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Spatial Analysis of Agricultural Pattern in Ikere Area, Nigeria

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Abstract
Agriculture is the backbone of Africa's economy. In spite of the increased significance of oil and gas sector, Nigeria largely remained an agrarian economy since a high percentage of the labour force continues to engage in agricultural production. The sector remains labour intensive as this is one of the reasons for downward trend in productivity. The study therefore aimed at examining the influence of distance on size of farmland and impact of land tenure system in Ikere agricultural region. The study involved identifying major routes leading to the city centre where three farmsteads were randomly sampled on the basis of distance using 0 – 3 km, 4 – 7 km, 8 – 11 km, for nearby, middle and distant farmlands. In all, 18 farmsteads were used for the purpose of the study and 180 farmers representing the sample size. Questions relating to the size of farmland, years of cropping, dominant crops and farming activities were sought for. A descriptive statistics was adopted to summarize the data. The study revealed that farming practices adopted is the popular bush burning in preparation of land and shifting cultivation after a short use to allow land to regain fertility. Also, both indigenous and migrant farmers engaged in production of food crops while indigenes are more involved in cash crop production. All the farmsteads produced the same type of crops at the same distance from the city centre while farmers have farm plots with an average of 4.5 plots. On the basis of the findings one recommends among other things the need to construct roads to link the city centre and the various farmsteads for easy commuting and evacuation of farm products. Farmers are to increase their outputs by adopting new farming techniques, and government should provide agricultural extension workers to advice farmers on modern farming techniques to increase agricultural products.
Keywords: Agricultural pattern, food production, farming techniques, land use, Ikere.

Introduction

The most important economic activity of Ikere people is agriculture. They are locally acknowledged for this contribution to Cocoa and rice production in the Western part of Nigeria. The technology adopted has not changed from what it used to be in the past except that the influence of agricultural extension officers is being felt in the area on the use of fertilizers and high breed crops. World agriculture, in fact comprises of two distinct types of farming: the highly efficient agriculture of the developed countries, where substantial productive capacity and high output per workers permit a very small number of farmers to feed entire nations; and the inefficient and low productivity agriculture of developing countries where in many instances the agricultural sector can barely sustain the farm population let alone, the burgeoning urban population, even at a minimum level of subsistence (Todaro and Smith, 2006).

Agriculture is the backbone of Africa's economy. About 70 percent of Africans and roughly 80 percent of the continent's poor live in the rural areas and depends mainly on agriculture for their livelihood. The sector accounts for about 20 percent of the total merchandise exports as agriculture is the main source of income for 90 percent of the African population. About 70 percent of the African population, Nigeria inclusive, living on less than $1 (one dollar) a day is located in rural areas establishing poverty as a rural phenomenon in the region (Inoni, 2010).

The contribution of agriculture to economic development lies in providing more food to the rapidly expanding population; increasing the demand for industrial products and thus necessitating the expansion of the secondary and tertiary sector; providing additional foreign exchange earnings for the import of capital goods for development through increased agricultural exports, increasing rural incomes to be mobilized by the state, providing productive employment and improving the welfare of the rural people (Jhingan, 2007). Ozor and Nwankwo (2008) reiterated that self-sustained rural community development is vital to the economic and social progress of any developing nation like Nigeria, and that unless the ways and means of massively accelerating development in the rural areas where over 80 percent of Nigeria's population reside, our national goal of self-sufficiency and control over resources may continue to elude us.

In Nigeria, agricultural practices in the rural areas are essentially in the hands of peasant farmers who are either indigenous to their natural environment or migrant tenants. In Ikere-Ekiti, these two categories of farmers operate side-by-side using the same technology. The native peasant farmers cultivate food crops mainly for domestic consumption with some left-over for the market. The migrant tenant farmers cultivate food crops mainly for the market. Today, agriculture which used to contribute immensely to the nation's wealth has declined and it has reached the point where food is imported. Food and Agricultural Organization (2003) remarked that the various components of agricultural infrastructures are lacking or grossly inadequate thus aggravating the already poor state of the nation's agriculture and settlement and neglect on the part of the government with a shift in interest to other

sector of the economy. Ogundare (2008) and Ojeh*et al.* (2012) also observed that the last few years in Nigeria have witnessed a general decline in the contribution of export crops to Nigeria's Gross Domestic Product and foreign exchange earnings.

The present situation in Nigeria where there has been embargo on formal employment by the public sector and the private sector, the industries are underutilized on their capacities. The implication of this is that some industries close down permanently and make gainful wage employment impossible for the majority, but one important traditional employment which has no entry barrier is farming. Agriculture thus plays the role of employer of last resort. It also ensures that the hard working farmer does not lack food which is a primary necessity of life.

Based on the above realities, the paper focuses attention on the following:

i. To examine the influence of distance on size of farmland in Ikere region; and

ii. To examine the impact of land tenure system and the source of labour in the determination of size of farm holdings.

Conceptual Framework/Literature Review

One of the factors that distinguish an urban area from a rural area is economic differentiation. Rural areas aredominated by primary economic activities, whereas urban areas are predominantly engaged in secondary and tertiary functions that account for the concentration of people in them. Such secondary and tertiary activities include manufacturing, trading, transportation and other services. All these activities combine to generate the spatial configuration of the city, because their requirements are sometimes functionally differentiated and spatially segregated. Although urban activities and land use are sometimes spatially segregated, they are functionally linked together through human patronage, human activities, interaction and time (Adedokun, 2011).

In less developed countries, food production dominates the agricultural sector while output expands with increased productivity it increases the income of the farmers. However, the increase in the growth rate of population due to a rapid decline in the mortality rates and slow reduction in the fertility rates tends to raise further the demand for food beside the demand for food increases with expansion of population in towns and industrial areas. Thus, the increase in farm output should be at higher rate than the increase of food demand. In a situation where the increased production of agricultural commodities lags behind growth in demand, there will be a substantial rise in food prices. To offset domestic shortage and prevent rise in prices, food may be imported from abroad but it can be at the cost of capital goods needed for development. The state may also introduce price controls, rationing and compulsory food collection. All these emphasize the importance of increase in food production in less developed countries (Jhingan, 2007). Explaining the roles of information and communication Technology in actualizing increase food production, Achugbue and Anie (2011) opined that it is sad to know that most African countries have not devoted adequate attention to providing their citizens with access to information especially in rural areas. Unomah (1998) posited that rural people need information on how to apply fertilizers in the farm, preservation of harvested crops, and marketing of the farm produce. Information is essential for facilitating agricultural and rural development and bringing about social and economic change.

Land as a factor of production and as a natural resource is a critical input in agricultural production. The criticality is imposed by its availability, accessibility, quantity and quality. In Nigerian agriculture, the quality factor stands out as a major determinant of land productivity. This is due to the problems associated with sourcing artificial amendments that can improve the productivity of land especially by subsistent farmers that dominate the arable crop production landscape. Reid *et al.* (2006) submitted that although, estimates of the effects of land degradation on food production are rare, it had been realized that the problem often leads to drastic reduction in agricultural production by necessitating the use of higher level of inputs to maintain yields, temporary or permanent abandonment of plots and conversion of land to lower value uses. Also, Rosegrant and Cline (2003) reported that while, food production in 1993 had been derived from 748.6 million ha, it has been projected that 795.5 million ha will be needed in 2020 to meet up with world's food requirement. It was likewise stressed that the land constraint, among other constraints, will make rice production to only grow by 1.05%, 1993 and 2020, 1.17% in wheat and 1.03% in maize.

Nigeria food problem shows both in quantity and quality. Tied to low agricultural production and productivity is the increasing relative and absolute poverty of the farming population in Nigeria. Although, as observed by Swinton*et al.* (2003) the land management pursued by wealthier household may increase some forms of resource degradation (e.g., more soil erosion due to use of mechanical equipment, or more damage to water resources and biodiversity due to greater use of agro-chemicals), while reducing other forms of resources degradation (e.g., less soil nutrient depletion as a result of greater ability to purchase fertilizers or greater ownership of livestock and recycling manure). The need for increased food production call for knowing the socio-economic characteristics of the farmers, know the farm characteristics in term of physical inputs used as well as highlighting the farmers pattern of land use in the study area. Apart from this, land is the major resource for the livelihood of the poor. In Nigeria, a typical villager recognizes land in its entirety. According to Fabiyi (1990), land to farmer is home and work place and shares it with the entire biotic complex.

However, the process of agricultural development is a complex subject consisting of a large number of interrelated social, physical, economic, cultural and political factors (Olujenyo, 2006). Wharton (1998) noted that agricultural development is influenced by external factors which often cannot easily be altered in the short run. For instance, the development of infrastructure and the rate of population growth can have a profound effect on the direction and rate of agricultural development. Since production of agricultural goods strongly depends on natural settings, socio-political and agro-technical conditions according to Cowell and Clift (1996), standardization of evaluation methods or management advice is considerably more restricted than, for example, for industrial production processes.

Generally, farming is a social and cultural activity, which directly affects agricultural development and shape the nature of farming. In other words, they determine the farm and farming structures. Therefore, the social and cultural environment in which farming operates is of significance. These however include farmer family size and structures, farm labour force, farmer population density, emigration rate, degree of solidarity among farmers, the attitudes of farmers, satisfaction by the farming job, position of farmer in rural, religious and racial characters, gender inequalities, ownership patterns and systems, land size, cooperative culture in crop farming, farming systems, and innovation acceptance level.

The Study Area

Ikere-Ekiti, the setting for the study is a traditional city found in Ekiti, Nigeria and like other traditional Yoruba towns in the country, it existed long before the advent of British Colonial rule in Nigeria. The town is located within Ekiti State in the South-western part of Nigeria (Fig. 1). It lies approximately on latitude 7^0 30' North of the Equator and longitude $5^0$14' East of Greenwich Meridian and situated at elevation 381 metres above sea level. Ikere is bounded in the north by Ado-Ekiti, in the south by Akure North local government, and in the east and west by Ise/Orun and Ekiti South-west local governments respectively. The last National Population Census puts the total population of Ikere local government at 147,355 (NPC, 2007), making it the 4th biggest city in Ekiti.

Agriculture is a branch of the economy in Nigeria, providing employment for about 30 percent of the population as of 2010 (Labour Force Statistics, 2010). The sector is being transformed by commercialization at the small, medium and large-scale enterprise levels according to Olomola (2007). Pasquini and Alexander (2005) observed that in 1990, 82 million hectares out of Nigeria's total land area of about 91 million hectares were found to be arable. 42 percent of the cultivable area was farmed. Much of this land was farmed under the bush fallow system, whereby land is left idle for a period of time to allow natural regeneration of soil fertility. 18 million hectares were classified as permanent pasture, but had the potential to support crops. Most of the 20 million hectares covered by forests and woodlands are believed to have agricultural potential.

Ikere Ekiti experiences a tropical climate with distinct wet and dry seasons which can be better described as Koppen's 'A' Climate (Adebayo, 1993). The wet and dry seasons are associated with the prevalence of the most maritime south westerly monsoon winds from the Atlantic Ocean and the dry continental north easterly harmattan winds from the Sahara deserts respectively. The rainy season span from April – October while the dry season (November – March). Temperature is almost uniform throughout the year with very little deviation from the mean annual of 27^0C. February and March are the hottest months with mean temperature of 28^0C and 27^0C respectively while June with temperature of 25^0C is the coolest (Adebayo,1993). The mean annual total rainfall is 1367mm with a low coefficient of variation of about 10%. Rainfall is highly seasonal with well-marked wet and dry seasons and double maxima as a result of the 'little dry season' experienced in August (Ogundare, 2008; 2016).

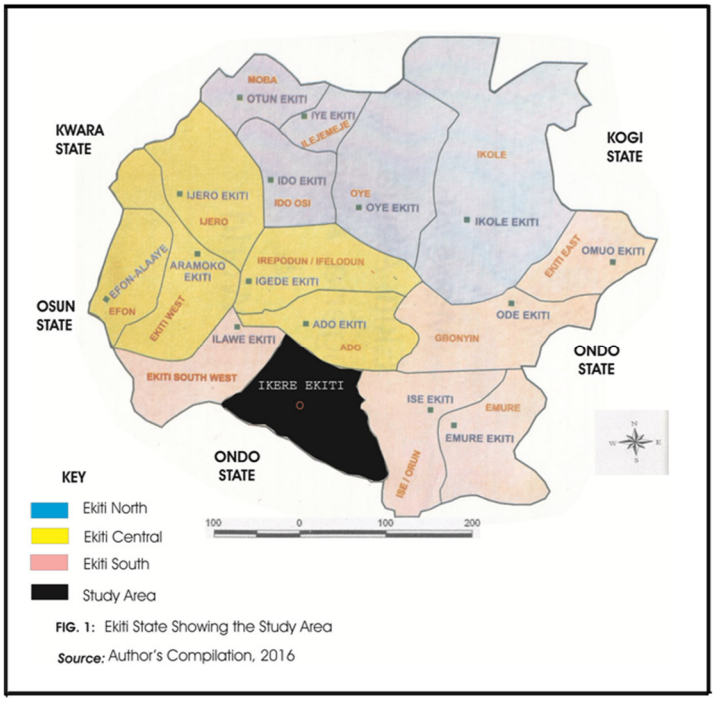

FIG. 1: Ekiti State Showing the Study Area

Source: Author's Compilation, 2016

Agriculture is the major economic pursuit and occupation of the people of Ikere with the cultivation of food crops like yam, cassava, cocoyam, rice, maize and plantain while cash crops include cocoa, oil palm and kolanut. Small scale agro-allied industries in the study area include rice milling, cassava milling and garri frying. The women are mainly involved in cassava milling and garri frying processes while rice milling is left in the hands of the men. The women also engage in pretty trading and other tertiary services. Also, an important feature of the town is the large number of hills it possesses, notably the Olosunta and Ugele hills, and Oroleinselberg. The hills are steep-sided and make much of fertile soil in the area. Some of the rocks that are granitic in nature are used for construction activities.

Research Methodology

The study involves a reconnaissance survey of the study area where the major routes leading to the city centre were identified. These routes were used to select farmsteads based on distance decay effect. The six routes identified are the routes along Ado, Ise/Emure, Akure, Ilawe, Igbara-Odo, and Ijare roads. Using these routes, six farmsteads were randomly sampled on the basis of distance using the first 0 – 3kms, six farmsteads sampled on the basis of 4 – 7kms, and another six farmsteads on the basis of 8 – 11kms to the city centre. Thus, three farmsteads each was randomly selected representing various distance categories along each route. On the whole, a total of 18 farmsteads represent the sample size. In each farmstead, therefore, 10 farmers were selected for the study. Thus, on the whole 180 questionnaires were distributed for the purpose of collecting data on the field. Questions relating to the size of farmlands, years of cropping, dominant crops, farming activities and practices, ways of preparing land for agriculture, characteristics of farms and socio-economic characteristics of farmers were sought for. The farmers used for the purpose of this study represented those commuting on daily basis to their farm and those who come to town once in a week or periodically.However, data analysis involves the use of descriptive measure of statistics such as frequency tables and percentages to describe the result.

Data Analysis and Results:

Farming Practices and Crop Types

Farming practices refer to the types of farming and the activities of the farmers throughout the year, whereas farming system in this context refers to variables like farm size,number of plots, supply of labour, input, output, fallow length, inter cropping, tec. Generally, farming practices adopted in Ikere agricultural region is the popular bush burning in preparation of land for agricultural use and shifting cultivation after a short use to allow land to regain its fertility. Both indigenous and migrant farmers engaged in the production of food crops while indigenes are more involved in cash crop production.

In Ikere agricultural region, the 18 farmsteads that were sampled show the following response in Table 1.

Table 1: Sampled Farmsteads and Crop Types

Route	Farms Sampled	Mean No. of Plots	Distance to City Centre (Km)	Crop Types	Major Crops	Total Size (Ha)
Ado Route	Eleiho Uwaro Imope	3.0 3.5 4.5	0-3 km 4-7 km 8-11 km	M, C, CY. V. Y,P,C M, C, Y, P, F, CO, K, OP, R	M,C,CY Y,CF,C. Y,F,M, CO, K, OP	3.0 3.5 6.0
Ise/Emure Route	Imola Ugbo-Olo Aso	4.0 5.0 6.5	0-3 km 4-7 km 8-11 km	Y,M,C,V,P,F. C,CY,P,R, Y CO,K,Y,OP,R,M.	M,Y,F,C Y,R,CF,P. CO,OP,CF	5.0 5.5 5.5
Akure Route	Onigbin Ugbo-Oka Aro	3.0 4.0 6.5	0-3 km 4-7 km 8-11 km	M,F,V,CY M,CO,R,Y,C,P. CO,K,M,F,Y,C,OP,R,P	M,V,P, C,Y,P,CF CO,OP,Y	3.5 4.5 6.5
Ilawe Route	Obe Itapete Ori-osun	3.5 4.5 6.0	0-3 km 4-7 km 8-11 km	C,CY,P,Y, M M,F,C,Y,CY,P CF,Y,CO,R,K,P, OP	M,F,Y,P, M,F,P CO,OP,K	4.0 4.5 6.5
Igbara-Odo Route	Eleyinmi OnaIlawe Ayeye	3.5 4.5 7.0	0-3 km 4-7 km 8-11 km	C,Y,V,M,CY Y,M,P,C,V CO,F,K,OP,R,P	C,M,V C,Y,M CO,K,P	4.0 4.5 7.5
Ijare Route	Aseyege Para Oke-Oko	3.5 5.0 5.5	0-3 km 4-7 km 8-11 km	M,F,C,CY,Y CO,C,CF,Y CO,K,F,Y,OP	M,Y,CY C,Y CO,OP,K	3.5 5.5 6.0
	Total	**82.5**				**90.5**

Source: Field Survey.

Note: CO – Cocoa **Y** – Yam **K** – Kolanut **M** - Maize
CF – Coffee **F** – Fruit **P** – Plantain **V** – Vegetable
OP – Oil Palm **C** – Cassava **R** – Rice **CY** – Cocoyam

It could be observed that virtually all the farmsteads produced the same type of crops at the same distance from the city centre. This observation is in line with what obtains in the concentric model of agricultural land use of Von Thunen. The paper also revealed that each farmer has many farm plots with an average of 4.5 plots. The plots are scattered between kilometres one and eleven. Total farm size is of 5.0 hectares average. It was discovered that there is no marked crop specialization, and so each farmer tries many crops at any particular crop season.

The nearby farms with less than three kilometres from the centre of the town have smaller plots because of pressure on lands close to city centre. This does not mean that nearby farms are intensively cultivated. Almost all farmers cultivate cassava, yam, and maize as their staple food while cash crops such as cocoa, kolanut and oil palm are dominant tree crops in distant farms, which are cultivated on permanent plots. On aggregate level, pattern of cereal, root and tree croppings are very much in line with the pattern of cropping in Von Thunen's Model.

Farming Groups and Land Uses

It was observed that there are five categories of farmers in Ikere local government Area. The farmers include the native farms, tenant or migrant farmers, civil servants, ministry of agriculture and natural resources and educational institutions. The predominant land tenure system varies from one type of farmer to the other. However, the social laws of the people influence land use in any country. Land tenure reserves the rights, laws and social rules governing the use and or ownership of land. In the same way, the land tenure in the study area as governed by different categories of farmers is shown in Table 2 below.

Table 2: Land Holding Characteristics

Type of Farmers	Land Holdings	Mean No. of Plots	Total Size (Ha)	Average Dist. (Km)	Major Crops	Fallow Period
Native Farmers	Family/Private Land	4.0	4.5	5.0	CO,C,Y,OP	5-7 years
Tenant/Migrant Farmers	Rented/Hired Land	5.5	7.5	7.5	CO,M,C,Y	4-5years
Civil Servants	Borrowed/Hired Land	3.0	1.0	3.0	Y,C,CY,M	2-4 years
Educational Institutions	Community Land	4.5	6.0	1.0	C,Y,M	Crop Rotation
M.A.N.R.	Government Acquisition	3.0	5.0	8.0	Forest Woods	Permanent Crops

Source:Field Survey

The native farmers make use of the family land which is communally or privately owned. Every adult in the family is however entitled to a piece of land that is owned by his family for the cultivation of his crops. Tenants or migrant farmers on the other hand rent or hire a piece of land which belongs to one person or group of persons for a specific period. They in turn make a reward to owner of such land. Native farmers have a long fallow period of between five or seven years because they control large family lands while tenant farmers have a fallow period of between four to five years because of limited land available for cultivation. Civil servants on the other hand have a short fallow period of between two to four years and their inability to farm in distant farms calls for a short period of fallowing, while educational institutions adopt the crop rotational system for fallowing. The Ministry of Agriculture and Natural Resources (M.A.N.R.) acquires its land through the government and engages in permanent cultivation of forest woods without any length of fallow period.

The length of land fallow increases with distance from Ikere town up to a point after which the land tenure pattern determines the length of fallow period especially when tenant and indigenous farmers cultivate contiguous farm plots. On average, the fallow period is between four to seven years, and the fallow period of any land depends on the population pressure and the type of crops that grow on the land. The returning of a substantial amount of family land by individual cultivators, as a result of regular cultivation, has resulted into virtual ownership of such parcel of land by such cultivator. Land ownership changes also arise from the attachment of a commercial value to land with the production of commercial crops.

The categories of farmers available still make use of crude tools such as hoes and cutlasses, and human muscles constituting over 90 percent of the source of power on the farms. According to Fadare (1987) “The characteristics of the Nigeria agricultural science has not changed over much today, small holdings still predominate.” Supply of input such as improved seeds and fertilizer is still inadequate, pest control is minimal, and the unpredictability of weather continues to be a problem that the intensity of land use decreased with distances from the settlement has not been reasonably proved. Only few farmers who have small farm plots do a lot of mixed cropping without necessarily applying fertilizers and other farm inputs. It is easier to secure better and stable farmlands far away from settlement fringes where urban speculators and developers make farming operations unliveable.

The tenant or migrant farmers have larger farms because they are commercially oriented and are able to pay for hired labourers. They do not dwell on nearby farms because they are in need of more farm plots than native and non-professional farmers. The native farmers make use of their children, wives and self-labour and most of them return to the town after work. On the other hand, the tenant or migrant farmers live on their farmsteads to reduce the cost of commuting daily between farm and town as they cultivate on a large scale.

Distance and Crops Cultivated

Distance affects the type of crops cultivated. For analytical purposes, table 3 shows the frequency of occurrence of different types of crops with respects to the distance covered. It was however, observed that distance is a great factor in the cultivation of some crops especially the perishables which are cultivated on nearby farms of about one to three kilometres away from the centre of the town and cash crops which are cultivated on distant farms of about eight to eleven kilometres away from the city centre.

Table 3: Frequency of Distance and Type of Crops Cultivated

Crop Types	Nearby Farms (0 – 3km)	Middle Farms (4 – 7km)	Distant Farms (8 – 11km)	Total Occurrence (%)	Rating
Yam	4	6	5	15.1	1
Maize	6	3	3	12.1	3
Cassava	5	6	2	13.0	2
Plantain	2	5	4	11.1	4
Vegetables	4	1	-	5.1	11
Cocoyam	5	2	-	7.1	7
Rice	-	2	4	6.1	8
Coffee	-	1	1	2.0	12
Kolanut	-	-	6	6.1	8
Fruit	3	1	4	8.1	5
Cocoa	-	2	6	8.1	5
Oil Palm	-	-	6	6.1	8

Source: Field Survey

From Table 3 above, it was discovered that cassava, vegetable, and cocoyam are not significant on distant farms while rice which requires large acres of land for cultivation and fairly fertile soils are extensively cultivated (though often mixed with maize) on distant farms. Cocoa, oil palm and kolanut, mainly cash crops are dominant on distant farms. To some extent, farmers have adjusted to distance factors in locating some crops. There are few buildings located on distant farms where farmers could stay for some time and such buildings also serve as storage centres.

It was also observed that cocoa farmers rarely operate on middle farms and do not operate in nearby farms. The cocoa farmers do stay overnight on distant farms where their cocoa plantations are located. Dominant crops in middle farms are yam, cassava, plantain and maize. Civil servants who cultivate land for subsistence purpose mainly dominate the nearby farms.Visits to such farms are mainly after the normal working hours and weekends. Yam, maize, cassava, cocoyam and vegetables are notable crops that are being grown by these farmers. Coffee is rarely cultivated and is not common among farmers in Ikere Local Government Area. In addition, between Ikere township and the farmsteads are notable minor route junctions, which serves as crops over points. At such points, farmers and food traders engage in exchange of farm products and other services. Public transport facilities are also available at such points for other farm commuters.

Farming Calendar in Ikere Agricultural Region

The farming calendar of the farmers is a function of the prevailing weather conditions, mostly rainfall. There are usually two major seasons, the dry season and the wet season. The dry season is mainly the harvesting period and the time for preparation of new farm plots for another cropping season. The wet season on the other hand, is the time for planting and nurturing of crops. Tree or cash crops such as cocoa, kolanut, oil palm, coffee, and citrus are often intermixed with cocoyam and plantain. The cultivation of different types of crops at different crop zones, each requiring different cycle of cultivation, enables the full use of labour and production of different crops in a single season. The crops that are not so common in Ikere area include cotton, beans and tobacco. Crops that are relatively new or recently adopted are cashew, pear, coffee, sweet potatoes and soya-beans.

Planning Implication of the Study

There is the need to construct road to link the main settlement (Ikere) and the various farmsteads that abound for easy commuting and evacuation of farm products. The Local Government Council should assist in the construction and maintenance of farm roads and also linking one farmstead to the other.

Storage facilities are essential to the preservation of agricultural products. Efforts should be geared towards its provision. Farmers could help themselves by building a large storage centres and the local government can as well help so that the perishable agricultural products could easily be stored. The storage facilities should also be at strategic locations for easy storage of products.

The farmers to increase their outputs should adopt new farming techniques. The state government should provide more agricultural extension workers to advice farmers on modern farming techniques, methods, grants or aids, fertilizers, as well as giving incentives to farmers to encourage more production of agricultural products.

To prevent or discourage soil erosion in Ikere region, there is the need to put the nearby farmlands, which are regularly cultivated under close observation. Some conservation methods should be practised in the cultivation processes of nearby farms.

The separation of farmers' plots by great distance tends to reduce the production level of farmers. It is impossiblefor farmers to make use of farming machineries because the farm plots are small and scattered. All small plots should joined together under cooperative societies could also promote organization of efficient transport system and marketing of farm products. Soil management could be more efficient too.

The Ministry of Agriculture and Natural Resources (M.A.N.R.) should allow farmers who are ready to cultivate in the state's forest reserves to do so. The large land available in Ikere forest reserve should be given to farmers to produce crops such as rice, cassava, and maize. All farmers allowed by the MANR should be given some guidelines to follow, especially on soil management.

Finally, farmsteads should be grouped and a local growth pole be created to provide essential social services such as health centre, primary schools, basic social centres and storage tanks (silos) for farm products. Such local centre should be accessible to their hinterlands as much as possible.

Conclusion

The paper acknowledges the important role distance and land tenure system plays in agriculture, and recommends among other things that since the world's population increases steadily at between 2.0 and 2.5 percent annually, there is the need by government agricultural planners, etc. to re-activate and re-direct economic resources through institutionalized innovation, agricultural inputs, storage facilities and other linkages with agro-based industries. New farming techniques and more education is needed to correct the inherent cultural inherits to enhance greater agricultural productivity among farmers.

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