SOCIAL CHANGE AND NIGERIAN AGRICULTURE

THESIS

Presented to the Graduate Council of the
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MASTER OF SCIENCE

By

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The problem with which this study is concerned is the description of changes in Nigeria that result from agricultural developments during the precolonial period to the present time. Emphasis is placed on the relationship between agriculture and other institutions, and the effect of agricultural change upon social phenomena such as population growth, family, industrialization, urbanization, and education.

The Nigerian agricultural institution may be divided into three periods: the precolonial, the colonial, and the Republican agricultural eras. The data were obtained from published research reports, United Nations reports, government documents, newsletters, and economic journals.

Primarily descriptive in nature, the thesis consists of six chapters. Emphasis was placed upon the historical development of Nigerian agriculture and the reciprocal impact between it and other Nigerian institutions.
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CHAPTER I

HISTORICAL OVERVIEW

Introduction

Nigeria is a developing country located at the corner of the Gulf of Guinea in West Africa. It is a tropical land comprising about 356,000 square miles and a population of about 80 million. From north to south are strips of coastal swamps, tropical rain forests, and derived savannah. Typical rainfall patterns range from 80 to 140 inches in the south, 40 to 80 inches in the middle belt, and 20 to 40 inches in much of the north.

About 75 per cent of Nigeria's population is engaged in agriculture. It is now second to petroleum in contribution to Nigeria's gross domestic product (GDP) and foreign exchange earnings. For the fiscal year ending March 31, 1975, more than 18 per cent ($6 billion) of the GDP came from agriculture, whereas 82 per cent ($24.5 billion) accrued from oil. Nigeria is the sixth largest producer of oil in the world.

Of the total population of 80 million, 47 per cent are Moslem, 34 per cent are Christian, while 19 per cent are

animist and others. Major ethnic groups include the Hausa/Fulani in the north, the Yorubas in the west, the Ibos in the central east, and other minorities (Efiks, Ibibios and Ijaws) in the south, east, and delta areas, respectively.

Nigeria is linked historically with the British, the first contact occurring around 1820. From 1825 to 1840 the British interest in Nigeria was primarily religious, and two important missions were established during that period: the Basel Methodist and Bremen missions. The British sought to bring the benefits of Western civilization to Nigerians through education. To this end, they built schools and admitted pupils for training. Of particular importance was the role played by Thomas Birch Freeman, a Methodist who first went to Ghana and then moved to Nigeria in 1825.

British economic interest quickly came to the fore in Nigeria; as J. F. Ajayi says,

The anxiety of Britain to intervene in Lagos was not just the philanthropic desire to destroy slave trading activities of Portuguese and Brizilians there, but also the economic desire to control the trade of Lagos from which they had hitherto been excluded and from which they hoped to exploit the resources of the vast country stretching to and beyond the Niger.²

Consequently, Lagos, the capital city, was ceded to the British government in 1861 by the then "Local King," Akitoye.

Economic ties between Nigeria and the British government were strengthened after the Berlin Conference on Africa in

1885. The British government was given power of supervision over the waters of the lower Nigeria. In 1893, the British established the Royal Niger Company. History records that the Royal Niger Company described the British area of influence in Nigeria and the Niger Coast Protectorate with agencies at Borgu (1894), Nupe and Ilorin (1897). Pervasive economic changes occurred due to the influence of this company. For example, the Sylvan and Agriculture Produce Scheme for forest conservation and diversification of crops in the late nineteenth century was one such result. Moor (1896-1903), Macgregor (1899-1904), and Egerton (1904-1906) actively promoted these measures. In the Protectorate of Southern Nigeria, forestry laws and botanic stations were established at Lagos in 1887. The British purpose at this point was to establish agricultural experimental work, agricultural teaching, the collection and distribution of information, and such miscellaneous functions as the collection of non-economic or "ornamental" plants, vegetable growing in Lagos and on the Gold coast (Ghana), and cattle-raising in Sierra Leone. Another aspect of structural change was the enforcement of taxation to boost the Nigerian economy. Nigerians experienced a tax on crops, a capitalization tax on cattle, and a tax on trades and professions.

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With the advent of Indirect Rule\(^4\) in 1900, spearheaded by Lord Lugard, colonial administration went into full swing when the Lagos colony was united with the Oil Rivers Protectorate. The first railway between Lagos and Ibadan was opened in 1904, and Governor Egerton amalgamated the entire Protectorate with the West. From that time, Nigeria went through a series of constitutional changes until the 1960 Constitution ushered in independence. The 1963 Constitution enacted the Federation of Nigeria into a Federal Republic on the 1st of October, 1963. A highlight of social change erupted on January 15, 1966, with the first military, bloody coup d'état. Today Nigeria is still undergoing political upheaval; there has been a change from military to civil rule, effective as of October 1, 1979. Alhaji Shehu Shagari is the current head of State.

Statement of the Problem

The purpose of this research is to describe social changes in the agricultural institution in Nigeria from the precolonial period to the present. The research will examine, inter alia, the social impact of the agricultural institution in Nigerian society, the relationship between agriculture and other institutions, and the effect of agricultural change upon

\(^4\)Indirect Rule is the British System of administering most of the territories in West Africa before World War II. It worked through native chiefs and availed itself of the intelligence and powers of governing of the ruling class.
other social phenomena such as the family, urbanization, industrialization, education, and population growth. In addition, this research will consider the place of the peasant-subsistence agricultural pattern that began in precolonial times and continues to the present.

Research Design and Methodology

The framework of the Nigerian agricultural institution may be divided into three periods: the Precolonial Agricultural Era—up to 1800; the Colonial Agricultural Era—1800-1959; the Republican Agricultural Era—1960 to the present.

The main theme of the thesis is that precolonial agricultural patterns encouraged a large-scale agricultural technique for all of Nigeria. The peasant-family farming unit has changed to a mechanized, exporting, production economy.

Reports and books such as *Agricultural Development in Nigeria (1965-1980)*, *The Native Economies of Nigeria*, by Forde and Scott, *The Wealth of Nigeria* by Stapleton, and *Land and People in Nigeria*, by Buchanan and Pugh, form the primary data base for this study. Government estimates of agricultural production and current government expenditures, along with newsletters and economic journals from the Nigerian Embassy are vital sources of data as well. Finally, maps are used to convey geographical location, agricultural centers, major crops of production, distribution of land type, and other agriculturally relative information.
A descriptive characteristic of this thesis is its examination of the impact of agriculture on other social phenomena such as family, urbanization, industrialization and population growth. For example, the statement from Area Handbook of Nigeria is a classic proof that the agricultural institution generates an incentive for other institutions, viz., "agriculture, through export duties and sales taxes, in the basis for Nigerian industries."

Organization of the Thesis

The first chapter of this thesis is an overview. Chapter Two dwells on precolonial agriculture, with emphasis on production as it was based on the family as a labor force. Other facts include the accomplishments of farm tasks through cooperative efforts with hoes, and the use of shifting cultivation and bush fallowing as cultivation techniques. Land tenure, another aspect of this chapter, is complicated because of the Islamic and English systems of land laws that guide its use; families, however, still retain ownership of land.

Chapter Three discusses a main feature of social change by focusing on the emergence of large-scale agricultural units known as plantations, through which there has been a transfer of some portion of family-land ownership to the government. With the emergence of plantations, mechanized agriculture (terracing, mixed farming) is being practiced; marketing boards serve functionally to stabilize prices in the best interests of the farmers.
Chapter Four outlines changes dating from Nigerian independence to the present. More modern labor-saving devices are used, e.g., dam and water resource projects in Kano state [the Hadejia River Basin Development Authority (HRBDA)]. Technological changes include the spraying of cocoa trees against bugs, the use of fertilizers, and the development of semi-arid lands of the Northern zone and the planting of companion crops to kill weeds. Change has occurred as a result of the UN programme on ecological zones in Africa of which Nigeria is a part; the ecological zone program has declared certain areas as fertile, encouraging active large-scale farming to help alleviate social problems like unemployment, hunger, and famine. Primarily, the chapter examines the nation's gigantic third national development program (1975-1980) with its slogan, "Operation Feed the Nation" (OFN), which is also known as the "Green Revolution."

Chapter Five examines how agriculture has influenced other social institutions, such as education, family, industrialization, urbanization, and population growth. Finally, Chapter Six is a summary of the findings of the research study.

Definitions of Terms

The following are definitions of special terms as they relate to this research.

Animal husbandry: cattle raising or pastoralism;
Capsid bug: a harmful insect that destroys cocoa seeds (its generic name is *sahlbergella singularis*);

Companion crop: a crop that is sown among other crops to control weeds and to use limited space more efficiently;

Types of crops: (i) cash crops—cotton, tobacco, rice, coconuts, soyabean, shea nuts, lumber; (ii) export crops—palm products, cocoa, groundnuts, cotton, banana, rubber and kolanuts; (iii) food crops—cassava, maize and beans; and

Fig. 1—Map of Nigeria showing minerals and agricultural produced. ["Agriculture in Nigeria," Nigerian-American Economic Relations, Washington (1978), p. 36.]
(iv) tree crops--cocoa, palm produce, rubber and kola-nuts;

Mixed farming: arable farming with animal husbandry, a recent development in Nigeria;

Peasant farming: native farmers (indigenous, sedentary or non-migrant farmers), usually associated with substance patterns of agriculture;

Plantation: farm or agricultural estate;

Shifting cultivation: another form of bush fallow system, which utilizes a rotation of fields or farms rather than crops; and

Terrace agriculture: defensive hill farming that helps to check erosion in an upland environment.
CHAPTER II

PRECOLONIAL AGRICULTURE

Introduction

The purpose of this chapter is to give a general description of precolonial agriculture, with emphasis on food, soil, general techniques of farming, and the type of tools used by the precolonial peasant farmers. The social structure of precolonial agriculture is an important area of investigation in this chapter, as is land ownership, the marketing system, division of labor based on sex roles, and familial relationships. Finally, the decline of precolonial agriculture is examined.

A Description of Precolonial Agriculture

The precolonial agricultural era may be characterized in general as a period of subsistent agriculture. A variety of food crops\(^1\) were grown: cassava, yams, okra, melon, maize, peppers, rice, beans, millet, and vegetables. Other forms of food crops include palm products (oil and kernel), some fruit trees (coconut, orange, and pear), and small-scale fishing. (see map of food crops on page 11.)

Nigerian agriculture of this period may be divided into two areas. The first, all of northern Nigeria, was made up of Moslem pastoralists and Hausa peasant agriculturalists. They concentrated on grain and pastoral farming. The grains were mainly guinea-corn, groundnuts (peanuts), and millets. The pastoral economy was dominated by the rearing of cattle for subsistence production of milk and meat, and the marketing of other livestock (especially goats, pigs, and sheep) and certain products like butter, cheese, and ham. The other major area of precolonial agriculture was in southern Nigeria.
The inhabitants of this area practiced mostly arable farming (production of a variety of food crops) and fishing around the riverine delta areas (see Figure 2).

**Vegetation and Soil**

Nigerian vegetation is structured as a result of the tropical climate of Nigeria; the whole of northern Nigeria up to the savannah grassland belt (see Figure 4, vegetational map) is a drought zone with very intermittent rainfall, and southern Nigeria has a maritime climate with heavy rainfall during the wet season. Nigeria's general climatic condition is hot and wet throughout the year. The hot season, which is also known as the dry season, begins in October and lasts through April; the wet season starts in May and lasts through September. It is the drought climate of the north and the maritime type of the southern belt that defines a typical vegetation for Nigeria. For example, the vegetation is luxuriant mangrove and swamp forests in the south, with open thorn savannas or Sahel vegetation in the north, where there are desert conditions. Buchanan and Pugh, in *Land and People in Nigeria*, state that H. Vine has recently regrouped Nigerian soils in five main classes, namely,

1. Well drained reddish colored soils, moderately to strongly leached, with low humus content;

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2 Mangrove is a type of forest in the delta region, characterized by mangrove trees, while savannah or Sahel vegetation is mainly a grassland region similar in some respects to a prairie.
2. Well-drained soils, moderately leached with high humus content;
3. Well-drained yellowish-brown soils, excessively leached;
4. Swamp soils; and
5. Poorly drained clays and dry sands. (See Figures 3 and 4.)

Of these five classifications, the first type of soil covers about nine-tenths of Nigeria.


**Farming Techniques and Tools**

Generally, farming techniques like shifting cultivation (or bush fallowing) and inter-cropping systems were used

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nationwide by the precolonial farmers. But shifting cultivation or bush fallowing was a predominant farming method used by most southern farmers, as compared with intercropping and permanent cultivation systems that characterized the mode of farming in northern Nigeria.

Northern Nigeria.--Northern Nigeria's precolonial peasant who specialized in grain farming (production of rice, beans, groundnuts, millet and guinea-corn) used the intercropping system very effectively. The device allows three or more

4 The term shifting cultivation may seem vague or confusing, because some parts of the world apply this term to a way of farming that encourages the abandonment of a piece of land for several years. Such an idea is not applicable here. Shifting cultivation refers to the process of "land rotation" or "bush fallow." For a practical explanation, see Table I.
crops to be grown on the same plot of land at the same time. Intercropping *per se* was well suited to cultivation with the hoe, and it helped to check soil erosion as well as saving land and labor. The process of intercropping was an asset to the local peasants and Nigeria; it allowed the introduction of certain other food crops like guinea-corn, millet, and sweet potatoes into Nigerian society. It also encouraged permanent cultivation rather than a kind of nomadic slash-and-burn technique. The soil was protected from depletion by the use of manure. Permanent cultivation in precolonial Nigeria was concentrated around cities like Sokoto, Zaria, Katsina, Maiduguri, and Kano. Permanent cultivation transformed peasant agriculture. Food grains such as millets and guinea-corn occupied as much as 60 percent of a cropped area. About one-third of the land was planted in groundnuts, while the remainder was used to grow minor crops like cassava, sugar cane, cocoyams, and sweet potatoes. To keep their land under permanent cultivation, the precolonial peasants utilized all available kinds of animal manure. Mulch material included household waste (like ashes) and yam, potato, and plantain wastes; bones and other plant wastes were also used.

**Southern Nigeria.**—During the precolonial period southern Nigerians farmed large expanses of land. Their chief technique was shifting cultivation; hoes and matchetes were their main tools. Besides the large expanse of land, the southern
Nigerian peasant was blessed with fair climatic conditions, maritime temperature, rich humus soil, and thick evergreen forests which when cut and burnt served as rich mulch. These environmental assets were not shared by the northern peasant, who lived in a hot savannah belt with only intermittent rainfall.

The technique of shifting cultivation allowed respective family units to farm village land, section by section, in rotation, while portions were left idle or fallow for a time (possibly two or three years) for the bush to regenerate and restore fertility. This system was also beneficial because it helped to check erosion. The new vegetation growing quickly and luxuriantly held the soil firm.

This system appears to have provided adequate supplies of food. Generally, there was a low density of population and no cash crop production. There was also enough land to allow for large plots to be fallow for long periods of time. Table I shows a typical crop rotation on compound land in the Obo area of eastern Nigeria.

Social Structure

In the precolonial period, Nigeria was a very heterogeneous society. In the extreme northwest there existed

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5 H.O.N. Oboli, op. cit., pp. 78-79.
TABLE I
CROP ROTATION CHART ON FAMILY FARM

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<td>Oil Palm, Oranges, African Apples</td>
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<td>Period of Rest</td>
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<td>February</td>
<td>Clearing</td>
<td>Clearing and Burning</td>
<td>African Rice Fruit</td>
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<td>March</td>
<td>Planting of Yams, Maize, and other intercrops</td>
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<td>April</td>
<td>Weeding and Staking of Yams</td>
<td>Planting of Yams, Maize, and other intercrops</td>
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<td>May</td>
<td>Planting of Cocoyams</td>
<td>Weeding and Staking of Yams</td>
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<td>June</td>
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<tr>
<td>July</td>
<td>Maize harvest begins. Weeding, planting of Cassava, Cocoyams as intercrops</td>
<td>Planting of Cocoyams</td>
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<td>August</td>
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<td>September</td>
<td>Early Yam harvest</td>
<td>Planting of Cassava</td>
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<td>October</td>
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<td>November</td>
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<td>Oil Palm, Oranges, African Apples</td>
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<td>December</td>
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the pastoral Fulanis, and, along the southern coast, fishing groups such as the Ijaws. Along with the pastoral Fulanis of the northwest was the Moslem agricultural Hausa group. These people, with their aristocratic chiefs called the Emirs, lived in "Emirates," which are like counties, districts, or municipal areas in a western society. The Hausa/Fulani of the north were rank-conscious, and this area dominated the entire emirate. The south was mainly agrarian, and the social structure was made up of Christians with relatively egalitarian and democratic values. Major ethnic groups in the north were Hausa/Fulani, Kamuri, Nupe, and Tiv; and the southern portion included the Yoruba, Edo (Bini), and Ijaws in the delta area, and the Efiks/Ibibios in the southeast (see Figure 5).

Land Ownership

During the Precolonial era, superior ownership of all land was held by the various tribes. The tribal ownership of land encompassed a complicated co-existence of two legal systems, again divided into a North-South dichotomy. In the north, the Islamic system predominated with its traditional native law and customs that involved a policy of communal use and ownership. In the southern zone, on the other hand, the process of native law and custom was used, which emanated from the traditions of the elders. Land as a property was transferred from father to sons (or sons and daughters)
within a particular family. Its communal nature resulted from joint ownership of land by a group of families.  

Fig. 5--Ethnic composition of Nigeria. [Wealth of Nigeria (Ibedan, Nigeria, 1967), p. 51.]

The nature of land ownership in Nigeria is aptly summed up by a Nigerian chief who said, "I conceive that land belongs to a vast family of which many are dead, few are living, and countless members are still unborn."  

7 For example, in America, certain tracts of land belong to an entire group of Amish people rather than to a specific individual or family.

Marketing System

Nigeria's precolonial agricultural marketing system was the open-air market. Buyers and sellers met in this market and determined a mutually agreeable price through bargaining. The Kano and Kaduna markets in the north were (and still are) leading examples, while the Lagos and the Iddo, Onyigbo, Ibadan, Onitsha, and Calabar Watt markets in the south were similar examples. Food crops and other items were displayed in different stalls to attract buyers. The precolonial peasant farmers also reached their consumers through hawking, by itinerant trading, and in small shops. No "middle men" existed at this time. The precolonial peasant was enterpreneur, middleman, and retailer. The marketers, like the buyers, were both male and female, but the females mostly sold vegetables and fruits.

Division of Labor

Elise Boulding, in *Women in the Twentieth Century World*, states that "Third world women are seen only as breeders and feeders, not as producers, traders, or performers of a variety of community services in the peasant village and the town." This is a classic, over-generalized statement about women's role in precolonial, agricultural Nigeria.

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9 The farmer's market or flea market in America is a practical example of such a market.

Ritchie\textsuperscript{11} also points out that there were traditional sex roles in Africa, and that men and women had complementary roles of caring for the family and society. This notion was intrinsic in the communal life of the precolonial Nigerian peasant. According to a survey by the United States Army, agriculture (pastoralism, arable farming) occupied 78 per cent of both men and women in the labor force. Only 4 per cent of the men relied on wages as a chief source of income; 18 per cent were engaged in crafts, trade, and miscellaneous occupations.\textsuperscript{12} Besides agriculture, women were active in marketing and trades (weaving and sewing). This fact is acknowledged by Boulding in her research on the role of the Yoruba women.\textsuperscript{13}

Division of labor in precolonial agricultural Nigeria in the northern zone was a family enterprise with strict delineation of duties. Men and boys occupied themselves with the cattle, while the women grew a few food crops for family consumption. The women also prepared dairy foods that they sold in the market or exchanged for other foodstuffs. Moslem women did not participate in family-unit work; they tended the family goats, poultry, and sometimes raised crops for their own use. Children were assigned weeding, light cultivation, and harvesting duties.


\textsuperscript{13}Boulding, op. cit., pp. 129-144.
Women in the democratic south controlled petty local trade and had considerable independence. Generally, the division of labor in the south was a family venture; men, women, and children worked designated tasks. Young men in particular, organized themselves into groups according to age and offered their services in return for payment in kind. In the traditional family working unit, the men were responsible for most of the heavy work. They cleared the land for cultivation, dug mounds, and hunted game when necessary. In the Yoruba and Ibo areas the cultivation of commercial or main food crops was the task of the men, whereas subsidiary crops for family consumption—coco yams, cassava, beans, peppers, and other vegetables—were cultivated solely by women. Women's tasks also included the cracking of palm nuts to extract the kernel, shelling groundnuts (peanuts), helping the men with weeding and harvesting their crops, and supplying the family's needs for water and firewood.

The Decline of Precolonial Agriculture

Precolonial agriculture played a useful role in the introduction of certain food-crops (yams, cassava, rice, and millet) into Nigerian society. Farming was the primary occupation during this period, and adequate food was produced to feed the relatively low population. Moreover, the climate, generally characterized as hot and wet, favored grain and livestock farming in the north, while the wet
(rainy) climate of the south, coupled with rich humus soil, promoted arable farming.

The social organizations during this era were an asset to farming. The Hausa/Fulani of the north were efficient pastoralists, and their southern counterparts, the Yorubas, the Ibos, the Ogojas, and the Ijaws, all produced various food crops (yams, cocoyams, palm produce, fish) for consumption. Farming techniques of intercropping and permanent cultivation with sporadic shifting cultivation accounted for sufficient family and community food-crop production in both the northern and southern zones.

Agriculture was efficient, if measured in terms of adequate food production. However, peasant farmers were faced with problems that they could not solve. They were unable to combat or control menacing pests (such as locusts and beetles) adequately. Although the soil was fertile and the weather quite clement, the peasants lacked the heavy farming tools necessary to carry out large-scale farming for an export market. Elementary implements like machetes, hoes, and cutlasses were useful for a one-family or a one-man farm.

Shifting cultivation, though quite useful to the pre-colonial peasants, was recognized as a wasteful process. Oboli notes that shifting cultivation was extravagant and no longer beneficial because there was the need for a more

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expedient use of land for long-range benefits. Socially, the peasants did not want to get involved in mechanized, scientific farming that was to be in vogue in the colonial era. Financially, they had inadequate funds to carry out the more ambitious projects that were to come. Nevertheless, when Nigeria entered the colonial era, the inefficient and anachronistic practices of the precolonial farmer were swept away or reduced to use in marginal areas of little significance.

Summary

In precolonial Nigeria, agricultural emphasis was on food crops. The main techniques of farming, particularly in the north, were pastoralism, permanent cultivation, and intercropping; shifting cultivation and fishing thrived in the south. Apart from the natural handicaps of pests, elementary tools, and little or no funds, the precolonial peasant made good use of soil and the climatic and vegetational conditions of the north to produce sufficient food. In the south enough root-crops (yams, cassava, and a host of others) were produced to feed the masses. There was an open-market system, in which both men and women participated, and the division of labor in farm work through family units was traditional. Men took care of heavy work such as cultivating, tilling, and clearing the bush; women and children weeded, planted, and harvested.
In spite of its normative traditions and its agricultural efficiency, precolonial agriculture declined. Conservative peasants, who had only elementary tools and insufficient funds, could not cope with the growing demands of the colonial era. The advent, around 1800, of white merchants and colonial administration marked the decline of precolonial agriculture.
CHAPTER III

COLONIAL AGRICULTURE

Introduction

During the regimes of Governors Moor and Egerton (1807), significant changes occurred in agriculture. A new era was dawning in Nigeria. New techniques were introduced (terracing and mixed farming) along with new tools to support the innovative techniques. The production of crops, which were once grown only for local consumption, was expanded for export purposes. Farms changed into plantations. Rural labor migrated to these large estates and away from subsistence agriculture. Such migration led inevitably to significant changes in the social structure of the groups that made up the nation. Significant economic changes occurred, especially in the areas of marketing and land tenure. It is the purpose of this chapter to trace these developments and changes.

A Descriptive Background of Colonial Agriculture

The colonial government's earliest attempts to influence economic production were in the areas of forest conservation and the diversification of export crops. Palm-production was developed into an export item as well as cocoa, ground-nuts, timber, and rubber, through the process of forest conservation and diversification of crops. The conservation
of forests was supervised by G. C. Dudgeon. Under his orders cotton cultivation was greatly expanded in British West Africa, and he encouraged the development of other agricultural resources. In 1901, Governor Moor made a Forestry Proclamation that was aimed at the conservation of timber, rubber, and other forest products. It empowered the high commissioner to establish forest reserves and to prohibit, by order, the cutting, collecting, sale, purchase, and export of any forest produce except by licencees. The government also encouraged the cultivation for export of groundnuts and cotton in the northern zone. The British Cotton Growing Association supervised and revived interest in the cultivation of cotton during 1902 and 1903. In the southwestern zone, cocoa and maize were grown with other food crops for export.

Southern Nigeria played an important role in the emerging colonial agriculture. Three-fourths of Nigeria's total exports came from palm produce and forest products. Southern Nigeria also produced all of the cotton, cocoa, and groundnuts that were exported. Tamuno, in The Evolution of the Nigerian State, comments,

Since 1807, the most significant economic development in southern Nigeria was the transition from the pre-colonial emphasis on subsistent agriculture to an increasing concentration on production of palm produce for sale.¹

Farming Techniques and Tools

In Nigeria, the colonial agriculturalists were interested in large-scale agricultural units rather than in small farms. They introduced mechanized agriculture, terracing, and mixed farming, especially in the hilly areas of the northern zone. Thus, well-developed farms of terrace agriculture were located on protected hilltops. These farms represented a natural adjustment to the difficulties of an upland environment, as on the Jos Plateau. Terrace agriculture was useful in preventing erosion; some of the terrace walls were ten feet high. Terracing permitted the heavy use of animal dung as fertilizer to preserve the nutrients of the soil. A simple three-year crop rotation was utilized to minimize depletion of fertility; the crops grown in this pattern were groundnuts, guinea-corn, beans, millet, and sweet potatoes.

Classic mixed farming achieved a balance between crops and animals; draft oxen pulled the ploughs and fertilized the soil. This process helped to eliminate the fallow system. According to Stapleton, the idea of mixed farming was imported from western Europe, but the exact system which suited conditions in Nigeria was developed as an African adaptation. The colonial agriculturalists introduced this system into the northern zone of Nigeria around 1928 with the

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help of the Department of Agriculture. Presently, there are about 20,000 farms that employ mixed farming, mainly in the north-central area of Nigeria, which is the major cash-crop producing area in the entire northern zone. The mixed farming techniques helped to replace human labor with ploughs and animals; it eventually replaced the land-productive system of shifting cultivation because fixed-farming provided an easy means of permanent, rational farming. Ploughs made possible the extension of cultivated acreage and encouraged diversification of cropping. Mixed-farming, as an integration of cropping and animal husbandry, helped to develop techniques and improvements in animal husbandry.

The development of the dairying industry began in the northern zone of Nigeria, where today it is an important element in the agricultural economy of the Jos Plateau area. As early as 1949 and 1950, the dairy industry of the Jos Plateau had an output of 273,500 pounds of butter, 112,000 pounds of clarified butter fat (CBF) and 81,000 pounds of cheese. The industry is based entirely on milk purchased from the Fulani, and the sale of milk represents a very considerable addition to the cash income of that pastoral group. Butter is also manufactured on the Plateau in a

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central depot, Vom, where distribution is made to other parts of Nigeria. Improvement in animal husbandry was a significant contribution of colonial agriculture. In 1958, it was estimated that there were 11,000,000 head of cattle in Nigeria, 26,000,000 goats, 5,000,000 sheep, 1,000,000 donkeys, 250,000 horses, 20,000 hogs, and 83,000 camels.  

Another farming technique introduced by colonial agriculture was irrigated cultivation. Partly because of unfavorable environmental conditions, the contribution of irrigated cultivation to the agricultural output was small. Crops such as sugarcane, rice, and various vegetables were grown on seasonally flooded riverine land throughout the northern zones, notably in the vicinity of the cities of Kano, Zaria, Sokoto, and Bida. With the use of modern machinery and improved water-utilization techniques, the area could be considerably expanded using this form of "natural irrigation." Artificial or man-controlled irrigation, as opposed to natural or flood irrigation, for the purposes of dry-season cropping, occupied a more restricted area. In the drier parts of the Oyo and Ilorin provinces in the southern zone, the use of handscoops for watering the onion crops represented a rudimentary form of irrigation. A more developed technique was practiced in the vicinity of Kano city and Zaria with dry-season crops (onions, carrots and others) which were planted for sale in the adjoining urban areas.

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5Handbook of Nigeria, op. cit., p. 432.
Along with mechanized tools like ploughs, catapillars, and tractors, the colonial agriculturalists used synthetic chemical fertilizers to a great advantage. Fertilizers helped to enrich the sandy loam soil of the northern zone's savannah grasslands. Second, the use of fertilizers allowed the colonial agriculturalists to avoid the wasteful "bush fallow" system of precolonial farming.

Colonial Agricultural Economy

The colonial agricultural economy was made up of cash crops (export crops), plantation agriculture, and forestry, all of which provided a substantial quantity of agricultural products to boost the colonial national income. The principal export crops were palm produce, cocoa, groundnuts (peanuts), cotton, hides, timber, and rubber. The northern zone's crops are essentially annuals (groundnuts and cotton), while the southern zone's are perennials (oil-palm, cocoa, and rubber).

Palm produce.--The oil palm tree is a native of West Africa, and it flourishes throughout the rain-forest belts up to the deciduous forests of the southern zone. It is one of the trees that supplies an oil crop, and it accounts for three-fifths of the agricultural exports. Since World War II, Nigeria has dominated world trade in oil crops such as

6In Nigeria, the word estate is a substitute for the word plantation. Some of the sources refer to plantations as estates.
palm produce and groundnuts. Palm produce consists mainly of palm oil and kernels that contain high-grade palm oil. The oil is used for food and in the manufacturing of margarine, soap, candles, and certain pharmaceutical products (e.g., glycerine). Eighty-five per cent of the oil extraction is done by the "pioneer oil mills," the palm kernel accounts for 52 per cent of the world's palm-kernel exports. Table II shows the importance of palm produce in Nigeria as from 1942 to 1953.7

TABLE II

EXPORTS OF PALM OIL IN TONS

<table>
<thead>
<tr>
<th>Year</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1942</td>
<td>151,000</td>
</tr>
<tr>
<td>1943</td>
<td>135,000</td>
</tr>
<tr>
<td>1944</td>
<td>125,000</td>
</tr>
<tr>
<td>1945</td>
<td>114,000</td>
</tr>
<tr>
<td>1946</td>
<td>101,000</td>
</tr>
<tr>
<td>1947</td>
<td>126,000</td>
</tr>
<tr>
<td>1948</td>
<td>139,000</td>
</tr>
<tr>
<td>1949</td>
<td>170,000</td>
</tr>
<tr>
<td>1950</td>
<td>173,000</td>
</tr>
<tr>
<td>1951</td>
<td>150,000</td>
</tr>
<tr>
<td>1952</td>
<td>167,000</td>
</tr>
<tr>
<td>1953</td>
<td>201,000</td>
</tr>
</tbody>
</table>

Cocoa.—Unlike the palm tree, the cocoa tree is not a native of West Africa; it was introduced from South America during the nineteenth century into the western region of the southern zone where it grows abundantly. The initial export of cocoa in 1895 was twenty-one tons; its export rose to 9,260 tons in 1915 but dropped during the second world war. By 1946, cocoa exports had risen to a level of 100,000 tons, which represents about 13 per cent of world production to date. Table III shows that Nigeria's cocoa production is mainly in the western region of Nigeria, which has been the principal producing area since 1940-1941.8

TABLE III

COCOA PRODUCTION IN WESTERN NIGERIA

<table>
<thead>
<tr>
<th>Area of Production</th>
<th>Quantities Produced in Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagos</td>
<td>6,692</td>
</tr>
<tr>
<td>Agege-Ilaro</td>
<td>8,677</td>
</tr>
<tr>
<td>Ijebu-Ode</td>
<td>12,029</td>
</tr>
<tr>
<td>Abeokuta</td>
<td>3,124</td>
</tr>
<tr>
<td>Ibadan</td>
<td>41,342</td>
</tr>
<tr>
<td>Ife-Ilesha</td>
<td>15,647</td>
</tr>
<tr>
<td>Ondo-Akure</td>
<td>9,610</td>
</tr>
<tr>
<td>Benin-Iwarri</td>
<td>741</td>
</tr>
</tbody>
</table>

Groundnuts. -- Groundnuts were introduced to West Africa from South America by the Portuguese. It is a leguminous (seed bearing) plant that lives on phosphorous compounds found in the soil. The groundnut plant draws nitrogen from the air into the soil. Where groundnuts are grown in rotation with a crop such as guinea-corn which need nitrogen, the fertility of the soil can be maintained to some extent. The production of groundnuts for export was made possible by two technical developments. First, the perfecting of the hydrogenation process in 1903 made possible the large-scale utilization of the oil in food industries. Second, the extension of rail transport into Nigeria's northern zone decisively linked this formerly inaccessible area with the world trade network (the railway reached Kano in 1912).

Today, Nigeria, one of the world's leading exporters of groundnuts, supplies approximately one-third of the world's market for groundnuts. Groundnuts, groundnut oil, and oil-cake comprise 25 per cent of the total exports. The production of shelled nuts in 1959 and 1960 amounted to 910,000 metric tons, of which about 200,000 were consumed locally.

Table IV shows the production of five major export groups in the four West African countries of Nigeria, Gambia, Ghana, and Sierraleone. Also these export crops are generic type for West African countries.

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9 Pedler, op. cit., p. 65.
TABLE IV
ANNUAL AVERAGES OF EXPORT CROPS IN FOUR WEST AFRICAN COUNTRIES (1948-1953)

<table>
<thead>
<tr>
<th>Export Crop</th>
<th>The Four Countries of West Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tons</td>
</tr>
<tr>
<td>Groundnuts, shelled</td>
<td>278,000</td>
</tr>
<tr>
<td>Groundnuts, unshelled</td>
<td>63,000</td>
</tr>
<tr>
<td>Groundnut oil</td>
<td>6,000</td>
</tr>
<tr>
<td>Cotton</td>
<td>13,000</td>
</tr>
<tr>
<td>Palm oil</td>
<td>169,000</td>
</tr>
<tr>
<td>Hides and skins</td>
<td>18,000</td>
</tr>
<tr>
<td>Timber</td>
<td>545,000</td>
</tr>
</tbody>
</table>

Cotton.—Cotton has long been a common crop in Nigeria. It provides fibre for the local weaving of cloth by a farmer's family or by craftsmen in a local town. The search by British cotton-cloth manufacturers for a steady source of supply, and the interest of firms trading with the colonial administration in developing trade and production in Nigeria, led to the formation of the British Cotton Growers Association early in this century. The first experiments in the southern zone (Moors Plantation in Ibadan, one of the first large centers) were not commercially encouraging. The northern zone held out more hope, and as soon as the railway was opened (to Zaria in 1910), a cotton gin was established there and production began. Cotton ranked fourth as an export
commodity in 1958 (the production of cotton lint and cotton seed in 1959-1960 was 33,000 metric tons and 92,000 metric tons, respectively). About 98 per cent of the cotton is grown in the northern zone; the other 2 per cent is grown in the western area of the southern zone. Zaria, Sokoto, and the middle belt contain most of the cotton acreage.

Hides and skins.--The production of hides and skins takes place mostly in the northern zone where the grasslands favor the breeding of livestock. Nigeria is the chief exporter of hides and skins in West Africa, and the commodity ranks eighth in order of value among Nigeria's exports. Also, the tanning of leather, along with the making of footwear and other objects, is one of the six leading handcrafts in Nigeria, with an output worth of 8,600,000 British pounds\(^\text{10}\) per year, while exports of goat and sheep skins in 1955 totalled 3.5 million tons, worth 1,925,000.\(^\text{11}\)

The opening of the export trade in hides and skins, as with groundnuts, depended largely on the Lagos-Kano railway that was opened in 1911. According to Pedler, in 1910 a total of 176,000 pieces of hides and skins were produced. In 1911 production was doubled to 332,000 pieces. Production tripled in 1912 to 813,000 pieces, and it quadrupled in

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\(^{10}\)The monetary exchange for a British sterling pound (\(£\)) is equivalent to three (\$3) American dollars, approximately.

\(^{11}\)Buchanan and Pugh, \textit{op. cit.}, p. 123.
1913 to 1,128,000 pieces. Finally, 1914's production was quintupled to 2,764,000 pieces of hides and skins.12

Forestry.--In 1958-1959, Nigeria's sixth-ranked export was logs and timber. The western region of Nigeria exported timber valued at $11,000,000; the eastern region's export was valued as $840,000, and the northern region's export at $40,000. The leading timber export is comprised of more than twenty varieties of mahogany. In addition, about 12 million cubic feet of timber was used internally, largely for telephone poles and railway ties. Besides supplying timber, rubber, sheanuts, and gums, the forests provide a variety of fibers that are processed in homes and by local industries. About 9,000 square miles, mostly in the western region, is considered to be economically valuable forest land. Forest resources support important lumber and plywood industries on the coast. Table V illustrates the expansion of the timber industry in Nigeria.13

Marketing System

The colonial community, with its development of industries and export crops, had a type of marketing system based on monopolistic competition. There were large numbers of sellers (both private persons and firms) acting independently, coupled with product differentiation (like various export

12Pedler, op. cit., p. 69.
13Ibid., p. 73.
TABLE V
PRODUCTION OF TIMBER IN NIGERIA (1948-1953)

<table>
<thead>
<tr>
<th>Year</th>
<th>Sawn Timber</th>
<th>Logs</th>
<th>Sawn Timber</th>
<th>Logs</th>
<th>Plywood, Veneers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948</td>
<td>1,430</td>
<td>11,200</td>
<td>630</td>
<td>2,620</td>
<td>330</td>
</tr>
<tr>
<td>1949</td>
<td>1,980</td>
<td>12,050</td>
<td>865</td>
<td>2,360</td>
<td>360</td>
</tr>
<tr>
<td>1950</td>
<td>2,600</td>
<td>19,600</td>
<td>1,340</td>
<td>4,990</td>
<td>360</td>
</tr>
<tr>
<td>1951</td>
<td>3,570</td>
<td>25,980</td>
<td>2,210</td>
<td>8,260</td>
<td>500</td>
</tr>
<tr>
<td>1952</td>
<td>3,930</td>
<td>15,230</td>
<td>2,330</td>
<td>4,430</td>
<td>570</td>
</tr>
<tr>
<td>1953</td>
<td>5,762</td>
<td>19,981</td>
<td>3,198</td>
<td>6,462</td>
<td>611</td>
</tr>
</tbody>
</table>

crops and the processes of shipping for trade). Every seller had good knowledge of the market with the commodities. The marketing boards and their agents played the role of entrepreneur on one hand; on the other hand, the boards played the role of middleman as well as wholesaler, particularly when it adjusted the price of commodities to suit both seller and buyer. The role of the marketing boards was assisted by the Nigerian Produce Marketing Company, Limited. This was because the produce company stored and tested some of the cocoa and palm produce before shipping. Marketing boards combined with the produce company was more of a government-sponsored body. Then came an association of Nigerian cooperative exporters that competed with
foreign-owned firms like the African Trading Company and the United African Company. The cooperatives acted as an agent for the Western Region Marketing Board. Prices were established in advance through consultation with the marketing boards and their sales agents. This process gained uniformity throughout Nigeria. The notion of monopolistic competitive marketing system is summed up by Wilcox and others, who say that "the pattern of control in the Nigerian economy is mixed, not only in respect to the extent of foreign domination but also to the character of ownership and degree of intra-industry competition." 14

The Role of the Marketing Board

According to Stapleton,

The general function of the board defined in the ordinance of that Board is as follows: It shall be the duty of the Board to secure the most favourable arrangements for the purchase, grading, export and marketing of Nigerian cocoa and to assist the development by all possible means of the cocoa industry of Nigeria for the benefit and prosperity of the producers'. The other marketing boards exercise similar general responsibility . . . for scientific research. 15

In order to carry out the aims of the ordinance, the boards used strong monopolistic powers. They fixed the price of all produce, exported all produce, and sold all produce through the Nigerian Produce Marketing Company, which they


15 Stapleton, op. cit., p. 187.
controlled in London. The boards allowed no private purchasing or marketing, and they appointed certain trading companies as their buying agents, paying a regulated commission. To maintain the quality of the agricultural products, the boards arranged for compulsory grading and inspection of produce. Thus the marketing boards existed as one of the most important factors in the economic life and financial structure of Nigeria. Stapleton cites Bauer:

The produce marketing boards are the most powerful influence in the economic life of the four countries (Nigeria, Ghana, Gambia, Sierra Leone). By their comprehensive nature and their statutory powers the organizations controlling West African exports present instances of monopoly power not approached in any other sector of West African trade; and their operations have far reaching influence on the well-being of these territories.  

The Role of Plantations

Plantation agricultural development in Nigeria evolved first through the production of perennial tree crops like rubber, palm produce, and cocoa. The areas in which these perennial crops are grown are heavily populated. The major advantages of plantation agriculture are (1) specialization of trained labor; (2) access to capital for improvements; (3) internal research and ease in putting into effect new knowledge from outside; and (4) quality and consistency of product. Figure 6 shows the major agricultural development plantations or estates in Nigeria.

16Ibid., p. 186.
Fig. 6--Agricultural plantations in Nigeria. [K. M. Buchanan and J. C. Pugh, Land and People in Nigeria (London, 1962), p. 164.

Stapleton\(^{17}\) and Buchanan and Pugh\(^ {18}\) among others, predict an active future for plantation economy in Nigeria. Their prediction is focused on the fact that plantation

\(^{17}\)Stapleton, op. cit., pp. 146-149

\(^{18}\)Buchanan and Pugh, op. cit., pp. 158-159.
economy in Nigeria. Their prediction is focused on the fact that plantation economy emerged as a result of deliberate government policy and not the operation of free market conditions. Although the emergence of plantations has disrupted the socioeconomic order, and some parcels of private lands have been utilized for plantation projects, the authors still contend that it would behoove the Nigerian government to develop plantations to a highly sophisticated status to enhance Nigeria's agricultural image in the world market.

Beckford\(^\text{19}\) takes a different approach in his study of plantation societies in the Caribbean, the United States, and Brazil. Beckford points out that plantation economy is a product of colonial expansion and remains today as a solid, social institution. The plantation is a social system as well as an economic system that is similar to a bureaucracy. As an economic system, plantation economy brings economic development in the form of good roads, railways, ports, water supplies, and mechanization. The plantation expands its production to boost the national income because of export-orientation and further stimulates scientific agriculture based on research. On the other hand, plantation economy has an effect on population growth in that its development reduces the incidence of epidemics and communicable diseases (such as malaria and yellow fever, which are often associated

\(^{19}\)George L. Beckford, Persistent Poverty (Underdevelopment in Plantation Economies of the Third World (New York, 1972), pp. 3-8, 30-233.
with plantation development) that keep mortality rates at high levels. That is, the clearing of swamps, and the introduction of preventive medicine associated with hospitals and clinics brought in by plantations, have a potent effect on population growth. Immigration of labor for plantation work brings a rapid redistribution of population, too.

Beckford sees the plantation cast in a rigid pattern of social stratification. Economic production and achievement motivation engender a social ethos of strong individualism. Individuals are forced to compete with each other; there is interpersonal rivalry to secure land and jobs in order to win favor with plantation owners. The labor force of the plantation is composed of the poor, and economic rewards are reserved for a small elite.

Beckford's picture of the plantation as an economic institution is not completely applicable to Nigeria's plantation system. Plantations serve as agricultural industries. In Nigeria they produce various export crops and also some food crops to enrich the national income and increase domestic consumption. There is no doubt, according to Beckford, that the establishment of these plantations in various sites like Cross River State, Anambra State, Western State, and others, has led to economic development in the form of good roads, railways, water supplies and a host of others. For example, plantations for rubber, cocoa, and oil-palm in Nigeria solely depend on good roads, water supplies,
and ports for its industrial production. Moreover, the first use of chemical fertilizers was based on agricultural research in plantations.

Plantation economy has contributed to the industrialization of Nigeria. Products like dairy foods need cold storage to preserve a large quantity for sale. The canning industry at Vom in the Benue Plateau State is a typical example of an industrialized company, as is the milk and ice cream factory at Ikeja in the Western State. Nigeria, because her large expanse of equatorial rain forest, is a natural habitat for the anopheline and stegomaya mosquitoes that spread malaria and yellow fever. Once the plantations were established, efforts were made to combat these insects; the result is that medical technology and the fumigation of stagnant pools helped considerably in their control. This check on disease has decreased the mortality rates. Finally, it should be pointed out that in all the plantation locations, there are medical centers with well-equipped hospitals. Development of this nature is invaluable not only to the plantations, but also to urban and suburban dwellers as well.

Beckford's thesis is tied to a rigid pattern of social stratification. This fact may be valid in other Third World Countries, but it is less so in Nigeria. The Nigerian plantation system is bureaucratic. Plantations are controlled by management teams, and some of them have been absorbed into local government machinery. Nigeria's plantation labour is
made up of skilled and unskilled, indigenous citizens. The economic rewards are more evenly distributed among these workers than Beckford's thesis would allow.

**Land Ownership**

Communal land ownership of the precolonial agricultural era did not entirely eradicate land disputes or unlawful encroachment. Hence, the British colonial administrators made stringent policies to insulate the land owners from any form of disputes and illegal seizure of land. The policies recognized the traditional chiefs and councils as native authorities. Laws and rules were passed as to how the native authorities could use their customary powers, which affected the functions of chiefs regarding the allocation and control of land. One of the first acts of the Protectorate government in the northern zone was the Land Proclamation of 1900. According to this proclamation, no person who was not a native of the Protectorate could acquire land from a native without the consent of the government. In 1916, another law declared all the land to be native land and under the control of the governor, who issued titles for its use and occupation. In 1940, another control-of-lands law was passed that empowered certain native authorities in the northern zone to grant certificates of occupancy for land in cities. In the cities in the southern zone (e.g., Ibadan, Benin), the right to lease city plots had long been exercised by the native
authorities as their customary right. In 1945 this power was conferred on native authorities generally by law. In the same year, all native authorities in Nigeria were given the power to make rules for the control of transfers of land, whether to strangers or local people.

On the other hand, the policy of preserving the land for the natives did not exempt the natives from the effects of competition. Though land could not be sold, the pledging of land (i.e., land serving as a security for debt or obligation) became common, with the consequence that rights of cultivation passed into the hands of moneylenders. Family heads and chiefs often found it profitable to bring in workers from other tribes to plant cash crops, on terms of crop-sharing, which sometimes took advantage of the weak competitive position of the migratory workers.

The Decline of Colonial Agriculture

Unlike precolonial agriculture, which declined as a result of poor finance and the inability to check the influence of pests, colonial agriculture declined through political changes that affected Nigeria as a Republic. Political influence became the most dominant of all institutional influences when Indirect Rule was launched in 1900 by Lord Lugard. A series of other political changes including regionalization, self-government in 1959, Independence of 1960, and Republicanism of 1963 are transitional changes that marked the decline of the colonial agricultural era.
Summary

The period 1898 to 1914 is significant in the history of Nigerian-colonial agriculture. During this period, colonial administration influenced agriculture, education, politics, religion, and trade, and it conserved forests and produced export crops. To enhance the yield of export crops, the colonial agriculturalists used ploughs, fertilizers, terracing, and mixed farming as their major tools and techniques. As a consequence, fixed farming gave birth to animal husbandry. Irrigated cultivation was helpful in the arid areas of the northern zone and during the Independence-Republic era. These farming techniques and tools produced a bouncing colonial economy with principal export crops like palm produce, cocoa, cotton, timber, and hides. The African Trading Company and the United African Company acted as controlling agents of the economy in conjunction with the government. The plantation system came into being with its subsequent economic developments in the form of population increase, control of mortality rates through medical technology, industrialization, and migration of labour. The Nigerian plantation system is an agricultural industry per se, and it serves as a corporate body, producing both export crops and local foods. Nigeria's advancement to a status of Republicanism called for removal of all colonial vestiges. Hence, the colonial agriculturalists, who were part and parcel of the colonial administration, returned home. But their
agricultural techniques did not return with them because these techniques had diffused into Nigerian society.
Introduction

Nigerian independence in 1960 ushered in a new era in agriculture. Changes were mainly carried out or sponsored by the federal government in collaboration with the respective state governments of Nigeria. These changes included modern, labour-saving devices that appeared as a result of the construction of dam projects on water resources. Technological changes occurred, such as spraying of cocoa trees against bugs, the use of chemical fertilizers to increase the fertility of the soil, and the use of heavy equipment that cope with the huge agricultural task. Besides technological changes, there are new philosophical approaches to agriculture. The United Nation's emphasis on "ecological zones" was introduced, which ushered in the use of companion crops and crop production schemes. The Nigerian federal government fostered progress in agriculture through the implementation of the Third National Development plan of 1975-1980. This plan involves a nation-wide operation, called Operation Feed the Nation, and it established the Nigerian Agricultural Bank as its backbone. This chapter discusses in detail these and related agricultural developments since 1960.
Dam and Water Resources Projects

Soon after Independence, the federal government set up river basin authorities. These projects began in 1963 when the United Nation's Food and Agricultural Organization (FAO)\(^1\) embarked on a study\(^2\) of the land and water resources of the Sokoto-Rima River Basin. This study, which was completed in 1968, recommended a phased development of the basin by the construction of a number of dams to irrigate about 200,000 hectares of fertile land which is suitable for the cultivation of rice, wheat, sugar-cane, and some other crops. Also, in 1964, the Lake Chad Basin Commission was founded with membership drawn from all the neighboring countries sharing the basin of the lake, which are Nigeria, Niger, Chad, and Cameroun. In 1965, the commission requested the United Nations Educational Scientific and Cultural Organization and FAO to conduct feasibility studies of the land and water resources of the Lake Chad Basin. These studies, completed in 1970, showed that the Nigerian side of the basin has more than 40,000 hectares of fertile land which could be irrigated with water from the lake. The acceptance of the reports on the Sokoto-Rima River Basin and the Lake Chad Basin by the federal government led to the establishment of the Sokoto-Rima-

\(^1\)These are humanitarian organizations. FAO, established in 1945, functions to raise levels of nutrition; UNESCO, established in 1946, contributes to education, science, and culture.

River Basin Development Authority and the Chad Basin Development Authority in 1973. Similarly, the United States Agency for International Development (USAID)\(^3\) began a study of the Kano River Basin, which culminated in the establishment of the Kano River Project and the construction of the Tiga Dam by the Kano state government. As a result of the success of the Sokoto-Rima River Basin Development Authority and the Chad Basin Development Authority, coupled with the determination of the federal government in ensuring that the entire water resources of the country should be developed, the government decided that the whole country should be divided into eleven river-basin development authorities. Therefore, in June, 1976, the federal government promulgated Decree No. 25, titled\(^4\) "River Basins Development Authorities Decree, 1976," which established the following River Basins Development Authorities. (1) The Sokoto-Rima River Basin Development Authority; (2) The Hadejia-Jama'are River Basin Development; (3) The Chad Basin Development Authority; (4) The Cross River Basin Development Authority; (5) The Upper Benue River Basin Development Authority; (6) The Lower Benue River Basin Development Authority; (7) The Anambra-Imo River Basin Development; (8) The Niger River Basin Development Authority; (9) The Ogun-Oshun River Basin Development; and (10) The Benin River Basin Development Authority.

\(^3\) USAID of America issues aid to developing nations of the world.  
eleventh River Basin Authority, the Niger Delta Basin Development Authority, was established in August, 1976, by the federal military government. This authority was set up under a separate decree,\(^5\) No. 27, in order to give it the powers needed to cater to the special development needs of the Niger delta, which is predominantly riverine.

The functions of these river basins development authorities are (1) to undertake comprehensive development of underground water resources for multipurpose use, (2) to undertake schemes for the control of floods and erosion and for watershed-management, (3) to construct and maintain dams, dykes, polders, wells, bore-holes, irrigation and drainage systems, (4) to develop irrigation schemes for adequate production of food crops and livestock, (5) to lease the irrigated land to farmers or recognized associations in the locality of the area concerned, (6) to provide water from reservoirs, wells, and bore-holes for urban and rural water supply schemes in their areas of operation, (7) to control pollution in rivers and lakes within the areas of operation in accordance with national standards, (8) to resettle persons affected by the Authorities' work under special resettlement schemes, (9) to develop fisheries and improve navigation on the rivers, lakes, reservoirs, and lagoons, (10) to process crops with livestock in collaboration with the National

\(^{5}\text{Ibid.}, p. 3.\)
Electric Power Authority (NEPA), and (11) to serve as a source of generating electricity to certain parts of the country.

Technological Changes

Technological changes in Nigeria's agricultural institution were significant in this period. For example, the cocoa trees were sprayed against capsid bugs or black shot. This pest had decreased the cocoa yield, but the introduction of the spraying, particularly in the southern zone, increased the cocoa yield by 20 per cent;\(^6\) cocoa output per acre of land also has tripled. Between 1978 and 1980, six states (North Central, North Eastern, North Western, Kano, Kwara, and Benue Plateau) in the northern zone plan to purchase insecticide, pesticide, herbicide, and spraying equipment. The federal government also is expected to make significant purchases during this period too.

In addition to the spraying method, the use of chemical fertilizers as a technological change is very helpful to Nigerian agriculture. A National Fertilizer Board has been established by the government. This board is vested with the responsibility of purchasing the distributing fertilizers to state governments at subsidized prices as may be approved by the federal government. There was a financial provision

of about $105 million for the purchase of chemical fertilizers under the 1975-1978 National Development Plan. The use of agrochemicals as specialized fertilizers for crop production on irrigated lands is in progress now. In addition to the specialized and chemical fertilizers and soil conditioners, storage and transport facilities are used to foster the effect of fertilizers.

Around the semi-arid land in the northern zone, there is a tremendous land development scheme aided by technology from America and United Kingdom. The land development in this area utilizes equipment and services in the form of consultations (especially feasibility studies), design and construction engineering, sprinkler and gravity irrigation systems, pumps, pipes, generators, earthmoving equipment, and grain storage facilities. A majority of the 16,200 hectares presently under irrigation are fed by gravity systems. Sprinklers are becoming more popular, while the Nigerian sugar company at Bacita in Kwara State is investigating the use of an American manufactured drip system. On the other hand, much earthmoving equipment will be needed for irrigation projects, particularly those involving dams, since almost all of the dams to be built will be composed of landfill. At the same time there are significant purchases of bucket loaders, crawler tractors, and motorized scrapers to facilitate these endeavors.
U.N.'s Technical Assistance Programme and Crop Production in Nigeria

Like the technological changes that boosted the output of Nigerian agriculture, United Nations' technical assistance made it more efficient in that it provided Nigerian agriculture with technical know-how and the needed technicians, agricultural experts, and engineers. Nigeria was one of the three countries in Africa that received a lion's share in the 1964-1965 United Nations Expanded Programme for technical assistance. As part of the technical assistance, Nigeria, assisted by FAO, tremendously increased its use of chemical fertilizer between 1960 and 1965. The FAO also organized a regional agricultural research scheme in Africa which classified Nigeria, Ghana, and Sudan as similar "ecological zones," or areas with similar environmental conditions. The FAO suggested the need for agricultural research in the areas of finance and manpower deficiencies. The implementation of the FAO's research recommendations helped to increase the agricultural production of rice, cotton, and maize through the western zone city of Ibadan's Agricultural Development scheme. The West African ecological zones, which are located in Nigeria and Ghana, offer the potential for a fundamental breakthrough in agricultural research which would benefit most African countries.

Ibid., p. 17.
The research motivated by the FAO also had an impact on the research in Nigerian Universities. For instance, the Institute of Agricultural Research in Ahmadu Bello University in Zaria conducted research to show how undersowing could provide a means of controlling weeds and increase production of plants. This research on undersowing is technically known as "the use of companion crops." Chloris gayana, a kind of cover crop, achieved a remarkable success when companion-planted with millet; mucana, another companion crop, thrived very well with maize. In the savannah grassland of northern Nigeria, the Institute of Agricultural Research also proved that maize and soya beans are very suitable companion crops.

The concept of ecological zones inspired crop production in a prolific manner. In the whole country, three main ecological zones were designated. One is the rain forest zone in the south, covering the Western, Midwestern, East-Central, Cross River, and Rivers states. The most important crops of this zone are cocoa, palm oil, and rubber. Cassava, yams, and cocoyams are the main locally consumed food crops, followed by maize and rice. Another area is the Guinea zone that encompasses the middle belt of Nigeria, specifically around Kwara and Benue-Plateau States, together with the southern portion of the Northeastern State. The principal crops produced here are sorghum, peanuts, and cotton. On the other hand, most of Nigeria's output of sorghum, millet,
cowpeas, cotton, and peanuts is grown in the northern, dry Sudan zone, the third zone, comprising Kano and the northern parts of the North-western, North-central, and North-eastern states. Rice, sugar-cane and tobacco are grown in the flood plains of the rivers. This northern area is also the main cattleraising area.

**Third National Development Plan (1975-1980)**

The Third National Development Plan of 1975-1980 aims at developing the semi-arid lands in the six northern states as a major step to boost crop production. In this project of semi-arid land development, the federal government plans to spend $447.5 million in planning and constructing irrigation facilities in order to close the gap between food demand and production. It is also estimated that technology, services, and equipment will be needed to irrigate and cultivate 440,000 hectares. In addition, $9 million has been earmarked for irrigation feasibility studies during the plan period which brings the estimate to a total of $486.5 million. Major project profiles include the following project areas.

(1) **South Chad Irrigation Project**—the federal government will irrigate 40,467 hectares south of Lake Chad;

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(2) Mada River Project--there is a federal project to irrigate approximately 30,350 hectares of small holdings;

(3) Baga Polder Project--the federal government plans to construct a fifty-kilometer polder and auxiliary irrigation hectares in north-eastern state;

(4) Karaduwa Project--a federal project in north-central state involving four irrigation dams and the development of 32,000 hectares (no feasibility study has yet been done);

(5) Gari River Irrigation Project--Kano State will undertake the development of land and water resources where about 4,000 hectares are to be irrigated by 1980;

(6) Challowa George Dam Project--Kano State plans to construct a major earth dam to supply 182,880 hectare-meters of water for down-stream irrigation projects;

(7) Tada-Shonga Rice-Production Project--Kwara State plans to develop a nucleus estate to be surrounded by 400 small farms; approximately 2,145 hectares are to be developed within the plan period;

(8) Kwara Food Production Company Irrigation Projects--various projects are to be financed by this progressive Kwara State (Ilorin-based) agency;

(9) North-central State Projects--projects include Kangimi in the Kaduna River Basin, Galma, Daberan, Kagroro, Ajiwa and Birnia-Gwari, most of which are at either the
feasibility study or design stages (except for Kangimi where construction work is expected to begin soon);

(10) Small Dam Irrigation Scheme--north-eastern state plans a feasibility study of small to medium-size dams in preparation for the construction of two or three small dams out of a proposed twenty;

(11) Bakogi Irrigation Scheme--north-western state plans to construct a dam to irrigate roughly 2,000 hectares of land for multiple cropping.

Erosion from wind and water is another major problem that the state and the federal government have to solve in northern Nigeria. As a part of the Third National Development Plan, and state and federal government designed soil conservation programmes at a cost of $31.5 million. Included in the programmes are the establishment of a National Institution of Water Resources, a soil and water conservation training center, and field measures which include contour diking, the erection of shelter belts, terracing, and check damming. American "know-how," derived from experience in semi-arid areas of the western part of the United States, has played an important role in semi-arid land development because of the technical assistance rendered by USAID programs.
"Operation Feed the Nation" (OFN) and the Nigerian Agricultural Bank (NAB)

The concluding phase of the Third National Development Scheme of 1975-1980 is the launching of a programme called "Operation Feed the Nation," popularly known as "OFN." This programme aims at an effective mobilization of the human and material resources for the achievement of self-sufficiency in food production. "Operation Feed the Nation," an integral part of the government's agrarian program, has been christened by some as "The Green Revolution." Under this program the government encourages and provides incentives to schools, colleges, universities, organizations, and individuals to participate and contribute their resources in tackling the problems of food production. Also the Nigerian Government has approved the sum of $30 million under its current capital budget for the establishment of 182 agroservice centers throughout the country. When fully established, the centers will help to bring within easy reach of Nigerian farmers all agricultural aids (such as fertilizers, improved seeds, credits, and agricultural machinery) and supporting services (such as storage and extension). As a major advantage to the people, this program has substantially reduced unemployment by employing jobless Nigerians who are trained in the application of modern agricultural techniques.

Assessing the impact of OFN, Federal Nigeria predicts that the program will cut down the soaring prices of
Second, it will help conserve Nigeria's foreign exchange by eliminating the need for the importation of food. Finally, OFN will contribute to the foreign exchange earnings of Nigeria since it will substantially increase the production of cash crops for export.

"Operation Feed the Nation" can not thrive without money. Therefore, the Nigerian government established an agricultural bank to operate in collaboration with other banks in the country. The agricultural bank was inaugurated with an Agricultural Credit Guarantee Scheme Fund of $160 million. The bank is empowered to grant loans to farmers and other agric-organizations to carry out the following purposes.

(1) The establishment or management of plantations for the production of rubber, oil palm, and cocoa;

(2) The cultivation and production of cereals and crops such as tubers, fruits of all kinds, cotton, beans, ground-nuts, sheanuts, beniseed, vegetables, pineapples, bananas, and plantain; and

(3) Develop animal husbandry, i.e., the rearing of poultry, swine, and cattle, and fish farming.

Presently, the agricultural bank has made loans to farmers who are engaged in 119 agricultural projects in various parts of Nigeria.

\[11\text{Federal Nigeria, 1 (October-December, 1976), 14-15.}\]
Summary

In the era of Nigerian independence, agricultural progress commenced with the establishment of national dam-water resource projects that are charged with the multi-various duties of controlling floods, erosion, constructing of dams, dykes, polders, irrigation, and drainage systems. All these duties are geared toward the common goals of massive production of crops and livestock. Among other duties, the river-basin authorities resettle persons affected by their works and schemes, develop fisheries, and improve navigation on the rivers, lakes, reservoirs, and lagoons. The dam-water resources, through their river basins projects, serve as a source of harnessing electricity. Technological changes act as an incentive on Nigerian agriculture such as increased production which resulted from the spraying of cocoa trees against capsid bugs, and the control of weeds with the use of herbicides like Kokotine and Gamalin "20." The use of fertilizers and agrochemicals as specialized fertilizers also helps to enrich poor soil and increase crop yields. Sophisticated imported technology assists tremendously in the semi-arid lands of the northern zone. The U.N. technical assistance programme, mainly spearheaded by the FAO and UNESCO, introduced technical assistance in the form of chemical fertilizer to Nigerian agriculture around 1964-1965, and defined the ecological zones of West Africa. The notion of ecological zones led to a research-oriented innovation in
the use of companion crops that act as weed control. The center of research for companion crops was founded in Ahamadu Bello University, manned by the Institute of Agricultural Research. An essential attribute of the ecological zone scheme led to prolific production of food and export crops of 1971-1974 in the ecological areas of the rain forests in Guinea and Sudan. The entire effort of increased government participation was enveloped in the Third National Development Plan of 1975-1980. This plan concentrated on developing the semi-arid lands of the six northern states (North Central, Eastern, Western, Kano, Kwara, and Benue-Plateau States). In each of these states, river irrigation and dam projects were constructed to improve the nature of the semi-arid lands. Erosion from wind and water is being tackled in the Third National Development Plan through the construction of a $31 million soil conservation project, which is technically assisted by USAID. In order to benefit from all these technical changes, the federal government launched a campaign for agriculture called Operation Feed the Nation. The organization enlists all Nigerians at government and private levels to engage in agricultural pursuits to feed the population of Nigeria and check any excessive expenditure on importation of foods. OFN is also an employment complex for jobless Nigerians; it is assisted by the Nigerian Agricultural Bank that was
established to grant loans to indigenous farmers who seek to augment food yields through large-scale farming.
CHAPTER V

THE IMPACT OF AGRICULTURE ON OTHER SOCIAL PHENOMENA

Introduction

The history of agricultural changes in Nigerian society has been the subject of previous chapters. This chapter is an overview of the effect of agriculture on other social institutions such as population, family, industrialization, urbanization, and education.

Population

Population size is dependent on the potential for agricultural production. One aspect of agricultural potential is found in the environmental features that serve as a sub-stratum in which agriculture will thrive, such as climate, physical features, vegetation, and soil. Nigeria has a tropical climate characterized by year-around hot and wet seasons. Northern Nigeria is hot and dry from October through April, and semi-arid in the wet season from May through September; this type of climate favours a grainary agriculture. Also, northern Nigeria's climatic conditions and its grassland vegetation makes it suitable for pastoral farming, which is a major occupation of the people in this area.
The thick, equatorial, rain-forest vegetation of southern Nigeria helps to breed game, and it is a congenial environment for arable farming. In terms of physical features, Nigeria has twin rivers, called the Niger and the Benue, which water much of her farmlands. Farms not watered by these rivers get their water through irrigation and dam projects. The tableland (plateau) of the northern zone provides a cool, mountainous climate for the livestock and the pastoralists, while the southern delta-riverine serves as rich fishing grounds for the southern fisherman. Of all these features, Nigerian soil, which is largely composed of sandy-loam soil in the north and humus-alluvial in the south, promotes agricultural growth. These features encourage large agricultural yields in the prevalent forms of mixed-farming in the north and arable farming in the south. Nigerian people have benefited greatly from agricultural development based upon these features. Grove, in Essays on African Population, says,

Mixed farming, whereby a farmer keeps cattle to provide manure for his fields and to draw a plough, has made considerable progress in the last thirty years, and in the seven years after the war, numbers of mixed farmers in northern Nigeria increased from 2,000 to 10,000. Progress since 1952 is difficult to access, but in 1960 more than 20,000 farmers were probably using ploughs drawn by cattle. Mixed farming has been most popular in areas with moderately heavy population densities of 150-200 persons to the square mile.

In the southern zone, the same institutional relationship prevails within the "cocoa belt" area of southwestern Nigeria.

The economic factor gained in importance when wider trade relations, better communications and cash-crop farming were developed under the colonial administration. Today the principal areas of town development coincide with the core area of high population density among the Yoruba in the "Cocoa Belt," which is the most prosperous part of the western region.²

Plantation growth has influenced Nigerian population. Plantation settlements attract labour from rural areas to urban and suburban centers. Ninety-two per cent of the people in the small town of Eruwa (8,154) are engaged in agriculture; and in the large towns of Ogbomosho (139,535), Oshogobo (122,728), and Iwo (100,006) agriculture employs between 60 and 70 per cent of the people. Similarly, Arnold asserts that agriculture contributes immensely to employment by maintaining an active population: "Agriculture and rural development is and must remain the most important single activity in the economy, for it provides the livelihood for the great majority of the population."³ Arnold further substantiates his assertion with a table showing how agriculture enhances employment in the whole of Nigeria compared to other institutions such as mining and manufacturing. Table VI reproduced from Arnold's book,⁴ illustrates this fact.

²Ibid., p. 281.
⁴Ibid., p. 72.
TABLE VI

EMPLOYMENT DISTRIBUTION IN NIGERIA IN 1975

<table>
<thead>
<tr>
<th>Area of Employment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>64.0</td>
</tr>
<tr>
<td>Mining and Quarrying</td>
<td>0.4</td>
</tr>
<tr>
<td>Manufacturing and Processing</td>
<td>16.8</td>
</tr>
<tr>
<td>Construction and Building</td>
<td>0.9</td>
</tr>
<tr>
<td>Electricity, Gas, Water</td>
<td>0.1</td>
</tr>
<tr>
<td>Distribution</td>
<td>12.2</td>
</tr>
<tr>
<td>Transport and Communications</td>
<td>0.6</td>
</tr>
<tr>
<td>Services</td>
<td>5.0</td>
</tr>
</tbody>
</table>

The medical research and facilities that result from agricultural improvement have made another important impact upon population growth.5 Beckford contends that the plantation system as a social institution generates environmental health because harmful insects and pests are controlled. This is significant in Nigeria because the presence of mosquitoes (anopheles and stegomaya) that spread malaria and yellow fever is dangerous to the population. Thus, with the emergence of plantation economy, medical practitioners and advisers in Nigeria attacked the mosquitoes by fumigating the stagnant pools that serve as their breeding grounds. Well-equipped medical centers and hospitals have been set up

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for plantation workers and their families. Medical research has helped a great deal through the introduction of new drugs and methods of combating malaria and yellow fever.

The inauguration of Operation Feed the Nation by the Nigerian government is an attempt to meet the demand of Nigeria's growing population. Regarding Nigeria's population growth rate, Guy Arnold\(^6\) states that population is growing at a rate of nearly 3 per cent per annum and will double in twenty-five years. Agricultural output is only growing at a rate of 2 per cent per annum. The United States Population Reference Bureau in Washington, D. C., points out that Nigeria's birthrate as of 1974 was 49 per 1,000 persons, while the death rate is 23 per 1,000 persons.\(^7\) Consequently, the Nigerian government's emphasis on increasing agricultural productivity is well taken. The massive plan to cultivate 71.2 million hectares of land out of a total area of 98.3 million hectares will help. In addition, Nigeria's livestock and fishing schemes have been given priority in the Third National Development Plan of 1975-1980, which allocated 3.9 billion dollars to the agricultural sector alone. During the National Development Plan period, the Nigerian Agricultural Bank expects to lend $3.9 million to agric-cooperations, joint-stock companies, and private farmers for extensive

\(^6\)Arnold, op. cit., p. 91.

farming. With this master plan, Arnold concludes that Nigeria will be self-sufficient in food production, except for certain selected foods such as sugar and wheat which have to be imported.

Family

The family pattern in Nigeria during the precolonial agricultural phase was of an extended, polygamous type (polygyny) that favoured the division of labour in agricultural activities. The men were responsible for heavy jobs, and women and children were responsible for the light jobs of weeding, cooking, and the milking of cows and goats. Obviously, there was a need for a large sized family, both as help in domestic duties and as a status symbol. But since the advent of colonial contact in the nineteenth century, there has been remarkable change from the extended, polygamous family to the conjugal or nuclear family. Plantation agriculture helped to bring about this change with its export of products that encouraged the hiring of skilled and unskilled labour. Many husbands, wives, and some adolescents preferred wage-earning jobs to self-employed peasant-farming. Lifestyles, in terms of feeding and living accommodations, made some impact on fertility rates because the growing plantation economy also gave rise to costly urban living. Migration of people from rural to urban areas and plantation suburbs took place. Most people no longer lived in compounds but rather in rented homes, apartments, or government quarters.
Besides the impact of the plantation economy on the family, the mechanization of agriculture also has had an effect on the family. The use of machines to milk cows, pull weeds, and improve the soil with chemical fertilizers has reduced the number of jobs done by women and children. Modern innovations (such as the river basins construction) have provided jobs with an urban environment. Thus changes in agriculture have helped to transform the Nigerian family pattern from its former polygamous nature to a nuclear, conjugal nature.

Industrialization

Agriculture plays another role in the industrialization process because plantation agriculture brought with it into Nigerian society the mass production of dairy foods, timber, unprocessed rubber, cocoa, kolanuts, palm-oil, and peanut products. These raw materials must be factory processed or industrially treated to be fit for human consumption and use. Therefore, around the big cities of Lagos, Ibadan, Kano, Jos, Enugu, and others, there developed a complex of industries. For example, the canning industry at Sapale in Bengel state processes a lot of timber products, while the soap and bottling companies of Aba in Imo state produce consumer goods with the aid of palm products and cocoa.

The industrialization process inevitably encourages urbanization. People leave the country, and cities grow in size and importance. Consequently, the growth of industry has
helped considerably to create cities like Lagos where a true urbanism exists, and where Nigerians are introduced to cosmetics, textiles, ceramics, chemicals, and drugs. The effect of this process is concretely illustrated in the statement that "Besides making possible near self-sufficiency in food production, agriculture, through export duties and sales taxes, is the basis for most Nigerian industries."  

Urbanization

Agricultural growth also fosters bureaucracy. Witness, as examples, the Federal Ministry of Agriculture at the federal-government level and the ministry of Agriculture at the state-government level. Agencies are situated in principal cities to superintend and coordinate agricultural services. They are assisted by a quasi-government service, the Agricultural Development Cooperation (ADC), which is charged with the responsibility of implementing agricultural plans designed by the ministries at local levels and of helping to develop agricfarms or other schemes that might be of benefit to the total society. These agencies need workers, housing for workers, and industrial development as support structures.

Education

Agriculture's influence on education can be traced from the colonial agricultural era. With the introduction of

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various scientific methods of farming, the colonial agriculturalists sold the local farmers on the need for scientific farming. Thus began the emphasis on agricultural education. Agriculture today has a place in the high schools' and universities' curricula. High-school teachers teach simple, yet productive, ways of individual subsistent farming as well as advanced, mechanized agriculture. Research in the areas of animal husbandry and soil improvement are done on the university level. Extramural classes are set up to increase the needed number of skilled, trained supervisory staff for agricultural services. Table VII\textsuperscript{9} shows the total number of trained agriculturalists in Nigeria from 1963 through 1980.

Outside the school environment, the agricultural influence on education continues as the Ministry of Agriculture and Agricultural Development Cooperation jointly establish agricultural schools and assign trained, agricultural technicians to rural areas to teach local farmers the proper ways of livestock care and soil improvement. The Ministry of Agriculture, as an arm of Nigerian civil service, occasionally sponsors interested Nigerians who want to study the advanced ways of farming abroad. For example, Operation Feed the Nation benefited from the agricultural field study done by Nigerians in China.

### TABLE VII
A SUMMARY OF TRAINED AGRICULTURALISTS IN NIGERIA 1963-1980

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agricultural Assistants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Nigeria*</td>
<td>3,576</td>
<td>4,212</td>
<td>4,810</td>
<td>5,564</td>
</tr>
<tr>
<td>Eastern Nigeria</td>
<td>1,488</td>
<td>1,768</td>
<td>2,002</td>
<td>2,327</td>
</tr>
<tr>
<td>Western Nigeria</td>
<td>1,236</td>
<td>1,456</td>
<td>1,651</td>
<td>1,911</td>
</tr>
<tr>
<td>Mid-Western Nigeria</td>
<td>300</td>
<td>351</td>
<td>416</td>
<td>468</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6,600</td>
<td>7,787</td>
<td>8,879</td>
<td>10,270</td>
</tr>
<tr>
<td><strong>Senior Supervisory and</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Specialists Staff</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Nigeria</td>
<td>715</td>
<td>842</td>
<td>962</td>
<td>1,113</td>
</tr>
<tr>
<td>Eastern Nigeria</td>
<td>298</td>
<td>353</td>
<td>400</td>
<td>465</td>
</tr>
<tr>
<td>Western Nigeria</td>
<td>247</td>
<td>291</td>
<td>330</td>
<td>382</td>
</tr>
<tr>
<td>Mid-Western Nigeria</td>
<td>60</td>
<td>70</td>
<td>83</td>
<td>94</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,320</td>
<td>1,556</td>
<td>1,775</td>
<td>2,054</td>
</tr>
</tbody>
</table>

*In Northern Nigeria, totals include Agricultural Instructors.

### Summary

Population size is dependent on the potentialities of agricultural production. These potentialities are engraved in the environmental features of Nigeria which include climate, physical features, vegetation, and soil. Generally, Nigeria has a tropical climate with a hot and wet season.
that favours agricultural production; her northern grasslands encourage mixed farming (grainary and pastoral farming), and the southern portion (with its equatorial, rain-forest belt) favours arable farming. Physically, the northern topography (a table-land with a cool temperature) attracts livestock breeding, and the twin rivers, the Niger and the Benue, water the entire Nigerian farmland. The delta area is a rich fishing ground. The northern sandy-loam soil and southern humus alluvial soil, along with the other features, boost agricultural yields necessary to maintain a large, growing population like Nigeria's. Besides food production, the agricultural institution is a vital source of employment to Nigerian people. Nearly 70 per cent of the Nigerian population is employed in agriculture. Agriculture helps to bring economic development to a community. In Nigeria, medical research and facilities were improved and this led to the control of pests and diseases.

Other institutions that have been influenced by agriculture include the family, industrialization, urbanization, and education. The traditional polygamous family pattern, which fostered a division of labour in agricultural activities, has been constricted in size as a result of the migration of labour for plantation work and the urban life-style occasioned by the plantation economy. Due to economic concerns the modern values engendered by agricultural innovations, the majority of people no longer have a desire for a large-sized
family. Nigerian industries are fed by its agriculture which produces raw materials like dairy products, palm produce, hides and skins, cocoa, and timber. The wealth of raw materials has created industries in the cities of Lagos, Ibadan, Benin, Enugu, Aba, Kano and Kuduna, and as a result, people have moved to these urban centers. Agricultural education has made it possible to train agriculturalists in the scientific methods of farming, which they then introduce to local farmers. High schools and universities teach and research better ways of farming. The Ministry of Agriculture organizes agric-schools and schemes with trained experts to direct and teach scientific productive farming.
CHAPTER VI

SUMMARY AND CONCLUSION

Nigeria, formerly a British colony, is located at the corner of the Gulf of Guinea in West Africa; it has a tropical climate, and a land area of 356,000 square miles. Nigeria's current population is 80 million, comprised of four major ethnic groups, viz., Hausa/Fulanis, Yorubas, Ibos, and other minorities (Efiks/Ibibios and Ijaws). Nearly 70 per cent of the population is engaged in agriculture.

Historical evolution linked Nigeria with the British. Its first contact with the British was in 1820, but from 1850 to 1860, British interest in Nigeria was more pronounced. This interest influenced agriculture, education, politics, religion, and trade. With the cession of Lagos to the British government in 1861, economic ties between Nigeria and Britain became established, culminating in 1893 with the formation of the Royal Niger Company. Structural changes in Nigeria's economy were off-shoots of this company. Forest conservation and diversification of crops were the first impacts of colonial agriculture. The governors, Moor (1896-1903), Macgregor (1899-1904), and Egerton (1904-1906), actively promoted these agricultural schemes. Another aspect of structural change in Nigeria's economy was the enforcement of
taxation. There was a tax on crops, cattle, trades, and professions. Lagos colony was united with the Oil Rivers Protectorate, and the first railroad was opened between Lagos and Ibadan in 1904. After Governor Egerton amalgamated the entire Protectorate with the West, Nigeria went through a series of constitutional changes consisting of the constitutional and political development of 1914-1945, the Bourdillon Constitution of 1939, the Richards Constitution of 1946, and the Macpherson Constitution of 1951. The 1954 constitution declared Nigeria a Federation of three regions, and the 1957 constitution brought regional self government. In 1960, Nigeria became an independent state and a member of the Commonwealth of Nations. In 1963, a new constitution declared Nigeria a Republic. Although the winds of change are still blowing, today President Alhaji Shehu Shagari presides over a federated Nigeria of nineteen states and 80 million people.

Nigeria's agriculture has undergone structural changes during its history. The first phase of change came during the precolonial agricultural era which was noted for food crops and the techniques of pastoralism, permanent cultivation, intercropping (practiced in the north), shifting cultivation and fishing (practiced in the south). The farming techniques were practiced on good soil and provided adequate food. However, pests (locusts and beetles), coupled with elementary tools and inadequate funds, contributed to the decline of precolonial agriculture. Land was a heritable, yet communal
property. Precolonial agriculture was based upon a traditional Nigerian community, and farming provided the primary divisions of labour. Through family units, the farm work was communally done by men, who took care of heavy jobs, and women and children, who performed domestic duties, weeding, and milking of cattle. Both men and women participated in the open-market system. Rural ethnic groups were characterized by the rank-conscious Moslems of the north and the egalitarian Christians of the south. Despite the normative traditions and agricultural consciousness, the precolonial era declined as a result of the social change that heralded the advent of white merchants and the colonial administration around the turn of the century.

The second phase, colonial agriculture's era, emerged around 1900. Colonial contact with Nigeria at this period influenced agriculture, education, politics, religion, and trade. Farmers were introduced to ploughs, fertilizers, terracing, and mixed farming. Cash crops for export were emphasized. Farming techniques such as mixed-farming engendered animal husbandry, and irrigated agriculture helped in the arid areas of the northern zone. These farming techniques produced a rich economy with the principal export crops of palm produce, cocoa, and cotton. Forestry and plantations constituted some of the primary financial resources of the colonial economy, while the marketing boards, other joint stock firms, the African Trading Company, and the United
African Company were the controlling agents of the economy. As in any bureaucracy, land was controlled by the government in the interest of the local owners. For instance, by the Land Proclamation Act of 1900, non-natives were not allowed to own land without the consent of the government. Though under the control of the governor who issued titles to its use, all land was declared to be native land by a 1916 law. Despite the colonial control of land, competition among family land owners was not ruled out. The pledging of land for debts became very common, with the rights of cultivation passing into the hands of money lenders. Family heads and chiefs often found it profitable to bring in labour from other tribes to plant cash crops, and this process sometimes weakened the competitive position of migratory workers. Colonial agriculture made tremendous progress, but declined as a result of political changes. Nigeria's advancement to the status of a Republic necessitated the removal of colonial vestiges.

In the third era, Nigerian Independence to the present, agricultural changes were carried out mainly by the federal and state governments in compliance with the estimates of the Third National Development Plan of 1975-1980. Among other things, this era has established national dam-water resources projects charged with multi-various duties of controlling floods, erosion, constructing of dams, dykes, polders, and irrigation. These projects aimed at the massive production of crops and livestock, and the authorities developed
fisheries and improved navigation on the rivers, lakes, and lagoons. The spraying of cocoa trees against capsid bugs, the control of weeds through herbicides, and the use of agrochemicals as fertilizers, enriched the soil and increased agricultural yields. The United Nations technical assistance was another scheme to increase agricultural yields. With U.N. assistance, Nigeria and West Africa were mapped into ecological zones. This idea led to a research-oriented innovation in the use of companion crops that served as weed control, and led further to the heavy production of food and export crops of 1971-1974 in the ecological areas of the rain forest, Guinea, and Sudan. Not only agricultural yields were improved in this period; the semi-arid lands of the six northern states (North-central, Eastern, Western, Kano, Kwara and Benue-Plateau states) were improved by river, irrigation, and dam projects. Erosion from wind and water was given attention through the construction of a $31.2 million soil conservation scheme. The federal government then launched a nation-wide campaign for agriculture called, "Operation Feed the Nation;" this program was assisted by the Nigerian Agricultural Bank (NAB) that granted loans to farmers.

All these agricultural changes had an influence on other institutions, such as population, family, industrialization with urbanization, and education. The populations' size is dependent on the potential of the country's agricultural production, which is dependent on the environmental features
of climate, physical features, vegetation, and soil. In Nigeria, the tropical climate favours mixed farming (grainary and pastoral) in the north, while arable farming thrives in the southern climate. The northern topography and cool temperature suit livestock breeding. Both the northern area's sandy-loam soil and the southern area's humus-alluvial soil promote agricultural production. Agriculture not only plays its role in food production, but it also employs 70 per cent of the population.

The Nigerian population increases at 3 per cent per annum compared to 2 per cent per annum increase in agricultural production. To meet this growing need the government instituted Operation Feed the Nation. In addition to the population, the family, industrialization, urbanization, and education are influenced by agriculture. For instance, the Nigerian families' polygeneous nature, which favoured agricultural divisions of labour by sex has been reduced due to the migration of labour for plantation work and the urban lifestyles caused by plantation economy. Agriculture also supplies the Nigerian industries with raw materials such as dairy products, palm produce, hides and skins, cocoa, and timber. These in turn have helped to create industries in the cities of Lagos, Ibadan, Benin, Enugu, Aba, Kano and Kaduna. As a result people have moved to these urban centers to find jobs, which results in further urbanization. Education, especially agricultural education, has brought about the training of
agriculturalists and technicians, along with educating the local farmers on scientific methods of farming. High schools and universities teach and research the better ways of farming. The Ministry of Agriculture has organized agric-schools and projects with trained experts to direct and teach scientific-productive farming. River Basin projects have benefited from feasibility studies organized by United Nations experts (FAO).

Findings

The following are the findings of this research study.

First, Nigerian agriculture may be analytically divided into three major phases, the precolonial agricultural era--2500 B.C. to 1900 A.D.; the colonial era--1900-1959 A.D., and the era from independence to the present--1960-1980.

Second, the precolonial agriculture consisted of many rural, subsistent farming communities that raised only food crops. The northern, precolonial peasants engaged in pastoral and intercropping agriculture, while the southern peasants practiced arable agriculture with shifting cultivation and fishing. These techniques of farming coupled with favourable environmental factors enabled the precolonial peasants to cultivate enough food for their low population. But this era declined because of the use of elementary agricultural tools, the lack of funds to subsidize large-scale agriculture, and the inability of the farmers to control pests.

Third, the emergence of colonial agriculture in 1898-1914, and the implementation of the Sylvan and agricultural
produce schemes, changed Nigerian agriculture from subsistent to export-crops agriculture. Proceeds from export crops boosted the colonial economy, and agriculture became mechanized. Much food was produced for domestic and foreign consumption.

Scientific research also modernized pastoralism into mixed-farming. Chemical fertilizers, used first in this era, increased agricultural yields. Moreover, the process of modern agriculture later gave birth to the corporate plantation industry.

The era from independence to the present is one of consolidated agriculture sponsored by the Nigerian government's Third National Development Agricultural Scheme of 1975-1980. Its consolidated nature stems from the fact that Nigerian government is using all the farming techniques of the preceding phases to carry out a massive campaign to increase agricultural output. This campaign is called "Operation Feed the Nation." This consolidation has made it possible to establish a national dam-water resources agency. This agency controls floods, erosion, and constructs new dams where it is necessary to convert arid lands to fertile ones. The government further encouraged agriculture by the introduction of a technological device with which to spray cocoa trees to exterminate capsid bugs. United Nations (FAO) technical assistance also encouraged the use of chemical fertilizers;
their ecological zones survey introduced the companion-crops system that controls weeds.

Nigerian agriculture produces raw materials upon which industrialization is built. Additionally, all these developments have led to migration from rural to more urban areas. The family institution has become more conjugal in size due to social mobility and the urban life-style encouraged by plantation economy. In the same manner, agricultural education has gained primacy in the school curriculum.

Finally, Nigeria is an agrarian society and agriculture is one of the basic, predominant occupations of Nigerians. It is therefore essential that the government and people of Nigeria continue to emphasize agriculture. National interests will be best served by making agriculture a higher priority item. Oil wells are exhaustible, but farms remain an inexhaustible and productive asset. Efforts should be made by all Nigerians to implement the policies of the Third National Development Agricultural Scheme of 1975-1980. As Guy Arnold says, "Oil has replaced agriculture as the backbone of Nigerian economy; the danger is that while oil lasts insufficient attention will be given bringing agriculture back to pride of place." ¹

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