responsive peasants (Okurume, 1973, and Helleiner, 1976). Between the mid-1920's and the end of the 1930's plantings of cocoa trees in Nigeria were positively correlated with the import purchasing power (the real price) of a given weight of cocoa beans (Galletti, Baldwin, and Dina, 1956, and Stern, 1965). Similar results were found in Ghana where the conditions of production are very similar (Ady, 1949).

Okurume (1973) conducted a study titled "Impact of Agricultural exports on Domestic Food Supplies in a Peasant Economy, Foreign Trade and Subsistence Sector in Nigeria." He interviewed farmers in the western part of Nigeria and their answers to some of his questions were mixed. For example, farmers were asked what their response would be if they were confronted with a number of alternative hypothetical changes in the prices they received for their crops. His attention was restricted to cocoa on the one hand and food crops in general on the other. Okurume noted that about 90 percent of the farmers would like to expand cocoa production when the price of cocoa rises, apparently without stopping to consider what happens to prices of food crops in the meantime. He also asserts that a somewhat higher percentage would attempt to expand both food and cocoa production if the cocoa price increase appears to be permanent. Okurume concludes that a similar response pattern is observed in the case of an increase in the relative price of food. Here the results are even more ambiguous (Okurume, 1973). He suggests that a large number of the farmers would in this situation attempt to expand production on all fronts, rather than attempt to become more specialized. There are limitations, of course, to the usefulness of farmers' responses to hypothetical situations in their production of cocoa when cocoa price rises. First, the farmers may not be well-informed about some of the relevant variables in an actual situation. Their responses to hypothetical situations might tend to be more rational than to actual situations. Okurume in his final analysis draws draws up useful conclusions thus: Farmers are willing to substitute on the margin in

order to take advantage of a short-run profit opportunity, but they tend to guard against a long-term curtailment of food production. Looking at this from an economic point of view, Okurume noted that farmers producing at a very low level and whose productive factors are inelastic may, like some of his respondents, be unwilling to increase cocoa production at the expense of food production even when the relative profitability of cocoa increases. The fact that most farmers would want to increase their production of both cocoa and food crops even when only the price of cocoa rises, suggests that there is indeed a certain reluctance on the part of farmers to increase cocoa production at the expense of food production.

## Sector Characteristics:
## Extent of Agricultural Research

Nigeria's first agricultural research institute was established in Lagos in 1893. At that time research efforts were centered toward export crops such as a model farm for rubber propagation in 1899 and a cotton research farm in 1905. The British government financed these experimentation stations in an attempt to replace reliance on American cotton and Brazilian rubber. Following independence Nigeria established more research institutes that specialized in improving root crops and livestock as well as cocoa, oil palm, and control of trypanosomiasis. Currently eighteen agricultural research institutes have been established throughout the country including several in fisheries and forestry. The headquarters of the International Institute of Tropical Agriculture (IITA) is in Ibadam, Nigeria

(Mabbs-Zeno, 1980). The Nigerian constitutions of 1954 and 1963 passed decrees which called for the establishment of research agencies by both state and federal governments. These decrees went into force in 1973, and also gave the federal government power to take over state research stations when necessary. Some states encouraged Federal takeover in order to minimize the cost of operations. Since the establishment of this decree, federal institutions have conducted most basic agricultural research leaving the state institutions to focus on applications of this research (Mabbs-Zeno, 1980).

Budget allocations to agricultural research in Nigeria have declined since independence as a proportion of all government expenditures, but have risen with each national plan in absolute terms. This decline may be a result of reduced emphasis on agriculture in the current budget, but research as a proportion of agricultural allocation has also declined. Research funds are allocated to institutions and each specializes in one or more commodities. In Nigeria, the distribution of funds do not reflect the relative contribution of such crops in the economy, but they do, implicitly, reflect national goals for balancing agricultural production.

The Federal Government of Nigeria operates nine research institutes which specialize in other areas of research such as a new design for egg incubators, grain dryers, and a palm kernel cracking plant. These institutions also concentrate on research and development of post-harvest technologies for industrial processing of local foodstuff. Some Nigerian universities have close contact with

the research institutes, and some of these institutes are products of university programs. Private sector participation in agricultural research in Nigeria is minimal, and declining since the states have accepted a larger role in research and extension (Mabbs-Zeno, 1986).

## Extension Services

State governments are responsible for extending research results and other agricultural information to farmers. The National Accelerated Food Production Program maintains formal contacts among the various levels of government agencies. The World Bank cites this program for its major effort to make research institutions aware of the existing farm-level problems of technological adoption (Mabbs-Zeno, 1986). Extension services are inadequate because of a lack of support by government institutions and governments of all levels (local, state and federal). For example, the ministry of Agriculture made recommendations to "improve" sorghum varieties for the Funtua Project, but their research failed to account for socioeconomic variables.[5] More commonly, the extension services have failed because of insufficient staffing to deal with increased demand for services. By 1980, the ratio of extension workers to farmers in

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[5]Socioeconomic variables (per capita income, equitable distribution of income, employment, health, education, housing and other infrastructures). Variables as these indicate the level of economic well-being of a given community. In Nigeria, for example, research has failed to integrate these factors to enhance improvement for the farm people.

Nigeria was 1:2500 as compared with a 1:250 ratio in Kenya. Unlike other developed economies, specific development projects in Nigeria also provide their own extension service. For example, the operation Feed the Nation was largely a publicity campaign to improve the agricultural productivity and raise the status of the farm population, but its educational efforts also served an extension function. Also, the Integrated Agricultural Development Program used extension workers to promote packages of crops and mechanical technology with specified agricultural development projects. Farmer training institutes and primary schools also provide agricultural education as well. Public primary schools in rural areas have emphasized the teaching of different skills which will promote both farm and nonfarm employment, thereby reducing urban migration, according to Mabbs-Zeno.

## Mining and Manufacturing Sector

While "traditional" agriculture has provided the foundation of the country's internal economy and foreign trade, both industry and commerce, have shown remarkable vitality. Before the discovery of petroleum in Nigeria, manufacturing had been the fastest growing sector of the economy. In the sixties, manufacturing expanded at an average annual rate of 11 percent at constant prices, increasing its contribution to gross domestic product (GDP) at current factor costs from 4 percent in 1958 to 5.6 percent in 1963, and approximately 8.4 percent in 1967. Nigeria's huge population with a relatively low but even distribution of income, has enhanced industrialization by offering a sizable market for industrial goods. As a result of low

per capita income in Nigeria, temporary market situations can occur quickly when a number of manufacturers enter a field of production. The country's well-developed transportation network has also given Nigeria a headstart on industrialization, compared to some other developing countries (Nelson, McLaughlin, Moeller and Whitaker, 1972).

Manufacturing establishments have been successful in Nigeria since the early fifties. They processed raw materials such as soap which supplied soap to local markets in eastern Nigeria, sawmills in the western region processed timber for export, and cotton gins in the western and northern regions prepared Nigerian cotton for export. Also substantial industries serve domestic consumption with textiles, beer, tobacco, soap, soft drinks, vegetable oil, lumber and rubber products. Domestic industries were equally successful in exporting newsprint and also manufactured tractors that are used locally. Recently, the National Root Crops Production Company established numerous small factories for processing cassava. Gari[6] is the product of these factories and has a shelf life of one year or more, and this greatly increases the demand for this foodstuff. In 1979, for example, the quantity of gari supplied in Lagos City each day was

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[6]Gari is the single-most consumed agricultural product in Nigeria. It is a product of cassava which is a root crop. It can be consumed in different ways ranging from hot gari meal to a cold gari cereal.

estimated at 420 tons, most of which were produced by individual processors who supply less than one ton per year (Mabbs-Zeno, 1986).

There is a considerable degree of balance with respect to domestic and import processing in the modern manufacturing sector as shown in Table 3.2. This presents a clustering of industry in the southwest corner of Nigeria. Helleiner (1966) suggests that the bulk of Nigeria's manufacturing industries were established to serve local and regional markets whose demand for manufactured goods are enormous.

Manufacturing industries in Nigeria are classified into two categories: (1) primary domestic material versus import processing, and (2) local versus foreign markets. Table 3.2 lists these industries according of the above classifications, with some of them appearing in more than one place. These industries have been established by locally processing domestic materials, sometimes with the use of foreign inputs. Table 3.2 shows a far greater variety of manufacturing industries designed for domestic market than for the export economy, according to Helleiner and others.

## Mining

In the early 1960's mineral production did not play a significant role in the Nigerian economy. Mineral production accounted for only 1 percent of gross domestic product (GDP). With the discovery of petroleum, the importance of mining became visible in the economy. Petroleum alone accounted for over 9 percent of gross domestic product and by the mid-1970's, mining's share had risen to over 30 percent of the gross domestic product exceeding agriculture at current prices.

Table 3.2 The Character of Nigerian Manufacturing Industry

| Domestic Material Processing | | Import Processing | |
|---|---|---|---|
| Local Market | Foreign Market | Local Market | Foreign Market |
| Beer* | Tin smelting | Flour | Biscuits* |
| Soft drinks* | Oil refining | Radios | Shoes |
| Cement and cement products | Fruit canning* | Milk and ice cream | |
| Textiles | Oil seed crushing* groundnut, palm kernel, and palm oil* | Steel products, etc. | |
| Oil refining* | | Metal windows | |
| Sugar | | Biscuits and bakery products | |
| Meat processing | Rubber processing | Vehicle assembly | |
| Macaroni | Tanning* | Bicycle assembly | |
| Butter and cheese | Sawmilling, plywood, etc.* | Sweets and confectionary | |
| Furniture | Cocoa processing | Gramaphone records | |
| Fruit canning* | | Aluminum sheets, etc. | |
| Boat building | | Pharmaceuticals | |
| Margarine and soap | | Rubber tires and accessories | |
| Oil seed crushing: groundnut and palm oil* | | Enamelware | |
| Tanning* | | Industrial gas - oxyten and acetylene | |
| Sawmilling* | | Oil blending | |
| Matches | | Plastic shoes* | |
| Gari processing | | Steel drums and containers | |
| Thread | | Printing, stationery and publishing | |
| Tire retreading | | Sewing machine assembly | |
| Jute bags | | Singlets | |
| Cigarettes* | | Soft drinks* | |
| Glass bottles | | Tarpaulins | |
| Mattresses | | Umbrella assembly | |
| Building materials | | Beer* | |
| Shoes - rubber | | Toilet paper | |
| Carbon dioxide and dry ice | | Cigarettes* | |
| Tiles and concrete | | Paints | |
| Foam rubber | | Building materials* | |
| | | Bitumen | |
| | | Plastics | |
| | | Perfumes and cosmetics | |
| | | Car battery assembly | |

*Industries listed under more than one heading.

Source: Adapted from Gerald K. Helleiner, Peasant Agriculture, Government, and Economic Growth in Nigeria, Homewood, Illinois, 1966.

In 1977-78, estimates showed that the mining sector had declined because of a substantial decline in petroleum production due to government pricing policies and the subsequent decline in foreign purchases (Nelson, 1984).

As a means of controlling the nation's wealth, the Nigerian constitution in 1979 gave the Federal Government exclusive rights to ownership and control of all domestic minerals, mineral oils, and natural gas within the land area, territorial waters, and an exclusive economic zone in Nigeria. Nelson (1984) maintains that in the case of solid minerals, the Ministry of Mines and Power has the responsibility for issuing prospecting rights and authorizes exploitation, retention and disposal of these minerals. Similarly the Nigerian National Petroleum Corporation (NNPC) has similar responsibility for petroleum and natural gas.

## Petroleum and Natural Gas

Petroleum production was the largest single economic activity in Nigeria in 1981 in terms of value of production. Petroleum oil was first exported in 1958, one year after its commercial production. Petroleum's foreign exchange earnings soon exceeded those from cocoa which was then the leading export commodity. Nelson (1984) contends that earnings from petroleum rose steadily, and in the early 1970's was responsible for over four-fifths of all merchandise exports, and in subsequent years accounted for over 90 percent of the total exports (see Table 3.3). Table 3.3 also shows a consistent increase in both volume and value of petroleum production from 1965 to 1979, except for

Table 3.3 Principal Commodity exports by Volume and Value, Selected Years, 1965-1979 (in thousands of tons and millions of naira)[1]

| Commodity | 1965 | 1969 | 1974 | 1976 | 1977 | 1978 | 1979[2] |
|---|---|---|---|---|---|---|---|
| Quantity | | | | | | | |
| Cocoa | 259.1 | 173.7 | 194.0 | 228.0 | 167.5 | 191.7 | 217.8 |
| Palm kernels | 422.7 | 178.8 | 185.6 | 272.0 | 186.0 | 56.8 | 50.9 |
| Palm oil | 152.4 | 8.1 | -- | 3.3 | 0 | 3.2 | 0 |
| Groundnuts | 520.2 | 520.2 | 30.3 | 1.6 | 0 | 0 | 0.8 |
| Groundnut oil | 92.5 | 100.6 | 23.5 | 0 | 0 | 0 | 0 |
| Groundnut cake | 114.8 | 170.7 | 30.5 | 28.7 | 8.4 | 0 | 0 |
| Rubber | 69.0 | 57.3 | 61.3 | 44.3 | 27.7 | 30.9 | 34.2 |
| Cotton | 13.7 | 14.0 | 0 | 0 | 9.2 | 0 | 0 |
| Hides and skins | 5.8 | 4.9 | 5.3 | 2.1 | 2.0 | 1.1 | 0.7 |
| Timber (logs and lumber)[3] | 528.8 | 313.0 | 289.7 | 28.7 | 11.9 | -- | -- |
| Petroleum[4] | 13.2 | 27.0 | 96.4 | 95.9 | 112.2 | 82.9 | 110.3 |
| Tin (metal) | 11.0 | 10.0 | 5.8 | 3.4 | 1.7 | 1.3 | 1.5 |
| Value | | | | | | | |
| Cocoa | 85.4 | 105.2 | 159.0 | 218.9 | 311.1 | 379.9 | 432.2 |
| Palm kernels | 53.1 | 19.5 | 43.7 | 27.2 | 32.6 | 12.7 | 11.8 |
| Palm oil | 27.2 | 0.9 | -- | 0.5 | 0 | 0 | 0 |
| Groundnuts | 75.6 | 71.6 | 6.8 | 0.2 | 0 | 0 | 0 |
| Groundnut oil | 20.0 | 21.8 | 1.4 | 0 | 0 | 0 | 0 |
| Groundnut cake | 10.5 | 10.0 | 4.8 | 3.4 | 1.0 | 0 | 0 |
| Rubber | 22.0 | 19.3 | 33.2 | 14.3 | 11.1 | 12.6 | 13.0 |
| Cotton | 6.6 | 6.7 | 0 | 0 | 10.1 | 4.2 | 2.8 |
| Hides and skins | 5.6 | 5.5 | 10.6 | 6.8 | 5.7 | 3.8 | 2.6 |
| Timber (logs and lumber) | 12.5 | 8.2 | 11.2[5] | 0.9[5] | 0.5[5] | 0.1[5] | -- |
| Petroleum | 136.2 | 272.0 | 5.4[5] | 6.3[5] | 7.1[5] | 5.4[5] | 10.2 |
| Tin (metal) | 29.8 | 27.8 | 26.4 | 15.5 | 13.3 | 9.4 | 10.8 |

--Neglible

0 - none

[1]For value of the naira - see Glossary.

[2]Provisional

[3]In thousand cubic meters

[4]In million tons

[5]In billion naira.

Source: Based on information from Nigeria, Federal Office of Statistics, Annual Abstract of Statistics, 1969, Lagos, n.d., pp. 91-93; Central Bank of Nigeria, Annual Report and Statement of Accounts for the Year Ended 31st December, 1976, n.p., n.d., p. 75; and Central Bank of Nigeria, Annual Report and Statement of Accounts for the Year Ending 31st December, 1979, n.p., n.d., p.73.

a decrease in 1978. Oil revenue became the major source of government receipts, accounting for between 70-80 percent a year in FY 1974-75, and FY 1979-80 according to Nelson (1984).

Oil revenue became the principal source of funding for Nigeria's development plans (see table 3.4). It shows Federal Government Recurrent Revenue from fiscal 1970-71 to fiscal 1979-80, with oil revenue steadily increasing over the years and with a lead over other sectors. Percentage-wise, it increased all these years except for a slight decline in 1978-79. This decline can be attributed in part to some new discoveries in Alaska, Mexico, and the North Sea. Nelson also suggests that until the early 1970's, foreign oil companies operated in Nigeria with some restraints. Petroleum production was controlled by a joint effort of Shell and the British Petroleum Corporation (Shell BP), which were the first to discover Nigerian oil in commercial quantity. At the end of the Nigerian Civil War in 1970, the Federal Government of Nigeria indigenized most industries in Nigeria, including the petroleum industry. Nelson concludes that as a principal agency, it established the Nigerian National Oil Corporation (NNOC) in 1971, and also became a member of the Organization of Petroleum Exporting Countries (OPEC). In 1973, the Nigerian government made a similar move to secure the United States owned companies like Gulf and Mobil Oil Companies. This resulted in the government acquisition of 35 percent holding in BP's separate Nigerian marketing organization. Nigeria reached agreements with oil producers stipulating that each shareholder was entitled to the amount of production proportional to his equity holdings. The producers were

Table 3.4 Federal Government Recurrent Revenue, Selected Fiscal Years 1970-71 to 1979-80 (in millions of naira and percent)[1]

| | Actual | | | | Revised | Estimated Final |
|---|---|---|---|---|---|---|
| | 1970-71 | 1973-74 | 1975-76 | 1977-78 | 1978-79 | 1979-80 |
| Oil Revenue | | | | | | |
| Petroleum profits tax | 133 | 1,127 | 3,240 | 4,404 | 3,034 | 8,009 |
| Mining rents and royalties | 64 | 334 | 1,372 | 1,561 | 1,251 | 3,352 |
| Subtotal | 197 | 1,461 | 4,612 | 5,965 | 4,285 | 11,362 |
| Other Revenue | | | | | | |
| Import duties | 231 | 300 | 705 | 1,059 | 980 | 875 |
| Excise duties | 132 | 202 | 122 | 179 | 252 | 543 |
| Company income and other taxes | 106 | 95 | 184 | 555 | 515 | 563 |
| Non-tax revenue | 90 | 113 | 210 | 312 | 330 | 463 |
| Subtotal | 559 | 710 | 1,221 | 2,105 | 2,077 | 2,444 |
| TOTAL CURRENT REVENUE | 756 | 2,171 | 5,833 | 8,070 | 6,362 | 13,806 |
| Statutory Allocation to State Governments | (246) | (324) | (963) | (1,796) | (1,637) | (3,657) |
| Stuatory Allocation to Local Governments | 0 | 0 | 0 | 0 | (150) | (344) |
| Federal Government Retained Revenue | (510) | (1,847) | (4,870) | (6,274) | (4,575) | (9,805) |
| Percent | | | | | | |
| Oil Revenue | | | | | | |
| Petroleum profits tax | 17.6 | 51.9 | 55.5 | 54.6 | 47.7 | 58.0 |
| Mining rents and royalties | 8.5 | 15.4 | 23.5 | 19.3 | 19.7 | 24.3 |
| Subtotal[2] | 26.1 | 67.3 | 79.1 | 73.9 | 67.4 | 82.3 |
| Non-oil Revenue | | | | | | |
| Import duties | 30.6 | 13.8 | 12.1 | 13.1 | 15.4 | 6.4 |
| Excise duties | 17.5 | 9.3 | 2.1 | 2.2 | 4.0 | 3.9 |
| Company income and other taxes | 14.0 | 4.4 | 3.1 | 6.9 | 8.1 | 4.1 |
| Non-tax revenue | 11.9 | 5.2 | 3.6 | 3.9 | 5.2 | 3.4 |
| Subtotal | 73.9 | 32.7 | 20.9 | 26.1 | 32.6 | 17.7 |
| TOTAL CURRENT REVENUE | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Statutory Allocations to State and Local Governments | (32.5) | (14.9) | (16.5) | (22.3) | (28.1) | (29.0) |
| Federal Government Retained Revenue | (67.5) | (85.1) | (83.5) | (77.7) | (71.9) | (71.0) |

0 - None

[1] One Naira equals two U.S. dollars.

[2] Totals may not add because of rounding.

Source: Same as for Table 3.3

equally required to pay taxes and royalties on their share of production, and by the end of 1979, Nigeria had increased its holdings to about 60 percent in all foreign oil activities, thereby reducing the amount of production retained by these companies.

A considerable quantity of natural gas is found in the delta regions of the southern part of Nigeria. It is usually found associated with petroleum, but sometimes in separate deposits. Its importance in Nigeria is relatively low due to insufficient demand, largely due the use of coal and wood as sources of fuel in most private homes. Nelson (1984) estimated that 53 to 54 million cubic meters of the associated gas is dissipated daily by burning. Government efforts to construct the largest liquefied natural gas line (LNG) plants in the country at Bonny were not successful due to the investment of limited resources on the part of the government according to Wells (1974).

## Coal Mining

Coal was the most important mining activity in the early part of this century. It was discovered in Enugu (eastern region) area in 1909. Production started in 1915 by a state-owned agency, but by 1950, production activity became the responsibility of the newly created Nigerian Coal Corporation (NCC). Nelson (1984) asserts that coal production reached its highest level of 925,000 tons in 1957, but with the development of diesel engines for the railroads, demand for this important mineral declined to 650,000 tons a year until 1967 when the Nigerian Civil War forced cessation of its mining. Other minerals

found in Nigeria include gold, lead, and zinc ores usually associated with silver, iron ores, limestone deposits, tin, and columbite.

## Nigerian Export Economy

The Nigerian export sector characteristics are common to those of other countries at a similar stage of economic development. Its exports averaged $3 million dollars a year in the first decade of this century. Considerable improvements were made in this sector, and by the end of the sixth decade, the value of exports was approximately $135 million dollars a year with an annual growth rate of 7.8 percent in the first half of the century. Nigeria exports agricultural commodities such as cocoa, groundnuts, rubber, palm oil and palm kernels according to Wells (1974).

Wells (1974) says that the growth of the export sector was marked by fluctuations in the prices and volumes of the major export commodities which reflect the vicissitudes of wars and depressions in the world during the 1930's and 1940's. Wells maintains that Nigerian export volumes fluctuated, but less than the fluctuations in prices. He concludes that by the mid-century, exports accounted for a significant amount of total economic activity (17 percent of the gross domestic product).

In the 1950's, there was a growing demand for consumer goods, particularly in the expanding urban centers. This encouraged heavy imports of capital equipment and raw and intermediate materials for industrial and consumer uses, according to Nelson. The discovery of petroleum changed the situation very drastically. By the mid-1960's,

petroleum became the major source of export receipts resulting in trade surpluses.

As the drive toward industrialization progressed, the major bulk of imports became capital goods, raw materials and intermediate goods for domestic industries. These goods accounted for over 70 percent of the imports between 1974 and 1979. Although machinery and transport equipment constituted the largest single category, consumer goods, especially non-durable items, accounted for over 30 percent. Foodstuffs imports became important in the 1970's due to the stagnant nature of agriculture, which did not keep pace with growing population (Nelson, 1984).

Nigeria has a trading link with many countries and territories. Nigeria was a British colony and conventionally, Britain has been its chief trading partner. Britain remains the largest purchaser of Nigerian non-petroleum exports, and the largest supplier of Nigerian imports according to Nelson. Nelson suggests that the most obvious change in the export sector in Nigeria was the dramatic rise in oil exports to the United States which increased from 29 percent in 1974 to 47 percent in 1979. Nigeria also trades with the European Economic Community (EEC - also known as the Common Market). The EEC purchase of Nigerian oil dropped from 50 percent in 1974 to about 35 percent in 1979. The United States imports between 11 percent to 12 percent of Nigeria's non-petroleum goods. Both the Federal Republic of Germany (West Germany) and the Netherlands offer markets for Nigeria's goods. France's trade with Nigeria has increased since 1980s (Nelson, 1972). Nigeria trades with other African states, especially members of the

Economic Community of West Africa (ECOWAS). Nigeria has established trading relations with the East European Communist countries, but has kept this relatively low. Nelson concluded that no oil was exported to the eastern block in the late 1970's, but exports like cocoa and rubber were in shopping lists, and that these accounted for only 4 percent of Nigeria's total non-petroleum exports.

## A Brief Summary of Nigerian Agricultural Development Strategies

Since the founding of Nigeria in the early part of this century, agriculture has basically solved the problem of feeding the nation and has also provided the basis for industrialization. In the 1940's and 1950's when Nigeria was under British rule, the British government engaged on a series of agricultural reforms or strategies to increase production of specific crops like cocoa, cotton, rubber and palm oil. Although plantations were established in certain areas, peasant farmers provided the bulk of agricultural output. Peasant farmers were not only responsible for improving agricultural production, they were also responsible for the development of the rural economy. Peasant farmers lacked material incentives which would increase production. As a result many peasants had low yields, placing them in poverty.

### Post-Colonial Period

The British government's attempts to increase the production of these crops was basically aimed at supplying raw materials to the British factories. The post-colonial leadership in Nigeria (Nigerian independence was October 1st 1960) had realized that the prospects for

rapid and broad based economic development and growth in Nigeria depended mainly on the ability to increase agricultural production, improvement of rural life and changing the farm marketing systems. Broad changes in rural economic policy took place in many stages, starting with the First National Development Plan 1962-68. This plan emphasized the exploitation of regional crop economies. At the end of the Nigerian Civil War in 1970, the country was expanding in all economic sectors. This situation was responsible for the promulgation of the Second National Development Plan 1970-74. This plan was primarily a sectoral goal and was easily translated into national objectives. The end of this plan did not increase agricultural production but resulted in mass importation of foodstuffs. For example, in 1974-75, food imports reached a record high for the entire history of the nation (See Table 3.5).

As a result of the increased production in oil and the removal of the foreign exchange constraint, Idachaba contends that the emphasis on self-reliance receded in the Third National Development Plan (1975-80). The increased production of oil made the food situation become worse as people left the rural areas for urban centers for job opportunities. Consequently, the mass influx of people to urban centers imposed an increasing strain on the provision of services such as water, electricity, transportation and housing. As a means of alleviating the above economic situation in Nigeria, the Operation Feed the Nation (O.F.N.) program was launched in April 1976. This program aimed at total mobilization of the country's internal resources. The program ended when Obasango's regime ended in 1979.

Table 3.5 Selected Food Imports (tons) 1972-79

| Item | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 |
|---|---|---|---|---|---|---|---|---|
| CEREALS | | | | | | | | |
| Wheat | 11,680 | 108,847 | 318,269 | 4,073,096 | 733,133 | 719,665 | 878,853 | 804,846 |
| Rice | 232 | 266,154 | 4,805 | 6,652 | 45,377 | 413,272 | 563,848 | 567,899 |
| Maize | 374 | 72 | 2,440 | 2,211 | 9,861 | 36,813 | 46,975 | 40,480 |
| MEAT | | | | | | | | |
| Fresh, Chilled or Frozen | 548 | 17 | 445 | 3,710 | 13,764 | 22,326 | 31,781 | 2,124 |
| Milk | 3,056 | 62,708 | 67,299 | 85,924 | 99,540 | 148,463 | 132,012 | 118,652 |
| Butter & Cheese | 30 | 570 | 862 | 1,532 | 2,341 | 2,344 | 14,402 | 1,374 |
| SEA FOODS | | | | | | | | |
| Fresh & simply preserved | 181 | 4,561 | 6,641 | 17,291 | 3,770 | 31,256 | 4,425 | 17,616 |
| Canned or prepared | 282 | 8,167 | 8,060 | 22,706 | 47,760 | 63,824 | 110,818 | 50,683 |

Source: Federal Office of Statistics, Nigeria Trade Summary (Various Issues)

The launching of the Operation Feed the Nation Program in 1976 emphasized total mobilization of the country's internal resources for accelerated agricultural production. Idachaba and others suggested that this was the first time in the history of the country that "powers that be" had seen the need for increased agricultural productivity. To prepare for this massive agricultural and economic development activity, the Nigerian government created supraministerial institutions to supervise and coordinate multi-sectoral activities. The program was also designed to improve on the introduction of a system of centralized procurement and massive importation of agricultural inputs like fertilizers, day-old chickens and tractors (Idachaba, 1984). Not only did the introduction of these agricultural inputs increase agricultural production but they also provided peasant farmers with the materials needed to increase their family or per capita income.

The Green Revolution

The main activities of the Green Revolution together with certain achievements have been enumerated earlier in this paper. One of the major achievements of the program was the enormous increases in the supply of inputs to farmers such as 1 million tons of fertilizers in 1980, large quantities of improved seeds, tractors and large amounts of insecticides and herbicides (see Table 3.6). All these elements of biological technology have the potential for increasing yields significantly. The Green Revolution more than any other program made a very significant impact in Nigeria in terms of new improved agricultural inputs (fertilizer, insecticide, fungicide and tractors).

Table 3.6 Fertilizer Expenditures Nigeria, 1980-82 (In millions of ₦)

| | 1980 | 1981 | 1982 |
|---|---|---|---|
| Importation of fertilizer | 115.9 | 39.2 | 79.4 |
| Transportation costs | 30.1 | 60.0 | 33.6 |
| Clearing of trees and grasses | 5.3 | 9.3 | 5.7 |
| Transportation costs as fraction of value of imported fertilizer (%) | 25.97 | 53.06 | 42.32 |
| Transport costs per ton (N) | 56.58 | 59.06 | 64.46 |

Source: Derived from data in Ogunfowora, O. etc., Nigeria Fertilizer Import Loan Project, Federal Ministry of Agricultural, May, 1983.

It brought about increased agricultural production in crops such as rice, maize, cassava, guinea corn and other cash crops. Farmers response to the use of these inputs has resulted in increased production in such specific crops according to FAO. In certain areas of the country for example, the River Basin and the Rural Development Authorities areas, it has been reported that the adoption of the plant biological technology has been accompanied by a 30-50 percent increase in crop yields. Also under the special Rice Production Program, 75,000 tons of milled rice was produced in 1981 and well over 200,000 tons of rice paddy was harvested in 1982. This significant increase in rice yields exposed the weakness of the agricultural marketing system and created severe strains on both farmers and governments who did not make adequate preparation for the increased yields according to Mabbs-Zeno.

The "green revolution" was also successful due to the introduction of irrigation projects which required the construction of dams especially in the River Basin areas. In 1982, a total of 79,000 hectares (ha) was cultivated under irrigation and the dams increased the availability of hydroelectric power and improved the water supply for local residents. This also made fresh water fishing possible to the local community and improved their protein consumption. Also progress was made in the construction of 3 fishing terminals at Borokiri (River State), Igbokoda (Ondo State) and Ebughu (Cross River State) and also in the provision and distribution of over 30 fishing trawlers and large quantities of other fishing gear, to supplement Nigeria's fishing industry, according to the green revolution reports.

As a result of this series of programs, the country also benefited from the extension of accelerated development areas (ADA) and Integrated Agricultural Development Projects (IADP) which expanded from 7 to 11 states of the Federation. These programs also contributed to the development of rural infrastructure of feeder roads (about 5,393 kms; 1,238 building as of December 1981), boreholes, service centers, as well as increasing farm incomes and agricultural production in certain cases, rice and rice paddy according to Idachaba and the FAO reports. There was also an increase by the Federal Government of Nigeria of its capital allocation to the agricultural sector from 6 to 15 percent of the total budget during the period covering the "green revolution".

The "green revolution" program covered both pricing and marketing and focused on reducing the government's role in production and distribution of agricultural products, improving the marketing system and linking peasant farmers and consumers more efficiently. The government also increased all agricultural producer prices significantly in order to encourage farmers to increase their production.

Apart from the supply of all types of agricultural inputs to farmers at a heavily subsidized rate, including land clearing, the Nigerian Agricultural and Cooperative Bank (NACB) was allowed to borrow ₦100 million ($200 million US) from the domestic money market to expand its loanable portfolio in order to enhance mass participation. In addition, a sum of ₦2.8 million ($5.7 million US) was made available to the area covered by each of the 11 River Basin

Authorities for lending to small-scale farmers, groups and cooperatives. These amounted to a total of ₦55 million ($110 million US).

# CHAPTER 4

# AGRICULTURAL DEVELOPMENT STRATEGY AND POLICY IN NIGERIA

## Past Agricultural Strategy

The true significance of the economic history of Nigeria during the early part of this century lies in the growth of the cash economy, which had its foundation in the development of agricultural export products (Ekundare, 1973). The Nigerian agricultural system went through a number of transitional stages with peasant participation. Nigerian farmers are less dependent on government assistance than those of other developing or even developed countries (Nelson, McLaughlin, Marvin, Moeller and Whitaker, 1972).

The nation's dynamic growth has in the past come largely from the initiative of the peasant farmers, whose earnings through agricultural and other production activities have in fact financed the Nigerian economic growth. The farmers in turn benefited from government efforts such as the construction of roads and railways and also the search by industrial nations and their traders for low-cost raw materials.

At the end of World War II the main thrust of the Nigerian government assistance to agriculture went into research and education. Subsequently, in an attempt to put agricultural improvements into practice, the government adopted three different approaches. Two were attempts to change the basic structure of the organization of agriculture while the third sought to promote the use of new

technology within the existing structure. The first involved the establishment of large scale plantations which use the latest available technology and would be extensively mechanized. The second was also large scale but was on the basis of cooperative organization of farmers who retained land ownership while making a dramatic change in their life style. The third approach maintained the traditional relation of the farmer to the land but endeavored to enlighten the farmers about new technology and facilitate their adoption of it. This last was the most favored and focused on the use of demonstrations, incentive schemes, subsidized input supplies and improved credit facilities (Nelson, et al.).

The establishment of plantations oriented toward export and commercial production would clearly be following the dual economy approach to agriculture. This policy bore the earmarks of the colonial period and had an almost exclusive focus on product and the benefit to the national economy with little concern for the impact on the family and longer term future for the rural community. This had immediate appeal because it would provide employment opportunities for the growing numbers of the unemployed including those with very limited skills.

In the period between 1950s and 1960s, farm settlement schemes were the means for increasing agricultural production, providing employment opportunities to school drop-outs and other unemployed persons. Farm settlement projects also served as demonstration centers for the surrounding rural areas. The farm settlement schemes were not the answer to the Nigerian agricultural problems. In the

mid-1960s the hoped-for demonstration effects of the settlements did not materialize. This was because the acreage allotments had been too ambitious, and the extensive farming methods being used did not produce better crops or higher yields than those of smallholder peasants who did not participate in the farm settlement schemes (Nelson et al.).

The Federal Government of Nigeria, in 1964, requested the Food and Agricultural Organization of the United Nations (FAO) to: (a) work out and recommend the policies which should be followed if the agricultural sector (including forestry and fisheries) were to make an effective contribution to the general development of the economy, and (b) to recommend a series of policies, measures, and projects in specific sectors of the agricultural economy which would best contribute to implementation of these broad policies. In light of this request, the FAO (1956) made the following suggestions or recommendations:

1. Sound policies for agriculture must look far more than six years ahead.
2. A realistic program for agriculture can be formulated only within a development framework for the whole economy.
3. Any advice given by an outside body must be fitted into and be consistent with the economic, social and cultural objectives and values of the people of Nigeria.

In Nigeria, there is a need for a strategy within which a six-year plan for agriculture and all other sectors of the economy will fall into place and be seen in perspective. This involves

structural transformation (Johnston, 1970). This transformation may include increases in productivity and incomes in the various sectors of the Nigerian economy which may bring about a change in both consumer demand and the composition of output. Hagan (1971) suggests that structural transformation is synonymous with "Rural Development" which is a process that brings about changes in technical, social, cultural and institutional measures of the rural population. Nigeria also needs an economic and agricultural development strategy which incorporates the interactions of the various sectors of the economy and such strategy should be consistent with the social values of the community. Since such a strategic framework on agricultural policies and measures was not available in Nigeria, the FAO had to formulate one. In this framework, the FAO provided both a long-term perspective and an integrated framework. This growth model by the FAO was not a forecast, according to FAO, but a possible course along which the Nigerian economy and its agriculture could develop if the problems were to be solved, and the objectives Nigeria had set for itself realized. At the same time, the growth model was a consistent framework in which inter-sectorial relationships and interactions had been taken into account and measured.

The Nigerian Growth Model, according to FAO (1966), involved a perspective up to 1980. It was divided into three periods, namely the balance of the then present plan period (1968-74 and 1974-80). In this model, neither a sound agricultural policy, nor a sound selection of projects which would contribute most to these policies, was possible without a relatively long-term perspective. This is

particularly true in a country like Nigeria where tree crops, whose economic life may extend over 40 years, hold such a prominent part in the export economy. Similarly, in Nigeria the availability of under-utilized land and water, and the existence of under-developed, even under-populated zones, together with heavy population pressures, called for basic long-term changes in the patterns and locations of resource use and investment. The FAO, finally, recommended that the Nigerian Government should work out for itself a Growth Model for a period of 15-20 years ahead, where by the elements or variables in economic growth and their interactions upon one another should be clearly specified.

The general investment strategy that envisaged the execution of these various National Development plans called for all sectors to be involved in economic development. Thus, for economic projects and social development programs undertaken by the public sector, emphasis needed to be laid on those policy instruments which were capable of generating sufficient funds through their economic merit, or which, with public assistance, could attract domestic and external financial assistance.

In light of the crippling effects of the federal government's poor capital receipts over time, the Federal government of Nigeria decided to adopt a more effective approach aimed at ensuring the generation of adequate investment funds for the execution of its plan program. In this connection, the Federal Government of Nigeria not only worked towards realizing healthy budget surpluses, but investigated avenues of increasing investment from private sources in

public economic projects, and income yielding infrastructural development programs.

The description above does not fit the "dual economy" situation described by Jorgenson. While there are differences between the various regions of the country. There is no foreign enclave that is export oriented in contrast to the subsistence oriented traditional natives. There does appear to be a dedication to increasing industrialization but it is not clear if this is toward placing manufacturing facilities in or near rural areas to provide supplemental opportunities for family income or whether they are simply concentrating in existing urban areas and thus tending to promote migration from the rural areas.

It is possible that some structural transformation is taking place as per Fisher-Clark, but since population is still growing rather rapidly and agriculture is not in a position to absorb a large share of the increase, the agricultural sector still lags behind.

## Current Agricultural Strategy Towards Self-Sufficient Agricultural Sector

The Nigerian government has experimented with various development strategies towards a macro-economic planning context for agriculture intended to reduce the heavy importation of food for the country. Brief descriptions of these efforts have been given above. Suffice it to say here that these efforts have gone from efforts to encourage production of export crops to serve the needs of colonial powers to focusing on rather simple solutions to the complex problems with the

rise and fall of income from oil. There was little concern with the increase in food imports so long as oil revenues were massive. When those revenues fell sharply, it was difficult to manage a comparable reduction in the cost of imported foods without serious objections from large segments of the population.

In the case of the Operation Feed the Nation Program, Olayide (1983) suggests that serious policy mistakes were made. The effort to get "all and sundry" people into food production through the provision of heavily subsidized agricultural inputs ignored a great change that had taken place in people's expectations. Having learned that food can be had immediately for a rather small proportion of one's money income, there was little general willingness or appreciation of the need for exerting the physical effort required for the delayed returns that come from agricultural production.

Another problem noted by Idachaba (1984) had to do with the effect of the policies established on the distribution of the wealth created by the program. Instead of the "all and sundry" who engaged in agricultural production realizing immediate substantial benefits, those engaged in providing storage and transportation of fertilizers and related inputs received a disproportionate share while the consumers and those who provided for processing and transportation between processors and consumers gained very little.

Political favoritism plays a significant role in Nigeria's governmental structure. The example just cited is illustrative of the manner in which it occurs. The maldistribution of benefits from the Operation Feed the Nation Program are simply too extreme to be

attributed solely to ineptitude on the part of governmental policy makers.

Nigeria is not alone among developing economies in having political favoritism playing a major role in resource allocation. Economic theory has failed to explain such behavior of governments of developing economies. In economic terms this may be called resource misallocation in the provision of social goods and services. Given that the price system would fail to allocate resources for public goods and would underallocate resources for quasi-public goods, governments take it upon themselves to provide such goods. Social goods are purchased through the government on the basis of group, or collective choice. Subsequently, the types and quantities of the various social goods and services produced are determined in a democracy by political means, in other words by voting. The quantities of such social goods consumed are a matter of public policy. In contrast, the Nigerian government fails to employ economic tools in resource allocation, thereby resulting in allocative inefficiency in the system. As a result, agricultural input distributors and other middlemen were at an advantage at the expense of consumers.

Idachaba, Olayide, and other development economists in Nigeria argued that the mass mobilization effort of the O.F.N. program was hurriedly conceived and poorly executed. There were numerous problems with the sequencing of fertilizer procurement orders and arrivals, with storage, and with distributional logistics. Fertilizer ordering and distribution without prior land use and nutritional deficiency

classification was wrong and, as a result, large quantities of fertilizers were allocated and distributed to farms where they were not needed. Consequently, it was observed that monitoring and evaluation mechanisms led to a perpetuation of errors. Thus, a slogan was born, "fertilizer syndrome", in which agricultural development was equated with the importation and distribution of fertilizers, to the neglect of more important items like rural infrastructures including development and dissemination of technology packages, agricultural credit, investment and development of other agricultural inputs. In conclusion, the Operation Feed the Nation Program had no sound policy framework and was characterized more by policy ad hockery than by any agricultural and economic development strategy. The program passed away with the outgoing of General Obasango's regime.

The incoming civilian administration under Alhaji Shehu Shagari launched another program known as "The Green Revolution" which has been described in part above. The Shagari regime described the program thus:

> "...The element of self-reliance has been very much talked about; it is time we made it a fundamental guiding principle in our development. Of all the new values to be created among developing countries in their bid to develop, self-reliance is the single-most important." (Idachaba, 1984).

The self-reliance approach in agriculture represents transforming traditional agriculture into a more productive sector so as to generate surplus and increase the farmers income. Surpluses provide incentives for farmers to invest in the nonfarm sector, consequently

bringing about structural transformation from one growth stage to another (Jorgenson, 1969). Therefore the self-reliance approach can be fitted into the theory, transforming traditional agriculture (Schultz, 1964). This approach can transform the Nigerian agricultural sector into a more productive one by the introduction of new inputs such as fertilizers, tractors and the development of commodity programs like rice, maize and corn. The introduction of these factors would not only increase agricultural productivity but also reduce Nigeria's reliance on foreign imports.

The Green Revolution Program had the objectives of making the country self-sufficient in staple foods by 1985 and making the country an exporter of crops by 1987. The main activities under the program include (among others):

1. The formulation of a National Food Production Plan by the Food Strategies Mission;
2. Massive importation and distribution of heavily subsidized fertilizers, tractors and other farm inputs;
3. Special commodity development programs especially in rice and, to a much lesser extent, maize, guinea corn, millet, cassava and yams;
4. Review of Agricultural Credit Guarantee Scheme;
5. Increased resource allocation to the River Basin Development Authorities;
6. Reorganization of the Nigerian Grain Board with a view to making it play a more activist role in national grain marketing.

For a successful development program, project managers need to identify those elements of the program which are socially optimal, specifying the time element in the program objectives and the expected implications for program commitment, seriousness, consistency, and tight scheduling. Second, Nigeria recognized the need for its food-sufficiency programs to be formulated within an overall policy framework which led to the commissioning of the Food Strategies Mission. The Mission provided and supervised the program's blue-prints. Third, there was the creation of such bodies as a supraministerial body and the National Council on the Green Revolution, all of which were under the chairmanship of the Head of State, who coordinated the multisectoral needs of the programs.

In Nigeria, some felt that the green revolution had made significant progress but others questioned that. The Green Revolution's main contribution to the Nigerian economy was its recognition of the seriousness of the food situation in the country by ranking the green revolution as the nation's number one priority. Consequently, policy makers lost sight of the program's objectives and pushed the dead lines instead. Policy makers failed to specify in advance by what criteria success was to be evaluated. Consequently, the programs came to be assessed favorably by the size of expenditures, quantities of inputs imported and the sizes of the projects as if there were a linear transformation between expenditures and project success according to Idachaba.

The Green Revolution's shortcomings can be attributed to a number of causes the most significant of which was the timing and scheduling

of the various elements. The program pushed to reach one deadline and missed all other programs objectives and goals (Olayide, 1983). The program failed to translate the National Food Production Plan into a National Food Policy. This resulted in the components of the plan being picked and implemented ad hoc without due regard to their interrelationship. Idachaba suggests that had a National Food Policy document emerged from the Food Plan as observed in other sectors, discipline and consistency would have been built into the implementation prices. Second, the program had political bias which ignored agroclimatological zones.

The third problem was the politicization of the program. For example, tractors and other agricultural inputs were distributed not on a need basis, but on numerical terms, i.e., 10 tractors or other inputs were equally distributed to states as if each state's population were equal. As a result of this, states turned the program into a scramble for a share of the national cake (agricultural inputs). Political favoritism was also apparent in the distribution of these inputs. In states controlled by the National Party of Nigeria (NPN), fertilizers and other inputs were sold to NPN supporters only. States under different political parties created their own input distribution apparatus with the result that fertilizer was sold at different prices to different farmers within the same states. This kind of input delivery system resulted in a colossal waste of resources and confusing pricing policy, according to Idachaba.

Most economists agree that, subject to certain limitations and exceptions, a purely competitive economy will lead to the most efficient allocation of scarce resources. That is, a competitive price economy will tend to allocate the fixed supplies of resources available to society in such a way as to maximize consumer satisfaction. This is the "ideal" situation in a free market system, but where such "ideal" is not attainable as in the case of Nigeria, especially in the distribution of farm inputs, economic theory is violated. It may be that program managers either fail to comply with theory or that they simply let favoritism rule over economic rationality.

Idachaba contends that those who were responsible for plan implementation failed to implement the key elements of the programs, but rather chose easy programs like fertilizer procurement and distribution as opposed to more constructive projects like the building of feeder roads, innovative financing schemes for on-farm investments and improvement in the farm through improving the farm credit system. Programs that would structurally transform the Nigerian agricultural sector were ignored in favor of "fast money spinners" like fertilizer procurement and distribution.

The green revolution benefited a large class of unintended beneficiaries: fertilizer merchants who had access to import licenses and international letters of credit; fertilizer transporters--also reaped millions of naira (or dollars) by simply hauling fertilizer from the ports to the hinterland. Similarly, other unintended beneficiaries included suppliers of farm machinery, foreign

contractors and suppliers who, in collusion with some Nigerians, over invoiced and siphoned off large amounts of scarce foreign exchange, to mention but a few.

## The Place of Agriculture In the Development Process: Links Between Agriculture and Non-Agriculture

In an attempt to attain modernization, efforts are being made to bring about a fundamental structural transformation of Nigeria's economy to make it primarily industrial rather than agricultural. Agriculture is intended to assist this transition, and this role is of particular importance at the present state of the Nigerian agricultural and economic development. In the FAO study of Nigeria, it was stated that in the absence of a capital goods industry, the early stage of industrialization will have to be based upon imported capital goods which will require a steadily rising volume of foreign exchange. As recent experience has shown, foreign exchange is one of the scarcest resources in Nigeria.

Another concomitant of industrialization is a shift in the occupational distribution of the labor force, as a result of which the demand for food by industrial labor will expand sharply owing to rising incomes. Since the Nigerian government has attempted to minimize imports of food by both Operation Feed the Nation and the Green Revolution Programs, the agricultural sectors must be sufficiently flexible to provide food for the growing population. To deal with this situation in Nigeria, a sharp rise in the marketed surplus of food as well as a change in the pattern of the existing

food production have to occur. This increase can be achieved by suggestions made by development economists like List (1932). In his agricultural development stages List suggests that progress in agriculture could occur under the stimulus of export demand or through the input of domestic industrial development. List (1939) argues that the domestic development approach is the most important generator of agricultural progress because of its double impact resulting from increased demand for farm products from an expanding nonfarm sector, and the development of more efficient methods of production resulting from the application of science and technology. The FAO study insists that failure to achieve this increase will result either in an increase in food imports, which will jeopardize the program of industrialization, or a rise in domestic food prices, which may not only lead to rising social unrest, but may also injure the competitive position of the Nigerian export sector.

A highly productive agriculture underpins general economic development in several other ways. The study by FAO asserted that owing to the generally favorable man - land ratio in Nigeria, there is no pressing need to create labor-intensive, low-productivity non-agricultural jobs and this, in turn, permits the establishment of economically efficient industries to serve both domestic and export markets. But such a policy, if followed, would be imperiled by a premature influx of rural labor which would not only create pressures for work-sharing schemes, but also distort the pattern of investment toward social investment, e.g., low-cost housing, etc. In addition, a prosperous agricultural sector provides the market for the products of

the nascent industrial sector, both for consumer goods as well as for intermediate goods of industrial origin needed to expand agriculture, and agricultural inputs such as fertilizers, tools and farm equipment and machinery.

## Agriculture's Contribution to Production and Exports

The study by FAO estimated that in 1963/64, agriculture was responsible for 58 percent of the Gross Domestic Product (G.D.P.), with 80 percent of the economically active population engaged in that sector. Agriculture was anticipated to outweigh all other sectors of the economy in 1974, but by 1980, its contribution to gross domestic product was expected to be slightly below 50 percent (47 percent by FAO estimation).

FAO, (1985) suggests that if technical and social weakness do not place a limit on the growth of agricultural production in Nigeria, demand will. In Nigeria, as in other developing economies where incomes are still low, people's expenditure on foods does not increase proportionately with their expenditure on all goods and services when their incomes rise. The best information to FAO indicates that the coefficient of income elasticity for food as a whole may be around 0.7 (where 1.0 would mean that per capita expenditure on food increased proportionately to per capita expenditure on all goods and services). For this reason, the FAO study showed that by 1980, total value of food produced for domestic consumption, if production kept pace with demand, would be about ₦1,319 million (U.S. $2,638) compared with an estimated ₦691 million in 1963/64 (U.S. $1382). For the above reasons

the agricultural economy cannot grow as fast as the rest of the economy, unless this slow rate of growth in the demand for food is counter-balanced by an increase in (a) the domestic demand for raw materials of agricultural origin, and (b) the value of agricultural exports.

Exports will be the more important factor. The target for agricultural exports needs to be seen in the light of the overall export-import balance and foreign exchange situation. The FAO suggests that Nigeria should permit imports to increase at the rate of six percent per annum, the study concludes that this may be possible only if exports rise by at least 5.5 percent per annum in order to keep the import surplus within the limits of the economy.

Taking exports and domestic demand together, it was expected that by 1980 the Nigerian farmer would have a market worth about ₦1,550 million (U.S. $3,100), compared with an estimated ₦807 million (U.S. $1,614) in 1963/64. To aim at production programs in excess of this would mean planning for disequilibrium. Prices on the Nigerian market would fall if production for domestic use outstripped demand for food because export supplies could become unsaleable or marketable only at falling prices. The Growth Model is set at the approximate upper limit, but it defines the task facing Nigerian agriculture if it is to meet the food requirements of the people and also meet its obligation to Nigeria's export task.

## Agriculture and Employment

The agricultural sector consists predominately of small holder farm families, estimated to number between 5 and 6 millions, who in the late 1970s produced 90 percent or more of the country's agricultural output (Nelson, 1981). The sector's growth rate will probably accelerate from 3.2 percent annually now to 3.7 percent in the nineties, according to the World Bank Report.

The magnitude of the overall employment problem is better appreciated when considering the agricultural and non-agricultural sectors separately. The extent to which agriculture will have to absorb the additional population will depend upon the rate at which non-agricultural industries can afford employment. In the Growth Model, the impact of the population increase on employment in agriculture has been calculated as a residual after assuming that the urban economy would have to provide employment for about 7 million people by 1980. This would leave it to agriculture (including fisheries and forestry) to provide the equivalent of full-time employment for 17 million people by that same date, an increase of over 50 percent. In Nigeria, about 20 million people seek their living in agriculture, and agriculture provides the equivalent of full-time employment for about 11 million. With an output per head (of effective employment) estimated at only ₦73 (U.S. $146), or 40 percent of the non-agricultural sectors, agriculture is not in a good position to absorb more people (FAO, 1966). In the long run, the number of people dependent on agriculture will need to decline if those in it are to achieve a reasonable standard of living, even

though improvement in output per acre can make an important contribution to labor productivity. The density of the agricultural population is already too high in relation to present techniques of production and land-use around many of the urban centers according to FAO.

# CHAPTER 5

## Summary and Conclusions

The country, located on the western part of the continent of Africa, has a population of about 1 million people. The federal government of Nigeria, in pursuit of both agricultural and economic development, has engaged in policies or strategies intended to increase agricultural productivity and per capita income. Various economic theories address the structure of agriculture in developing countries and by implication suggest the kinds of policies that would be most effective in bringing about desired change. Three theories offered the greatest potential in describing the Nigerian situation: the Dual Economy (Jorgenson); Transforming Traditional Agriculture (Schultz); and Growth Stage Theories (1969). In spite of various efforts by the governments the agriculture of Nigeria remains basically subsistence in nature.

The governments have based their policies primarily on the Transforming Traditional Agriculture theory judging from the nature of the programs that have been implemented. If there had been a conviction that the Dual Economy model was most appropriate, then there would have been a greater emphasis on the restructuring of the

basic relation of the farmer to the land through the establishment of large farm enterprises in which the individual farmer would have become essentially a paid laborer. Under some arrangements the farmer might have had some influence on production policies but the impact would clearly be a substantial reduction in the opportunity of the individual farmer to make management decisions. The goals of the larger farms would have been to produce more goods for the export market along with some additional production for domestic consumption.

In spite of exogenous factors which briefly distracted the governments from their primary concern with agriculture, there was attention given to the structure of agriculture and the means by which it could be made more productive. The invitation for a study by the Food and Agricultural Organization of the United Nations is clear evidence of that concern along with the subsequent programs that were initiated.

The effort to influence the structure of agriculture was clearly based on the theory 1) that it could be transformed through appeals to the patriotism of the farmers and those with land susceptible to agricultural purposes and 2) that the nation needed all of the production that could be achieved. The government would provide certain essential inputs for production. There was no suggestion that the basic relation of the farmer to the land be changed to accomplish the goal of increased production. Thus the theory upon which the successive governments have operated is that of the transformation of traditional agriculture through the provision of new information and/or needed inputs.

The first objective of this study was to assess the extent of agricultural and economic development in Nigeria. During the period from colonial domination to the present, agricultural development has shifted away from an active orientation toward production for export to response to domestic demand. The real structure of agriculture has changed little, however, as traditional forms and orientation to subsistence and the local market has dominated. There has been a shift of population away from the rural areas in which agricultural production predominates, toward the urban centers which have been the focus of opportunities to benefit from the wealth generated by the petroleum boom. From the point of view of the government the petroleum revenues were to be promptly expended with little anticipation of the possible sharp changes in the amount of such income. This served to raise the expectations of the general public as to the ease with which their dreams of consumption and easy living could be achieved. It also served to undermine their confidence in the traditional ways of survival and conservation.

With the belt tightening that had to take place with the precipitous drop in oil revenues, there has been a recognition of the need to stimulate other sources of export revenue. Increasing the production of some of the agricultural products that had produced export revenue earlier could not be accomplished as quickly as they had decreased. Some of the tree crops require a number of years before they produce saleable crops for example.

The second objective of this study was to define more clearly the role of agriculture in the development of the overall Nigerian

economy. The data available indicate that agriculture has remained essentially traditional in nature but has been somewhat responsive to the nation's increasing demands for agricultural products for domestic consumption. Concerning products for export the role of agriculture has changed dramatically. With the sudden increase in the value of petroleum exports, the national need for agricultural exports was greatly diminished. Simultaneously the prices of the products which had been traditionally exported dropped. Subsequently, the expectations for continued high levels of income from petroleum could not be realized and the need for agriculture to resume making a significant contribution to export income has again come to the fore. Agriculture has not been as responsive to the demands for export as it has for domestic consumption. Even in domestic production, there is evidence that demands are not being met entirely as the importing of agricultural products continues at a relatively high level. It appears that agriculture has not contributed as much as it might have to the economic development of the Nigerian economy.

The third objective of the study was to suggest ways to improve the productivity of Nigerian agriculture which remains essentially subsistence in nature. The rapid migration from rural areas and the real but modest increases in agricultural production for domestic consumption provide evidence that while there is a responsiveness to economic opportunity there is also a continuing reliance on the tried and true practices of traditional agriculture by a substantial segment of the rural population.

If the government is going to continue to rely on the theory or philosophy that the best way to increase agricultural production is through transforming traditional agriculture, which may be the only politically feasible way to approach the matter at this time, then careful attention must be given to providing for the economic and social security of the farm family while providing the technology and developing the skills necessary to bring about the increase. The theory assumes that individuals are capable of looking out for their own best interests and that they will utilize such technology as is appropriate to the goals and circumstances of the family as they understand it. The challenge for the government is to determine from the families what is important to them and then attempt to develop programs which are responsive to these expressed values along with the prospects for increased production.

For the purposes of economic analysis and the necessary assumption that all other things be held constant, the transforming of traditional agriculture theory has much value. Given the impossibility of holding everything else equal in normal living, however, the integrated rural development approach has much to recommend it. This approach is concerned with the improvement of the quality of living of all of those living in rural areas including an examination of the potential of agricultural production for contributing to such improvement. The principal focus of the transforming of the traditional agriculture theory is at the micro rather than the macro level which cannot be ignored.

# Conclusion

Programs like the Green Revolution and the Operation Feed the Nation, which are oriented toward agricultural and rural development in Nigeria, would have a greater probability of success if a consistent pattern were followed. These "programs" should be associated with the package of plant biological inputs. They imply a transformation of traditional agriculture which is dependent upon the widespread adoption of optimum farming practices and an efficiently operating market system which is lacking in Nigeria. Such programs should also reflect the behavior of the rural people and take into account the limiting cultural, production and distributional problems associated with the rural population. Considerable education, training, and extension are required to bring about changes in the mode of production which implies a complex set of innovations associated with such projects.

The educational investment in human resources needed to bring about agricultural development requires a focus on such topics as a) the proper preparation and maintenance of the soil, b) meticulous observation of the agricultural calendar, c) the advantages of altered crop mixtures, and d) the when and how for utilization of the new production factors to avoid misuse and disappointment. For the educational investment to be productive for the long term, the government must a) arrange for the timely availability of the appropriate inputs with adequate notice of such availability and b) see that there are outlets for sale of the expected increase in

production. In addition it is essential that the government make provision for adequate supporting infrastructure including roads, financial services, communication facilities, etc. to backstop change that will be virtually revolutionary.

## Recommendations

In the literature review, emphasis has been placed on the need for an integrated rural development approach. Lele suggests that rural development improves the quality of living of the low income population residing in rural areas. Such an approach not only affects the immediate social welfare of the masses but also the long-run growth potentials of the society.

For Nigeria the rural development approach appears to be the most feasible because the majority of the people live and work in rural settings. It would also be advantageous there because it calls attention to the likely outcomes of stressing one kind of technology over another in terms of the overall objectives of the society. With the corruption, tribalism and a lack of national patriotism that currently characterizes Nigeria, according to Idachaba, a rural development approach which emphasizes micro-level planning or a "bottom-up" approach is likely to be most successful. Such an approach minimizes the need for loyalty to the central government and focuses on local decision making and dealing with trusted local leaders to bring about change.

Many of the development planning concepts and methods utilized by developing countries in the last three decades involved macro-planning

or a "top-down" approach. The frequency of failure of such an approach has pushed revisionists to embrace a completely opposite philosophy which emphasizes the decentralization of authority for development planning. Following this philosophy the ordinary rural resident is given a chance to be involved in the decision making process and becomes identified with it, increasing the likelihood of assuming some responsibility for its success. For Nigeria to make such a change, it will be necessary to restructure the decision-making process to give the poor a greater voice. This means that the village needs to become the focal point for development and the educational system needs to be modified to raise the consciousness of the masses and to instill a sense of responsibility among the elite.

The integrated approach to rural development maintains that development planning should be the outcome of coordination between macro-planning and micro-planning. What is needed is a method for planning and implementation which integrates the macro- and micro-planning and coordinates the planned outcomes. This requires the utilization of an intermediate level between the national government and the rural citizen and the community within which that citizen dwells. Regional planning is clearly the level to achieve such coordination. It is essential that the regional planner be aware of the overall, national policies for development as well as being conscious of constraints and desires at the local level which will include economic and social sectors other than the one which is of central concern.

## Inter-Sectoral Integration

The simultaneous planning of the Nigerian major sectors namely agriculture, industry and services will significantly enhance both agricultural and economic development. Similarly, the simultaneous inter-sectoral planning assures another important factor of the development process, namely, the technological level of production in all the sectors. In Nigeria, the level of technology that should be used in farming is a decisive factor and as such a distinction should be made between labor-saving technology and the capital intensive approach. Mechanization and yield-increasing technology make use of selected seeds, high yield and disease-resistant varieties, weed-killers, pest control and fertilizers. In Nigeria, under suitable conditions, the use of such technology can increase not only output per farmer but also the number of people employed in each farm unit.

With the establishment of the most suitable farm technology, the technological level to be used in other economic sectors may follow. Simultaneity in inter-sectoral coordination does not only define the level of technology to be used to achieve economic results but also will improve employment and income.

Historically, governmental organizations in Nigeria have been centralized. This means that decision-making and execution is concentrated in the capital city and frequently by people with limited knowledge of the prevailing conditions in the rural communities. In addition, coordination between the various branches of the central

government has been ineffective. Such problems of bureaucratic structure make it virtually impossible to mobilize the resources necessary to achieve any meaningful economic growth according to Amonoo.

In Nigeria, changes in the social structure and way of life are necessary pre-conditions to the economic growth of the country which is characterized by traditional tribal affiliations. It is essential that planners in Nigeria incorporate these considerations and possibilities as tools to enhance policies to attain economic growth. It is especially important to introduce specific measure that would evoke response and bring about the necessary changes from within. In Nigeria, a development program can succeed only if it is designed both for the people and with the people. It must express their desires, aspirations and values. Although at times there is resistance to change by Nigerian peasants, this obstacle can be overcome if the planners convince the rural mass that there is a better future for them if they will make the effort.

Trust in the planning team and confidence in their goodwill and ability to help by local people are essential to program success. Therefore, if any development plan is to be fully accepted by the local people, there must be assurance that they will share fairly in the plan's benefits which can only be achieved by active participation of local representatives in the design and implementation of the plan.

As can be inferred so far, an integrated rural development strategy is largely a management strategy. It also aims at reforming the present stratified and hierarchical systems of planning and

administration, from a sectoral approach to a more comprehensive approach which will increase coordination and effect decentralization of decision-making, planning, administration and budgeting. In Nigeria decentralization needs to aim at increasing the involvement of local grassroots organizations and groups (planners and recipients or the individuals for whom this development is desired).

Given the level of agricultural and economic development in Nigeria, policy instruments should encourage improvement in social welfare and the long-run growth potential of the entire economy. Pre-emptive structural change may be an effective policy instrument. Pre-emptive structural change is needed because of the likelihood that unregulated modernization will widen wealth disparities and decrease the ability of a large proportion of the population to contribute to national growth.

1. Pre-emptive structural change refers to the selection of a development strategy involving choices about technology and institutional reform which insure that a substantial portion of the benefits of aggregate output is retained within agriculture by the majority of household producers.
2. The Nigerian federal government has in various ways attempted to increase the national income but the policy instruments employed have not produced the desired results. Therefore, a wage-price guideline is one alternative income policy that Nigeria might adopt. This policy instrument can have "noninflationary" price and wage increases and should be based on the average increase in productivity in a given period. This policy would also call for

an increase in prices and wages of about 3 percent per year, and a long-term rate of productivity gain. This was an effective policy instrument used by the Kennedy administration in the U.S. and could achieve similar results in Nigeria.

3. In the Nigerian setting where the distribution of income is very uneven, the federal government should employ another income policy to close the gap between the rich and the poor. Adoption of more appropriate tax policies would help in this regard. One such policy would be to tax discriminately in favor of rural people to assure that they will have adequate purchasing power. Another alternative would be to focus development policy on the majority of farmers so that the economy will end up with a very large majority having some increase in purchasing power rather than a very small minority with a large increase in purchasing power.

4. The Nigerian farmer produces for both domestic consumption and export crops and as such, policies that will incorporate both sectors are desirable.

   a. First, domestic programs must be made more market-oriented. This means that signals and incentives provided to farmers must more fully reflect actual market conditions rather than some inflexible formula or political process with little or no connection to underlying supply and demand conditions.

   b. Second, Nigeria and other neighboring countries should move together to coordinate market-oriented policies for agriculture. Although there are good economic arguments for

greater market orientation even with other countries standing still, the chances of significantly reducing the degree of protection provided agriculture is far better with all bilateral areas moving together. For example, many other countries as well as Nigeria, produce and sell cocoa and other cash crops. If these countries sell their products on the world market at different prices, some producers who have a higher cost of production and, therefore, higher prices will not sell resulting in reduced income.

c. Third, it must be recognized that it is not always possible to move to market-oriented policies all at once. It is essential that farm people be given a transition period within which to adjust to the new policy framework. Since the extent of the required adjustments differ from commodity to commodity and from region to region and/or from country to country, it is not possible to specify across the board how long the transition period should be. But as a general guideline, a period of five to seven years should be adequate for most of the necessary adjustments.

Given the various facts of the operation of the Nigerian agricultural sector, a market-oriented policy is strongly recommended. The Nigerian government should let the price system allocate resources. The basic goal that the price system achieves is allocative efficiency. In Nigeria allocative efficiency will lead to a more efficient allocation of resources. Similarly, the competitive

price system would not only guide resources into the production of those goods and services most wanted by Nigerians but would also force the use of more efficient techniques of production. Again, the price system is conducive to the development and adoption of new and more efficient techniques, many of which Nigeria has imported during the various agricultural development strategies. The market system would then correct the existing resources misuse.

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# VITA

## EMMANUEL U. USHI

Born in Nigeria on June 2, 1950, Emmanuel grew up in a rural setting in a family that valued education. He completed the educational requirements for teaching and taught school for three years (1973-1975) before entering Jackson State University in Mississippi. While at Jackson State, he was on the Dean's List every term and was active in the Economics Club. He was granted an award in recognition of his academic performance and his leadership. He earned a B.S. in Economics in 1978 and an M.S. in the same field one year later from Jackson State. He continued his graduate education at the University of Maryland where he was a teaching assistant in Agricultural and Resource Economics for three years. In 1983 he entered the doctoral program at the University of Tennessee in Agricultural Economics.

In addition to his teaching experience in Nigeria and at the University of Maryland, Emmanuel taught courses at Jackson State, Grambling State University, and Prince George's Community College in Maryland. He concentrated on rural and community development in his program at the University of Tennessee with the expectation of returning to Nigeria to devote himself to the improvement of rural life there.