Constraints to Increased Food Productivity in Rural Areas: An Example from Afon District, Ilorin, Nigeria

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Abstract

The survey reported in this study focuses on assessing food productivity in Afon district area of Kwara state with a view to identify the various constraints to increased food productivity. 294 local farmers and 180 itinerant traders involved in food productivity and distribution were interviewed through questionnaire administration. Findings showed that the high cost of foodstuff is due to decrease in food stuff production in the farm rather than high profit margin in the market. Similarly, evidence showed that farmers enjoyed a number of advantages from the practice of mixed cropping. Consequently, the stepwise multiple regressions identified six constraints as militating against increased production. They include high cost of human labour, high cost of transportation, lack of credit facilities and lack of fertilizer/high yielding seeds. Others are high cost of crop damages/poor storage facilities and poor sales, appropriate recommendations are duly suggested.

Keywords: Productivity, Foodstuff, Demand, Development, Transportation, Human, Labour, Extension

1. Introduction

The past decade has witnessed an astronomical rise in the prices of food stuffs in urban centres of Nigeria. The origin of this high cost however has been traced to a lot of incessant problems and factors. Ogunsanya, (1983) attributed the high cost of food stuff to inadequate transportation system and lack of funds among others. Olayide, (1972), a decade earlier had attributed the cause to in-efficient distribution system which has led to wastage of about 25% of total agricultural food stuff produced, and this factor is still applicable even in the 21st century Nigeria. Olatunbosun (1975) during the same decade emphasized transportation, information dissemination, storage, food processing, and standardization problems as the main constraints and causes of high cost of food production especially in the rural areas of the country.

More recently, Fatulu,(2007), Tunde, (2007) and Yahaya, (2009) indicated that transportation, poor credit accessibility, insecurity and high cost of human labour and farm inputs represent the most serious constraints to agricultural development in Nigeria. So varied are the reasons advanced for high cost of food stuff that any attempt at removing any single assumed cause would not yield any reasonable result. Besides, there is need to identify the constraints and attend to them on the basis of their merit (Ogunsanya,1983:88).

The poor performance of agriculture (especially the food productivity sector) in a growing economy like Nigeria has become of growing concern to policy makers. Evidence laid strong support to the fear of decline in agricultural productivity. Olatona, (2007) explained that the bulk of food crop production in Nigeria takes place under the traditional system without the use of mechanical power. Such a peasant agricultural system is usually characterized by poverty. Holdings are small, simple implements are used to cultivate hectares of land and land fragmentation is on the increase. The existing fragmentation and fractionalization are not only due to land tenure system, but also to soil catena characteristics (Ogunsanya 1983:92; Olawepo, 2008).

In view of these, various governments have been trying to alleviate poverty and subsequent agricultural problems through giving different incentives to local farmers to improve food production and their standard of living. There were different agricultural Development Projects and River Basins Development Authorities and other Agricultural related programmes in various zones and States of Federation. Similarly, large scale productions are being intensified by commercial farmers, government agencies and multi national corporations to boost food productivity. The establishment and input of the Directorate for Food, Roads and Rural Infrastructures (DFRRI) in the 80s to support rural development and open rural roads was to improve

accessibility to the rural areas. This was also to aid rural agricultural productivity and easier transportation of farm production to the market.

Despite these approaches, food productivity in Nigeria is known to be on decline and costs of food stuff in our urban areas are on the increase. It has been variously observed that the trend of food scarcity appears to increase with increasing gap between the rural and urban sectors of the economy which in turn is related to the increasing trend of rural-urban migration. In as much as a large proportion of food consumed in the urban centres are being produced in the rural areas, the laudable option of study would be to focus on productivity in the rural area.

Afon District in Ilorin area is a food basket, where more than 85% of the local residents practice peasant farming and where food stuff are produced daily to supplement other supplies being brought to feed the growing population of Ilorin city, the capital of Kwara State, Nigeria. Perhaps, one of the most helpful preliminary steps in the search for solution is to first identify the degree to which some common factors severally of individually contribute to high cost of food stuff in our urban centres. The basic questions still remain: what are the types and quantity of food stuff produced in the study area? What are the major constraints of increased food productivity in this rural environment? Answers to these questions are the main focus of this study.

The objective of this study among others is to examine the constraints that hinder increased food productivity in the study area with a view to making generalization, and to seek solution to some incessant problems of food productivity in rural Nigeria. In this study therefore, attempt is made at identifying the salient factors which help to explain the high cost of food stuff in urban centres around the study area and in Nigeria in particular.

1.1 Agriculture and Staple food Production in Nigeria

Agriculture plays a significant role in the process of economic growth and development of Nigeria.. It contributes greatly to the provision of food and raw industrial materials. Agriculture is the market for the input of the industrial sector, and provides employment opportunities for the people (Clavence 1979). In the late 1960s, before the diversification of the Nigerian economy to the oil sector, over 60% of the Gross National Products (GNP) was earned from the agricultural sector, whereas over 80% of the labour force of the Nigerian population was employed in the agro-allied industries.

Despite its contribution, it is acknowledged that agricultural production cannot be expected to meet the rising level of population demand in Nigeria due to the many problems confronting rural farmers. In the first instance, Nigerian agriculture remains basically inefficient, under utilized and costly. (Teriba 1964, Aribisala 1983). It is inefficient in the sense that crop yields remain markedly low when compared with other third world countries of Asia and Latin America. It is under utilized in that only about 45% of the country's 70 million hectares of potential cultivable land are under cultivation (Ibrahim, 2008)

Nigeria enjoys good and conducive climate that allows farming to be practiced through out the year especially in the southern parts of the country. Similarly in the drier areas of the north, irrigation is intensified to boost grain production. However, the last few decades in Nigeria have witnessed a general decline in the contribution of export crops to Nigeria's Gross Domestic Products (GDP) and foreign exchange earnings (Abumere, 1984). This has reached the point where Nigeria now imports a substantial proportion of staple foods like rice, beans, millets and wheat to mention a few. On the other hand, there has emerged, within the last few years, tremendous governmental interest in extensive staple food production. Such interest is formalized in the various programmes of the government like the establishment of agricultural development projects, investment in River Basin Development Programmes, irrigation of dry areas, distribution of fertilizers to peasant farmers and giving other incentives that will boost productivity. Nigeria is involved in the production of various staple foods ranging from cereals, legumes, and vegetables, to root crops and tubers depending on the ecological zones. Table 1 shows some of the Nigerian states and the crops produced on the basis or their ecological zones. Thus the south specializes in the production of root crops, tree crops and mixed grains while the north specializes in the production of grains, cereals and vegetables under irrigation.

From Table 1, it would be observed that zones specialization in food crops exists among the different ecological zones in Nigeria, although they are interwoven. The most essential food crops produced locally include cereals such as sorghum, millet, maize, rice, and wheat; grain legumes as cowpeas, beans, pears and root and tubers such as yam, potatoes, cassava, and coco-yam. Fruits such as grapes, lime, mangoes, oranges as well as vegetables are produced for consumption and in commercial quantities through out the country. Staple food crops are produced in Nigeria entirely by peasant farmers who use simple implements and hand tools. Holdings of food crops vary in size from 0.45 ha 3.04 ha (Abumere 1984:245) with considerable variations among states and crop ecological zones. There are also corporation farms and commercial producers with larger hectares of land under food cultivations.

Abumere (1984:251) identified the main problems of increasing staple food supplies in Nigeria. Such constraints are categorized as soil constraints, pest and diseases, resource availability, yields, marketing, extensions services, and land tenure problems. Most of these problems derived from the fact that an overwhelming proportion of food crop production in Nigeria is in the hands of these peasant farmers operating within the frame work of traditional system of agriculture. Despite these problems, the governments at different levels are challenging various short comings experienced by this sector through various incentives and programme establishments. If food production is to be increased in a meaningful way in Nigeria, then the farmers must show willingness and ability to respond to economic incentives created in the urban or food deficit areas. This is because there is obviously a very high demand for food crops in the country. The problem of planning to increase the production of food crops to meet increasing demand is worsened by the low income elasticity of demand for most food in Nigeria. Despite all these, the contribution traditional agricultural sector to economic development in Nigeria can not be over emphasized. On it has rested the burden to producing the food crops required to feed the ever increasing Nigerian population.

2. The Study Area

This study focuses on Afon district in Kwara State, Nigeria. This district is a part of Asa Local Government Area that situates within the Ilorin Emirate council. Asa Local Government Area was created in 1976 with the Headquarters in Afon, a medium sized community, a few kilometers away from Ilorin, the state capital. Afon district has a tropical wet climate on the average, the rainy season lasts for about eight months between April and October; sometimes it may extend to November and early December. The dry season on the other hand lasts for about five months that is between April and November (Olawepo,2009).

About 95% of the residents of this district live in rural areas while the remaining 5% live in sizeable settlements that are fairly sizeable settlements. Some of the settlements in the locality include Afon, Otte, Budo Egba, Laduba, Ogbondoroko and Aboto-Oja among others. Figure 1 shows the distribution of settlements within the districts. Farming constitutes the major source of income and a mainstay of the local economy.

3. Research Methodology and Analysis

The first step in the collection of data is the identification of the villages to be surveyed. In order to do this, the district was demarcated on a topographical map of 1:50,000 of the area and a 10% sample of the total villages in each ward were selected. with 10% of the farming family interviewed through questionnaire administration. At the end 294 rural household heads who are fulltime farmers and 180 traders were randomly selected.

The questionnaires administered in these villages were of two types, the farmers' questionnaire and the itinerant traders' questionnaire. The farmers' questionnaire contained questions on the type and quantity of food stuff produced the marketing channels and the various constraints to increased food production. The itinerant traders' questionnaire on the other hand contained questions on the type, origin and destination of food stuff as well as mode of transportation they made use of.

For the purpose of analysis, and on the basis of response from the two groups interviewed, 14 main constrained were identified. A Stepwise Multiple Regression was adopted to identify the contribution of these constraints to total food production in a given farming season. For this study, our dependent variable (Y) is the total acreage cultivation and Total food production in tonnes, while the independent variables 1-14. are the constraints. Thus our equation could be written as:

$Y= a+b1X1+b2\ X2\ldots\ldots\ldots\ldots\ldots\ldots bn\ Xn + e.$

Where Y is the acreage cultivated/food production in tonnes, a is the intercept, bi…bn are the parameter estimates, e is the standard error and,

X1= lack of modern farming equipment

X2= scarcity of human labour

X3= high cost of human labour.

X4= lack of fertilizer/high yielding seeds

X5= lack of funds/ credit facilities

X6= lack of enough land for farming.

X7= high cost of crop damage /poor storage system.

X8= lack of transport/high cost of transport to urban centres.

X9= poor sales of food stuff due to price fluctuation.

X10= problems of pests and diseases.

X11= poor accessibility to extension services.

X12= security and theft on farms.

X13= late onset of rain and poor weather conditions

X14= emphasis shifting towards competition for crops grown purely for sale.

3.1 Analysis and Discussion

The analysis focuses mainly on four segments of this study. This is borne in mind to achieve the main objectives of the study. The segments are arranged as follows:

3.1.1 General Characteristics of Farmers and itinerant Traders

In the course of this study, 294 farmers participated in this survey. Similarly, 180 itinerant traders in six periodic markets in the study area were also interviewed. All the 294 farmers are fulltime farmers and are all males. This is because farming in this locality is predominantly done by men, while women are involved mainly in harvesting, processing and sales of farm products. In the same vein, 180 (61.22%) of the farmers falls between the age of 45-60, 69 (23.47%) are below the age of 45 while the remaining 45 (15.30%) are above age 60. The implication of this is that the ageing adults participate prominently in farming production in the study area, while a large proportion of the young and able bodied men might have migrated to the urban centers in search of more lucrative jobs. This is also a negative influence on the sustainability of agriculture in our rural areas, where the bulk of our food productivity is produced. Similarly, 115 (63.88%) of the 180 itinerant traders are women while the remaining 65 (36.11%) are men. This is because the marketing of food products in the local markets is often handled by women, and a few men follow their produce to the market. Part of these men (50%) is middle men who resell food crops to other traders. This is common in markets like Aboto-Oja, Otte, Ogbondoroko and Laduba. They are also popular markets for tuber, grains and yam flour.

3.1.2 Types of food Production and Farm output in the study Area

The bulk of people in Afon district are farmers who produce food crops at both subsistence and commercial levels. Agriculture therefore provides basic economic activities in and around the district. In studying farming here, some features are pre-eminent; the differentiation of economic roles between the women and the men, and lack of any large scale economic units. Table 2 shows the types of food crops commonly cultivated in the study area. They include yam, cassava, sweet potatoes, guinea corn, maize, millet, beans and groundnuts. Others are vegetables, fruits and soya beans. The table further shows that a large number of farmers plan all types of crops under mixed cropping. Evidence suggests that the farmers enjoyed a number of advantages from this practice. Such advantages include increased yields, better labour utilization, prevention of erosion, and maintenance of soil fertility at low levels of productivity. Similarly, 22.44% and 19.72% plant root crops and grains/legumes respectively, while 11.56% and 6.12% are involved in the production of vegetables and fruits respectively. However, it should be noted that women here are only involved in assisting their husbands on farm during harvesting of crops as well as in frying *gari* and sheer butter nuts.

On the other hand, Table 3 shows farm size among the respondents. With patrilinear system, the men with his unmarried sons (and in some cases married sons) can cultivate between 3-4 acres of land annually. Despite this most farmers combine hired labour with family labour and can thus cultivate as high as between 7-10 acres annually. At other times, different age groups organize themselves into ‘association farming’ whereby they rotate the working days on each others farms in turn.. Thus in effect, has far reaching output impact on he farms. Table 3 further shows the average acreage cultivated by a farming family annually is that between 3-5, with 35.42% of our respondents in this group. In the same vein, about 31% cultivate between 1-3 acres, while about 16% cultivate above 5 acres. These small scale holdings could be explained by the fact that farming here is completely in its traditional crude form whereby the simplest tools are utilized. Most of the large farms are found in Otte, Afon, Laduba and Ogbondoroko, where farmers probably have some access to tractor hiring system through the cooperatives and through Ilorin Agricultural Development Programme (IADP). In fact these are the main semi-urban communities in the district where large farm markets exist.

In terms of farm output, it is generally small and it is a reflection of farm input and size cultivated. Table 4 shows a break down of annual output per farming family. Farmers produce averagely 1-3 tonnes in a farming season. A few of them however produce far above the average as indicated on the Table. The generally low productivity might be as a result those constraints earlier highlighted. To a large extent, traditional methods of

farming still prevail among the farmers in the district, and these have their drawbacks just as in many Nigerian villages today.

3.1.3 Marketing and Distribution of Food Production

In assessing marketing of food production in the study area, repeated visits were made to the six prominent markets in the area. These markets are those of Aboto-Oja, Afon, Otte, Laduba Odo-ode and Ogbondoroko. They are also periodic markets and their sphere of influence include Ilorin, Offa, Ganmo, Bode Saadu, Amoyo, Idofian and Adafila in Oyo states, where substantial numbers of buyers come from. Usually produce are taken to the markets by the farmers, wives through the available transportation. At times the farmer also goes with the consignment. The produce is sold firstly to the middle men and to women who could come to the market early in the morning. The middle men later sell to the final buyer who are made to pay local tax (*la'ada*) . The major staple food found in these markets includes maize, yam, yam flour, gari, raw cassava, local rice, and guinea corn. Others are vegetables, potatoes, beans and millet among others.

A comparative analysis of prices of food commodities showed that the prices of food production in Aboto-oja, and Odo-ode are fairly better than those of Afon, Otte and Laduba. This may be due to the fact that those two settlements are farther away from the urban centre and are surrounded by multiples of farming settlements. Generally in all the six periodic markets in the study area, prices therein are fairly spread when compared to purchasing the same quantity of food products in the urban areas.

In the analysis of the market and itinerant traders' questionnaire, it showed that the high cost of food stuff is due to a decrease in food production in the farm rather than high profit margin obtained by the middlemen or other distribution channels. Consequently 60% of the 180 marketers ranked decrease in production in the farm first, 20% indicated the role of the middle men while 15% asserted the influence of transportation cost as the main determinant. However a small proportion of about 4.5% chose poor sale due to price variation, while the remaining 0.5% are in different. It could be inferred from the above that from the traders' point of view, the issue of food stuff brought to the market as the major constraint of increased food productivity in the rural areas. This may further be determined by other underlying factors known to the farmers themselves being that it affects them directly.

3.1.4 Constraints to increased food productivity

In order to measure the contribution of each of the constraints to the variation in the total agricultural productivity in the study area, the data were subjected to the stepwise multiple regression analysis. The dependent variable (Y) is represented by the average acreage of land cultivated and farm output by the farmer in a farming season, while the independent variables are the 14 selected constraints highlighted.

The result of the regression analysis on Table 4 shows some interesting findings. The stepwise regression procedure selected six of the fourteen independent variables. In all together, the six variables explained about 84.92% of the total variation in the constraints to the total output in order of importance at the specified tolerance level of 0.50 entry into the model. The six variables are high cost of human labour, high cost of transport to the market/urban centres, and lack of fund/credit facilities. Others are lack of fertilizer and high yielding seeds, high cost of crop damage and poor storage facilities and poor sales of food stuff due to price fluctuation.

From the regression table it is observed that high cost of human labour (x3) in the study area is perhaps the mostly felt constraint to increased food production. The correlation co-efficient of this variable (r) is 0.7426, r^2 of 0.5569 and a co-efficient determination of 55.69%. This indicates that about 55.7% of its variance is associated with the variation in the total food productivity in a farming season. This result though looks spurious, definitely has some meaning in Nigeria in particular and in the third world in general. Adedayo (1985) reported that there is wide spread exodus of able bodied men from the rural areas to the urban centers, leaving the old who can not stand the rigor of traditional farming. This leads to high cost of labour charge by the itinerant labourers/farmers who are majorly the Tivs, Idoma and Igalas from Benue State, and the Ebiras from Kogi State of Nigeria. It could be inferred also that the high cost of human labour are great deterrents to the acreage cultivated. Most of the farmers interviewed agreed that cost of labour has increased more than 300% in the last five years. This they have attributed to the rather attractive, less strenuous gratuity-oriented benefits which the urban centers offer the farm deserters. The farmers thus have to pay higher for services rendered through hired labour.

High cost of transport to the markets and urban centres (X8) also appeared to be a very important constraint to increased food production with a joint correlation co-efficient (r) of 0.8182, r^2 of 0.6695, and a co efficient of determination of 66.95%. This means that about 66.95% of the variation in food productivity and high cost of production is jointly explained the two variables X3 and X8. High cost of transportation however added about

11.25% to the joint explanation. This further shows that high cost of transportation to the market reduces the incentives of farmers to increase their agricultural production. This is because transport removes a substantial amount of the gains that should come to them. This agrees with Ogunsanya (1983)'s observation that that returns to producers are generally low due to high cost of transporting products to the market. Similarly Tunde (2007) observed that transport constrain is one of the most crucial problems that lead to high cost of food production in Oke-Ero area of the state. One noticeable fact is that rural transportation in the study area is poor, only two main roads are tarred in the whole Local Government Area, others are rugged earth roads. For example, Odo-ode –Aboto road is not motorable for more than half of the year in 2007 due to heavy rainfall and erosion activities.

Lack of fund and access to credit facilities (X5) also ranked high in the strength of contribution to the total variance in food productivity. This variable jointly with the first two variables have a co-efficient correlation (r) of 0.8677, r^2 of 0.7530 and a coefficient determination of 75.30. This implies that about 75.35% variation in the total influence of constraints to increased food productivity is jointly explained by the three variables. Lack of fund and access to credit facilities however added about 8.35% to the total variance of the independent variable. This further reduces the incentives of farmers to increase productivity, even when there are opportunities for farm investment.. Most of them source their capital inputs from personal savings, contribution and local borrowing from relations and co-operative societies. Also generally, farmers shy away from obtaining loans from commercial banks because of the problems of obtaining collateral. The illiteracy level is also high and this affects them negatively.

Lack of fertilizer and high yielding seeds (X4) is also a very formidable constraint to increased productivity on farm. The joint coefficient-correlation (r) of this variable with the preceding three variables stands at 0.9838, r^2 of 0.8170 and a co efficient determination of 81.70%, meaning that about 81.70% variation in constraint input and to total production is explained by this variable together with the other three explained variables. There is however an addition of 6.40% by this variable as a determinant constraint to further production. This makes local farmers rely on the use of traditional organic manure rather than the modern fertilizer. This is probably one of the major problems that local farmers face as quite a number of them does not have access to fertilizer and improved seeds. It is not only costly but far within the reach of actual farm producers. Improved seeds are only available through cooperatives and agricultural extension services. The reliance on local manure and non improved seedlings reduces annual output, discourages farmers from cultivating more land and put them at disadvantaged level over their counterparts who have access through the Ilorin Agricultural Development Programme.

In the same vein, the next important constraint to increased food production is high cost of crop damage due to poor or non existing storage facilities. The co efficient correlation (r) of this variable jointly with the earlier discussed variables is 0.9159 and an r^2 of 0.8390. The co-efficient determination is 83.90%, an indication that about 83.90% of the total variation in food production is hampered by this variable and the preceding four variables. An additional 2.0 % is added by this variable. When asked to comment on this most of the farmers in Laduba, Afon and Ogbondoroko indicated that high cost of crop damage resulted from spoilage on farms and during transportation. This usually discourages them from producing more in the following year. Spoilt fruits and food crops are common scene on major roads along Ilorin–Otte roads every year. At times weather variation also adds to the weight of crop destruction. This is a sort of food insecurity which is not predictable. Farm produce are stored locally in barns dried in the sun and occasionally buried as in the case of yam and other tuber products.

The last constraint explained by our data manipulation is (X9) poor sales of food stuff due to price fluctuation. The co-efficient correlation (r) of this variable and those of the five earlier variables is 0.9215, r2 of 0.8492 and a coefficient of determination of 84.92. An additional 1.02% is however contributed by this variable. The poor sales of food stuff may relate to the unstable nature of prices of agricultural produce, poverty level of the people and at times there is excess production on the part of the farmers leading to farm glut. This discourages farmers from increasing their yearly output on some occasions.

Generally, the remaining factors probably are not significant in the explanation in the variance level of constraints to increased food production or that their values are too low toad meaningful explanation. This however does not mean that there could not be other factors, but which are not explained by this study. Thus far, the multiple regression equation could be written as

$$Y= 1.2130+2.0672X3-0.0390X8+0.1040X5-1.2061X4+1.0013X7+0.0001X12$$

RES=84.92%.

The implication of this is that if farmers have improved access to reduced human labour cost, low cost of transporting farm produce and good access to fund, food productivity will increase. Other factors like good access to fertilizers and improved seedlings as well as upgrading of storage facilities backed by government subsidies on price, problems of food productivity will be relieved, and farmers will have incentives to increase productivity.

4. Conclusion

The survey reported in this study had identified that the high cost of foodstuff in the study area is due to decrease in food stuff production in the farm rather than high profit margin in the market. Similarly, the foregoing has indicated that the constraints to increased food productivity in the rural areas can be quantified and scaled. The problems of high cost of human labour, high cost of transportation to the market and lack of funds and access to credit facilities ranked high in receding increased food productivity in the study area. Other significant identified constraints are, lack of fertilizer and high yielding seeds, high cost of crop damages resulting form poor storage facilities and poor sales of food stuff due to price fluctuation. All these reduce the incentives that can encourage local farmers to increase productivity in the subsequent farming seasons.

Consequently, in order to improve food productivity in our rural areas in Nigeria, attentions should be increased in the areas of incentives to agricultural productivity affecting the small scale farmers. In conclusion a revisit to our agricultural policy should be done in favour of this class of farmers. The government should focus on strategies that shall include:

(i) undertaking policy reforms for the promotion of small and medium scale farming enterprises including promoting subsidies in the agricultural sector that will enhance improved accessibility to producing inputs and reduced cost of labour.

(ii) facilitating improved transportation infrastructures, appropriate storage facilities and efficient marketing strategies to make food production attractive in our rural areas.

(iii) improving farmers' accessibility to the production and use of high yield, early maturing crop varieties requiring minimum agro-chemical input.

It is not over emphasize therefore, to say that a widespread agricultural development and improvement in Nigeria should be our priority in the next decade to move Nigeria forward to attaining the vision 20 in the year 2020.This will curb inadequate productivity especially with the wide agricultural resource within the country's rich borders.

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Table 1. Food Productions in Nigeria by Ecological Zones

Ecological Zone	States Lying in the Zones	Crop Specialization
Sudan Savanna	Sokoto,Borno,Kano,GombeKebbi, Katsina,Bauchi,Adamawa,Taraba, Gombe	Cereals,grains,legumes,livestock,seeds ,nuts, vegetables.
Guinea Savanna	Kwara,Kaduna,Kogi,Benue,Plateau, Yobe,Nasarawa	Creals,grains,legumes,root crops,tubers, Livestock
Forest Savanna	Anambra,Ebonyi,Enugu,Imo,Ondo, Kwara	Rootcrops,palms,tubers,cereals,vegetables, Grains,tree crops
Tropical Rain forest	Oyo,Ondo,Ogun,Ekiti,Edo,Delta,Osun,Abia,Ebonyi,Enugu A/Ibom	Treecrops,rootcrops,tubers,legumes,silviculture,poultry,vegetables
Mangrove Swamp	Lagos, Rivers, C/River,Bayelsa,	Palms,fruits,rice,maize,fishery,poultry,root Crops,legumes

Source: Adapted from Abumere,1984 and Olawepo,2009.

Table 2. Types of crops grown

CROPS	**Ogbon doroko**	**Laduba**	**Otte**	**Alag bede**	**Afon**	**Odo-ode**	**Abo to-oja**	**Oniyere**	**Illa**	**Oke1so**	**Total**	**%**
Root crops	**8**	**12**	**10**	**2**	**16**	**2**	**10**	**2**	**2**	**2**	**66**	**22.44**
Grains& Legumes	**4**	**18**	**8**	**3**	**8**	**2**	**8**	**3**	**3**	**1**	**58**	**19.72**
Vegetables	**4**	**2**	**4**	**3**	**6**	**1**	**5**	**3**	**4**	**2**	**34**	**11.56**
Fruits	**2**	**1**	**4**	**--**	**6**	**--**	**3**	**--**	**1**	**1**	**18**	**6.12**
All crops	**20**	**21**	**28**	**4**	**24**	**5**	**14**	**4**	**4**	**4**	**136**	**46.25**
Total	**38**	**44**	**54**	**12**	**60**	**10**	**40**	**12**	**14**	**10**	**294**	**100**

Source :Field work 2008

Table 3. Size of Farm in the study area

Size in Acres	Ogbon doroko	Laduba	Otte	Alag bede	Afon	Odo-ode	Abo to-oja	Oniyere	Illa	Oke So	Total	%
Less than 1	**2**	**4**	**6**	**2**	**8**	**4**	**4**	**4**	**4**	**2**	**40**	**13.60**
1-3	**10**	**12**	**21**	**3**	**18**	**3**	**12**	**4**	**4**	**4**	**91**	**30.95**
3.01-5	**18**	**20**	**17**	**4**	**26**	**1**	**16**	**2**	**6**	**3**	**113**	**38.42**
5.01-7	**6**	**5**	**4**	**3**	**6**	**1**	**5**	**2**	**0**	**1**	**35**	**11.90**
7-10	**3**	**3**	**6**	**0**	**2**	**1**	**3**	**0**	**0**	**0**	**15**	**5.10**
Total	**38**	**44**	**54**	**12**	**60**	**10**	**40**	**12**	**14**	**10**	**294**	**100**

Source :Field work 2008

Table 4. Farm output in tonnes in the study area

Farm output in tonnes	Ogbon doroko	Laduba	Otte	Alag bede	Afon	Odo-ode	Abo to-oja	Oniyere	Illa	Oke So	Total	%
Less than 1	**10**	**12**	**15**	**4**	**20**	**3**	**12**	**5**	**4**	**3**	**88**	**29.93**
1-2	**10**	**20**	**20**	**6**	**20**	**5**	**10**	**5**	**6**	**5**	**107**	**36.39**
2-3	**9**	**6**	**12**	**1**	**10**	**1**	**7**	**1**	**1**	**1**	**49**	**16.66**
3-4	**6**	**4**	**4**	**1**	**3**	**1**	**6**	**1**	**2**	**1**	**29**	**9.86**
4-5	**2**	**2**	**0**	**0**	**4**	**0**	**4**	**0**	**0**	**0**	**12**	**4.08**
Above 5	**1**	**0**	**3**	**0**	**3**	**0**	**1**	**0**	**1**	**0**	**9**	**3.06**
Total	**38**	**44**	**54**	**12**	**60**	**10**	**40**	**12**	**14**	**10**	**294**	**100**

Source: Field work 2008

Table 5. comparative analysis of food prices

Market	**1ton of Yam**	**1 bag of Garri**	**1 bag of maize**	**1 bag of yam flour**	**1 bag of local rice**
Afon	**N8,000**	**N2,600**	**N6,200**	**N14,000**	**N5,700**
Otte	**N8,000**	**N2500**	**N6,500**	**N15,000**	**N5,800**
Laduba	**N7,500**	**N2,300**	**N6,000**	**N14,500**	**N5,500**
Ogbondoroko	**N7,800**	**N2,500**	**N6,100**	**N14,800**	**N5,540**
Odo-ode	**N6,500**	**N2,300**	**N5,800**	**N14,200**	**N5,250**
Aboto-oja	**N6,500**	**N2,400**	**N5,650**	**N14,000**	**N5,300**
***Ilorin**	**N9,500**	**N3,000**	**N7,100**	**N15,000**	**N6,000**

*prices of food at Ago Market, Ilorin just for comparison

Source Field work, 2008.

Table 6. Stepwise multiple regression results

Variables	Parameter estimates	Standard error	R	R^2	% change	Cumulative %
intercept	**1.2130**	**2.4211**				
X3	**2.0672**	**1.0722**	**0.7462**	**0.5569**	**-**	**55.70**
X8	**-3.0390**	**0.4883**	**0.8182**	**0.6695**	**11.25**	**66.95**
X5	**0.1040**	**0.4883**	**0.8677**	**0.7530**	**8.35**	**75.30**
X4	**1.2061**	**-1.0024**	**0.9038**	**0.8170**	**6.40**	**81.70**
X7	**1.0013**	**2.1170**	**0.9159**	**0.8390**	**2.20**	**83.90**
X12	**0.0010**	**0.0012**	**0.9215**	**0.8492**	**1.02**	**84.92**

Source :computer output,2008.

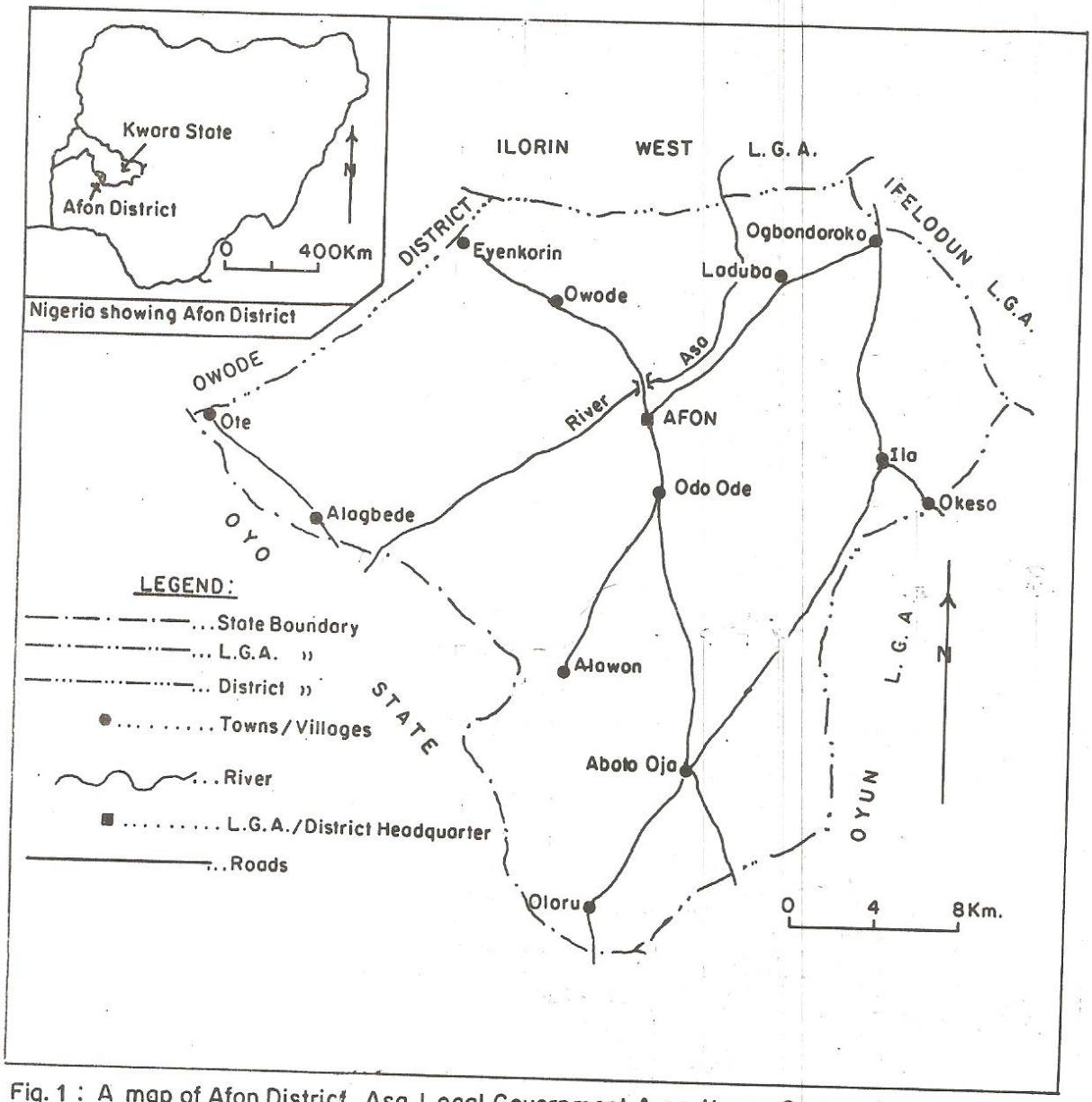

Fig. 1 : A map of Afon District, Asa Local Government Area, Kwara State, Nigeria.
Source :- Kwara State Ministry of Lands and Housing, 2007.