

SOCIO-ECONOMIC ASPECTS OF CASSAVA CULTIVATION IN NIGERIA: A CASE STUDY OF ESAN AREA OF EDO STATE

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Abstract

Garri - one of the products of cassava tuber, is the commonest and cheapest staple food item in Nigeria. Cassava was imported into Nigeria by Portuguese traders in the early 19th century. It has since diffused spatially to all the nooks and crannies of this country. Nigeria, with an estimated annual production of 33 million tonnes of cassava tubers, is certainly the world's leading producer. Both climatic and edaphic factors ensure the wide-spread acceptability of cassava cultivation in Nigeria. The development of high yielding and quick maturing specie of cassava by the International Institute for Tropical Agriculture (I.I.T.A) Ibadan further endured its cultivation into the hearts of Nigerian farmers. Today more than 72 percent of the farmers are engaged in cassava cultivation as their main farm business. Cassava cultivation has remarkably improved the socio-economic well-being - high income, employment opportunities, improved housing quality and enhanced mobility characteristics of the farming population. However, price fluctuation, high cost of transporting cassava tubers and the deplorable conditions of the available basic needs facilities in Esan tends to reduce the benefits derivable from cassava cultivation. Improving the level of basic facilities and forming farmers' co-operative society in the region are recommended for mitigating the problems of cassava cultivation.

Introduction

Cassava (*manihot esculenta*) is the most popular staple food crop in Nigeria and some other sub-Saharan African countries. All the parts (roots, stem, leaves, etc) of the cassava plant are useful in one form or the other. For instance, the root tubers can be processed into a variety of edible food items such as garri, paste (fufu), tapioca, flour and industrial starch. The stems are used for propagation while the leaves serve as vegetables for soup. Also, the peels from the tubers are fed to livestock. Cassava tubers are rich in carbohydrates and have been found to contain some vitamins such as A and C and some traces of phosphorus and iron.

This very important plant called cassava originated in central America and was imported into Nigeria by some Portuguese traders in the early 19th century (International Institute for Tropical Agriculture (I.I.T.A), Ibadan, (I.I.T.A., 1998). It has since diffused spatially into all the nooks and crannies of Nigeria. Following the widespread acceptability of cassava, it has gradually become the most cultivated food crop in the country. Agboola (1979) posited that over the years, cassava has emerged as the crop with the highest potentials.

World's annual production of cassava roots (tubers) in 1990 was estimated at 158 million metric tonnes and 46 percent of this amount was produced in Africa (Bokanga, 1996). But according to Nweke et al (1993), Africa produced an estimated 48 million metric tonnes of cassava annually. This translates into an average of more than 200 calories per day per 200 million people. Nigeria with an annual production of more than 33 million metric tonnes of cassava is the world's leading producer (I.I.T.A, 1998). Its extensive cultivation has been attributed to its adaptability to the wide variety of Nigerian soils, its resistance to drought, pest and diseases, ease of cultivation, extended in-ground storability of its roots (tubers) which ensures a food reserve to which farmers can resort to during food shortages, etc (I.I.T.A, 1996). These qualities have endeared its cultivation into the hearts of most farmers in Nigeria. This paper examines the socio-economic benefits and problems of cassava cultivation using the Esan area of Edo state (Nigeria) as the locale for the study.

The Study Area

For an objective analysis of the socio economic benefits derivable from cassava cultivation in Nigeria, a typical food crop producing region- the Esan area of Edo State (see Figure 1) is chosen. The rationale for the choice of the study area is the fact that, the Esan area of Edo State is largely rural and a majority of the people are farmers specializing in cassava cultivation (Omofonmwan, 19). The Esan area of Edo State is the geographic unit situated between latitude 6° 10¹ and 6° 45¹ north the Equator, and between longitude 6° 10¹ and 6° 35¹ east of the Greenwich Meridian. The latitudinal

locations imply that the study area falls within the tropical region. Thus, the TM experiences the tropical climate which is characterized by wet and dry seasons. The mean annual rainfall is estimated at 1,556mm, and usually falls from conventional storms. The mean annual temperature is about 26° C.

The soil types are ferrisols on loose sandy sediments. These soil types are less leached consequently retain the advantage of a good rooting depth. The top soil, when freshly cleared :-: forest contain about 5 percent organic matters and can thus sustain food crop (e.g. cassava) for seven years without application of fertilizer (Akinbode, 1983).

Methods of Study

The data for this study were acquired through questionnaire administration, oral interne visit to some cassava farms for intensive studies and extensive travels throughout the region, r uniform and even spread of questionnaire throughout the region, spatial frames were constructed the existing political divisions and subdivisions. The-study area is politically divided into five local government areas viz; Esan Central, Esan North East, Esan South East, Esan West and Igueben(see Figure - I). Each of these five Local Government Areas is sub-divided into ten wards except Esir North East, which is divided into eleven. In other words, there are fifty-one wards in the study are*. Wards are the lowest spatial closures or areal units created for the organization of the electoral processes. The fifty-one wards in the region are re-designated in this study as fifty-one areal units or spatial closures for the purposes of data collection, analysis and discussions.

Twenty copies of questionnaire were administered in each of the fifty-one spatial closures a the region. Thus, a total of one thousand and twenty questionnaires were administered for the purpose' of collecting data for this study. Within each of the spatial closures, twenty heads of households who are full-time farmers were randomly selected for questionnaire administration. The choice of heads of households is because, this category of respondents most adequately represent the interest of their respective households (Omofonmwan, 2001 b). A-100 percent response was ensured by the replacement of lost or misfilled questionnaire.

Cassava Cultivation in the Esan Area of Edo State

There is no written account of the spatial diffusion of cassava into the Esan area of Edo State. But oral interview revealed that cassava was introduced into the region by migrant tenant farmers from the eastern part of Nigeria in the early 20th century. Before the introduction of cassava, yam and cocoyam were the main root crops cultivated in the area. However, some historic events occurred in Nigeria that facilitated the increased participation of farmers in the cultivation of cassava.

The first is the locust invasion of the 1950s during which most crops were destroyed but the cassava plants were rarely affected. Cassava products were the "saving grace" during the terrible famine which came on the heels of the invasion by locust. Secondly, the period of the Nigerian civil war (1967-1970) was characterized by food shortages because farmers were unable to engage in viable fanning activities. Cassava which needs less tending and has capacity for in-ground food storage system became very important. Thirdly the development of local technology of processing cassava tubers into edible food items further endeared its cultivation into the heart of our farmers. Fourthly, the development of high yielding and quick maturing specie such as TMS 30572, 30001. I.I.T.A. 60506, 60447 and 30555 by the International Institute for Tropical Agriculture Ibadan (I.I.T.A 1992) reduced the periods of cultivation but increased the net returns from cassava farming. Finally, over population and urbanization are twin processes in the developing countries of the world which are linked directly to the increasing demand for food items especially cassava products. This is the main reason behind the commercialization of cassava farming and monetization of cassava products. Cassava cultivation is the major source of income to the fanners in the Esan area of Edo State.

The historical events discussed in the preceding paragraph encourage the farmers not only to cultivate cassava but also to specialize in it.

Table 1: Number of Farmers in Cassava Cultivation

Crops	Respondents	Percentage
Cassava	741	72.7
Rice	209	21.5
Yam	70	6.8
Total	1020	100.0%

Source: Field survey, 2003.

Of the 1020 farmers sampled for this study, 741 (72.7%) are engaged in cassava cultivation as their main farm business. The other respondents mentioned rice (21.5%) and yam (6.8%) as their main farm produce. However, it is necessary to mention here that, mixed cropping is part of the people's culture (Omofonmwan, 2003). In other words, farmers in the study area cultivate a variety of crops but cassava cultivation is the doyen of all farming activities in the region.

Cassava farming begins with land preparation which involves slashing and burning. Cassava is propagated by stem cutting, and planting can be carried out any time between March and September. Traditionally, planting of cassava is done on unploughed land. The soil is opened -up or dug with hoe and the stem cuttings buried. Where ridges or mud (or mound) are prepared, the stem cuttings are inserted vertically, horizontally or at slanty angles. However, field survey revealed that farmers prefer horizontal planting because it is more stable or firm on the ground, it yields best and cannot easily be affected by strong winds. Field investigation further showed that none of the farmers uses fertilizer to cultivate cassava. They argue that the soils in the area are fertile enough for cassava cultivation. This confirms Onwueme's (1978) finding that cassava can grow and yield reasonably on soil of low fertility where the production of other crops would be uneconomical.

Weeding is carried out about two or three times before harvesting. Both weeding and harvesting are done manually. The exact time of harvesting depends on the time of planting and the specific specie. The quick maturing specie is harvested between 9 and 12 months of planting while others require longer periods before maturing. In practice, cassava stays longer than 12 months before harvesting and a plot of cassava farm is hardly ever harvested once except it is specifically planted for commercial purpose. The reason is that the farmers prefer the in-ground storage system because cassava tubers deteriorate rapidly when harvested and kept unprocessed. The situation in the study area is that, the farmers prudently harvest what they need at particular time and leave the others unharvested.

The processing of cassava is very laborious. It involves harvesting, transportation, peeling, grating, fermenting and frying. It has been discovered that, cassava tuber is composed of about 62% water, 35% fat, 1.2% fibre 1% mineral water (Onwueme, 1978). Cassava is rich in vitamin C (35mg. per 1000 grammes of fresh cassava) and contains traces of niacin and vitamin A, B and B12 (Onwueme, Ibid). Locally, cassava can be processed into garri, fufu (paste) chips, flour and starch. But garri and fufu (paste) are the commonest form in which cassava is consumed in the Esan area of Edo State.

Socio-Economic Benefits of Cassava Cultivation

The socio-economic benefits derivable from cassava cultivation became pluralized due to the increasing commercialization and marketing of cassava products. In the study area, the farmers depend almost entirely on sales from cassava products for their income, consumption, wealth and other indicators of socio-economic well being. The socio-economic benefits derivable from cassava cultivation are discussed under the following four broad but related indicators of well-being. These are income, employment generation, housing quality and mobility characteristics.

Income

Income is relatively difficult to measure especially in a society dominated by non-salary earners and an uneducated population. However, oral interview involving "participatory income/consumption-expenditure assessment technique" (Simanowitz, 1999) enables us to collect sustainable information on the income derivable from cassava cultivation. First, farmers in the area cultivate an average of two and a half hecres of cassava farm. Secondly, the commercial value of an hectre of cassava farm is between forty- five and fifty thousand Naira (<W5,000 to N50,000). Thus,

2½ hectares of cassava farm would yield a minimum of one hundred and twelve thousand, five hundred naira (N112,500) per annum. This is gross income that is, cost of farm inputs-hiring of labour, purchasing of cassava stems, transportation etc are yet to be deducted. The cost of farm inputs varies from one farmer to the another. Whereas, some farmers do not incur any cost, others hire the services of labourers from land preparation to the marketing of cassava products. In this regard, the income of the farmers varies depending on the size of the farm, the cost of the various inputs used, and the quantity and quality of cassava produced.

Employment Generation

Cassava cultivation creates employment opportunities for a reasonable number of persons in the Esan area of Edo State. Apart from the fact that cassava farming engages more than 72 percent of the farming population, there are many other persons who are employed in the processing and transporting/marketing of cassava products. For instance, Table 2 shows that 664 persons are employed in the 237 cassava mills in the study area. In addition to this number, many local transporters are engaged in the transportation of cassava tubers from the farms to the residences of various farmers. Another set of people are employed in the marketing of cassava products in the traditional periodic markets. Furthermore, many people are employed in the loading, transporting and off loading of cassava products (especially garri) from the local markets to the towns and cities outside the region such as Benin (the State Capital), Abuja (the Federal Capital) Kano, Kaduna, etc. From the forgoing analysis, it can be asserted that cassava cultivation generates employment opportunities for many people.

Table 2: No. of Persons Employed in Cassava Processing Mills in the Esan Area of Edo State

Local Government Areas	No. of Cassava Mills	No. of Personnel Employed
Esan Central	46	126
Esan N.E	39	99
Esan S.E Esan	66	187
West Igueben	52	148
	34	104
Total	237	664

Source: Field Survey, 2003.

Housing Qualities

Housing characteristic is a surrogate measure of income and a standard indicator of well-being (Knox, 1995; Adedayo, 1986; Omofonmwan, 1992; 1975). Most of the sampled farmers claimed to have spent their income on renovation and/or building of their houses. Out of the 1020 respondents, 357 (35%) lived in modern houses built with cement blocks, plastered with cement and roofed with corrugated iron sheets (See Table 3). Table 3 further reveals that a total of 531 (52 percent) renovated their houses by plastering with cement and roofed them with iron sheets. The remaining 132 (12.9%) are also in the process of renovating their houses.

Table 3: Housing Quality of Cassava Farmers

Building Materials	No. of Houses	Percentage
Mud Mud but	132	12.9
Plastered Cement	531	52.1
Block	357	35.0
Total	1020	100.0%

Source: Field Survey, 2003.

The import of this finding is that cassava cultivation has further enhanced the socio-economic well-being of the farmers in the study area.

Mobility Characteristics of the Farmers

Mobility characteristics are a valid indicator of the socio-economic well-being of a people. In this study, the indices of mobility characteristics measured are ownership of means of transport to and from the farm. Such means of transport include, car/pickup vans, motorcycle and bicycle (See Table 4). Table 4 shows that, 485 (45.5%) of the farmers in the region own cars or pickup vans. Also 796 (78%) owns motorcycles. Furthermore, 201 (19.7%) used bicycle while only 82 (8.3%) used head portorage. It is necessary to mention here that some of the sampled farmers own more than one of the listed means of transportation. That is, a farmer with a car/pickup van may at the same time own a motorcycle and/or bicycle. The high percentage of the sampled farmers having their personal means of transport is a testimony of the high income derivable from cassava cultivation.

Table 4: Mobility Characteristics of the Cassava Farmers

Means of Transport	No. of Respondents	Percentage
Car/Pickup Van	485	45.55
Motorcycle	796	78.04
Bicycle	201	19.21
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Source: Field Survey, 2003.

Generally, the socio-economic benefits derivable from cassava cultivation are many. Other areas where their income is spent include training their children in post primary and tertiary institutions within and outside the region. Furniture, electronics and some other life pleasing facilities were acquired with the income earned from cassava cultivation.

Problems of Cassava Cultivation

Cassava is a crop with relatively few problems. However, the most intractable problem as indicated by the respondents is fluctuation in the prices of cassava products. Other problems listed, are lack of modern storage facilities, high cost of transportation and rodent attacks on cassava farm. Price fluctuation is a common feature of agricultural produce in Nigeria. Over supply of cassava products (such as garri) leads to a fall in price while a decrease in supply will lead to a rise in the price. Farmers are unable to regulate supply and are therefore not in a position to dictate the price. Cassava tubers even after processing deteriorate quickly. Thus, farmers are forced to dispose of them at a give-away-price. This is because, there are no modern methods or techniques of preserving garri for a long time in order to regulate the supply.

Cassava tubers are very bulky and heavy, head portorage, bicycle and even motorcycle can carry a only limited quantity. Consequently, commercial drivers charge very high fares for transporting the tubers from the farm to their various destinations. The access roads linking the farms to the homes of the farmers are in a deplorable condition. Potholes, gullies and flooded portions are the characteristics of the farm roads. These are some of the reasons for the high cost of transporting farm produce to the homes of the farmers and the local market.

The farmers also listed the inadequacy of basic human needs:- piped water supply, health service facilities, educational institutions, electricity, modern housing, etc as militating against increased cassava production. This is because, the near absence or inadequate supply of the aforementioned basic needs generates a flow of young men and women from the study area to the urban centres outside the region. The result is that the population structure of the region is now skewed in favour of the old people. The problem therefore is, who will take over from the current farming population?"

Conclusion and Recommendations

Nigeria with an estimated production rate of about 33 million metric tonnes per annum is the world's leading producer of cassava. This ultimate positioning of the country in the production of cassava is due to its adaptability to a variety of Nigeria's climatic and edaphic conditions. The development of high yielding and quick maturing species has further endeared cassava cultivation into the hearts of Nigerian farmers. Today more than 72 percent of Nigerian farmers especially in the study area cultivate cassava as their main farm business. Cassava cultivation has remarkably improved housing quality and enhanced mobility characteristics of the farming population.

However, price fluctuations, lack of modern storage facilities, poor access roads and high

transport fares among others reduce the socio- economic benefits derivable from cassava cultivation. The inadequacy of basic need facilities in the area has generated a flow of young men and women into the urban centres outside the region. Consequently there is the fear of who will succeed the current generation of farmers.

The following suggestions are made to mitigate the observed problems. First, government should improve on the level of basic human needs in the region. This will not only stem the tide of rural - urban drift but will most likely encourage the people to join the noble profession which is farming.

Secondly the farmers should be encouraged to form co-operative societies. In this regard, they can pull their resources together to buy pick- up vans to assist in the evacuation of their farm products. The co-operative societies can also attempt to fix prices for the various measures of cassava products. This attempt may help to stabilize the prices of cassava products. Thirdly, the co-operatives can obtain loan from the bank e.g. the Nigerian Agricultural Co-operative and Rural Development Bank (NACRDB) to set -up a cassava processing factory. Finally, the creation of "CELLs" for agricultural extension workers would assist to bring modern methods and innovations in cassava cultivation nearer to the farmers.

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