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RESOURCE UTILIZATION IN CASSAVA PRODUCTION IN AKOKO SOUTH EAST LOCAL GOVERNMENT AREA OF ONDO STATE, NIGERIA.

[1]Mgbakor Miriam N., [2]Uzendu Patrick O. and [1]Adegboro S. A.

[1]Department of Agricultural Economics and Extension Faculty of Agriculture and Natural Resource Management Enugu State University of Science and Technology (ESUT), Enugu Nigeria.
[2]Department of Agriculture and Bioresource Engineering Enugu State University of Science and Technology (ESUT), Enugu Nigeria.

ABSTRACT

Inspite of the importance of oil, agriculture still remains the main stay of the Nigeria economy despite the structural development of the non-agricultural sector at the expense of the agricultural sector, agriculture continues to be the base of Nigeria's economic development; employing about 70% of the country's labour force. This study examined resource utilization in cassava production in Ondo State of Nigeria. The survey for this study was carried out with the use of structural questionnaires and personal interview of 60 cassava farmers in one local government areas of six communities out of the existing 18 local Government areas of the state. The data obtained were analyzed using descriptive statistics such as frequency and percentages, other tools are the gross margin and regression analysis. Descriptive statistics was used to examine the socio-economic characteristics of the cassava farmers; gross margin analysis was used to determine the profitability of cassava production in the study area while regression analysis was used to examine resource use efficiency of cassava farmers in the study area. Demographic characteristics of the respondents revealed that some of the respondents (26.7%) were adults between 50 and 59 years of age and mean age of 44years, indicating that most of the respondents could cope with the rigor of cassava production. The distribution shows that the respondents are aging. The analysis also indicated that majority of the respondents (55%) cultivate less than one hectare of cassava farm. Also, most of the farmers (58.3%) were married and most of the cassava farmers (71.7%) are literate. Their mode of operation reveals that most of the cassava farmers still depended on the use of family and hired labour and no cassava farmer is involved in farm mechanization. The gross margin analysis revealed that cassava production was a profitable business in the study area with an average gross margin of ₦44,000.00 and ₦-6700.00 per farmer per year, for improved technology adopters i.e. adopters of agrochemicals respectively and non-adopters of improved technologies i.e. farm implement (hoes and cutlasses) and non users of agro chemicals respectively, thereby revealing the profit gap between the improved technology adopters and the non adopters of improved technologies. The result of the regression analysis shows that all the explanatory variables considered explained 87.3% of variation in the total output of cassava in the study area while labour hours, size of farm and cost of fertilizer were significant (5%level) in determining the output of cassava farmers. It was observed that most of the farmers were not aware of the benefit of improved technology, they lack enough land for cultivation, the cassava farmer should be allocated with land to farm in order to increase their output of the cassava farmer, in the study area and the cassava farmers are highly advised to adopt improved technology in order to increase cassava output.

Keywords: Resource utilization, Cassava production, Akoko South East L.G.A., Ondo State and Nigeria.

INTRODUCTION

In spite of the importance of oil, Agriculture still remains the main stay of the Nigeria economy [1]. Despite the structural development of the non-Agricultural sector at the expense of the agricultural sector, agriculture continues to be the base of Nigeria's economic development; employing about 70% of the country's labour force [2]. Agriculture also plays a vital role in substituting importation of staple foods and raw materials with locally produced agricultural products. Table 1.1 shows the contribution of agriculture to the Gross Domestic Product (GDP) of Nigeria. Cassava in particular is important in the Nigeria economy. Its cultivation is done in all the agro-ecological zones and year round, cultivation is done in the swampy forest zone. It is the most widely cultivated crop in the southern part of the country in term of area devoted to it and number of farmers growing it. Indeed, it is grown by almost every household. Cassava has also increased in important in the middle belt in recent years. In all places, cassava has become very popular as a food and cash crop and is fast replacing yam and other traditional staples in terms of quantity produced, it agricultural share of the Gross Domestic product (GDP) of the Nigeria Economy.

For sustainable production cassava and other staple foods for local consumption and export, the veritable tool is the efficient utilization of human and physical resources. This is because prior the era of oil boom in Nigeria, agricultural export accounted for more than 80% of Nigerian's total export and food production for local consumption [1]. The need for resource use efficiency in cassava production in Nigeria is essential for the growth and development of Nigeria Economy. Rural farmers are faced with problems of resource scarcity and in-effective utilization of the available ones [3].

Land, Labour, capital and efficient management or entrepreneurship are important inputs of cassava production in Nigeria. Their availability and accessibility in small-holder and commercial production units is very important in production. Constraints to these two categories of producers as well as reduction in the quantity of cassava produced will result in low yield and perpetuate the vicious cycle of poverty in rural households.

[4], classified small scale farmers in terms of the size of their farm holdings. Small scale farms are farms under 6 hectare. Medium scale farms range between 6 and 9.99 hectares while large scale farms are 10 hectares and above. The small scale farms are important in world agriculture. They account for about 60% of the world production and about 50% of the world population depending on subsistence agriculture scattered over wide expanse of land area with rudimentary farm systems, low capitalization and low yield per hectare [5].

Apart from foreign exchange earned on agricultural products, tax is imposed on it to generate revenue internally. Agriculture is therefore the engine of economic growth, but oil boom of the 1970s marked a drastic decline in the contribution of agriculture to the Gross Domestic product (GDP), foreign exchange and raw materials to the industries [6].

OBJECTIVE OF THE STUDY

The general objective of this study is to examine resource utilization in cassava production among farmers in Ondo State.

To achieve the overall objectives, the specific objectives are to:

- examine and describe the socio-economic characteristics of cassava farmers in the study area:
- determine the level of utilization of resources in cassava production in the study area:
- determine profit gap between adopters of improved technology and non-adopters of technology for cassava production in the study area:
- identify the constraints and factors militating against efficient utilization of resources in the production of cassava in the study are:
- to make recommendations based on the study area.

HYPOTHESIS

The following of null hypothesis and alternative hypothesis was tested.

Ho: There is no significant difference between resources utilization and output in cassava production in study area.

HA: There is significant difference between resource-utilization and output in cassava production in study area.

JUSTIFICATION OF THE STUDY

Nigeria has the potential, particularly in terms of land and human resources needed to produce enough food for the country [11]. To be self sufficient in food production, the problems of promoting the production of the most promising staple food crops in the country has to be tackled. One of the staple food crops which have the potential for pulling the country out of the present food crisis is cassava. Cassava known for its ability to produce appreciable carbohydrate yield on soil too poor to sustain the growth of other crops resistance to drought.

Increased production of staple food crops, such as cassava, cannot be achieved by the use of traditional production practices alone. It requires more resource utilization production technologies to cope with the demand for cassava products both for consumption and non-consumption [12]. According to [13], eighty percent of Nigerians in the rural areas eat a cassava meal at least once a day, hence it plays a major role in the country's food security. The high consumption of cassava in the country led to an increase, both for food and industrial uses, which exceeded the supply[14].

It is in this regard that the study is expected to provide empirical data on the level of resource utilization in cassava production in the area. This will be essence for planners and policy makers in planning and formulation policy that will promote the yield per hectare of cassava in the area.

Secondly, the study is expected to be of immense benefit to the farmers, since it will provide them with techniques that will enhance their resource utilization, hence enhancing returns from their farm activities.
It is also expected that the study will be of great relevance to students and researchers.

LIMITATION OF THE STUDY

In carrying out this work some problem where encountered by the researcher with the following:
Some of the respondents were unable to understand the questionnaire given to them, this is because of their level of education. Some of the respondents tried to hide their identity thinking that the government wants to use it to increase taxation. However, the above limitation where reduced by personally educating the respondents on the purpose of the research work during the primary data gathering exercise.

RESEARCH METHODOLOGY

THE STUDY AREA

The study was conducted in Ondo state. Ondo state is one of the five states carved out of the former western state of Nigeria in 1976. It lies between latitudes $5^{0}45^{1}$ and 8^{0} 15^{1} North of the equator and longitude 4^{0} 45^{1} and $6^{0}0^{1}0$ East of Greenwich meridian. It is bordered in the North West by Ekiti and Kogi states, west by Osun state, East by Edo and Delta states; south west by Ogun state.
Agriculture is the main occupation of the people and it provides income and employment for over 70% of the population in the state. It also contributes over 70% of the state Gross Domestic product (Ondo State ministry of Agriculture, fisheries and natural resources, 2005). The farmers in the state grow food and other crops for domestic consumption and export. These are cassava, cocoa, cashew, rice, palm produce, yam, citrus, plantain, cowpea and kolanut.
Ondo state contributes more than 40% of the total cassava production in the South Western part of Nigeria [15]. In contrast to most parts of Ondo State the seaward part of the state i.e. EseOdo and Ilaje, is more swampy and is characterized by extensive creeks, on account of which fishing replaces farming as the dominant aspect of the rural economy as shown in the table 3.1: below. As with most parts of Nigeria, agriculture is one of the dominant aspect of the rural economy of the people of Irele and Okitipupa, but they produce less compared to other areas of the state because most of their land is swampy and not very favourable to cassava production.

SAMPLING PROCEDURE OR TECHNIQUES

Data were collected from cassava farmers in one (1) Local Government out of the existing eighteen local government areas in the state. The Local Government selected was Akoko South East Local Government Area. The Local Government has 100 registered cassava farmers in the area, and 60 cassava farmers were selected randomly out of the registered cassava farmers. The Local Government has 6 communities which are Isua, Ifira, Ipesi, Ipe, Sosan and Epinmi from this communities 10 respondent were sample out from each community to make up 60 respondents. Structured questionnaires were

administered to the cassava farmers to obtain a sample size of sixty (60) cassava farmers in the study area.

METHOD OF DATA COLLECTION

Data for this study was obtained from both primary and secondary collection. Primary data was obtained from cassava producers with the aid of structured questionnaire. The questionnaire was administered to 60 randomly selected cassava farmers in the study area. The secondary data was collected from libraries, Central Bank of Nigeria and other relevant websites, bulletins, textbooks, journals and conference proceedings.

RESULTS AND DISCUSSION

The results of the findings are discussed in this chapter with the following order.

- Examine and describe the socio-economic characteristics of cassava farmers in the study area.
- Determine the level of utilization of resources in cassava production in the study area.
- Determine profit gap between adopters of improved technology and non-adopters of technology for cassava production in the study area.
- Identify the constraints and factors militating against efficient utilization of resources in the production of cassava in the study area.
- To make recommendations based on the study area.

Hired Labour

Table 1: Use of hired farm labour by Respondents

Hired labour	Frequency	Percentages	Cumulative percentages
Yes	49	81.7	81.7
No	11	18.3	100
Total	60	100	

Source: field survey, 2013.

Table 1 shows that 81.7% of the respondents hired farm labour while 18.3% of the respondents do not hired farm labour. This means that most of the cost of the farmer enter labour of the farm, attention should be pay to it strictly.

Cost of Planting

Table 2 Cost of planting by Respondents

Cost of Planting	Frequency	Percentages	Cumulative percentages
5000 – 9,999	23	38.3	38.3
10,000 – 14,999	9	15	53.3
15,000 – 19,999	15	25	78.3
≥20,000	13	21.7	100
Total	60	100	

Source: field survey, 2013.

Table 2 shows that 38.3% of the respondents spent between five thousand naira but less than ten thousand naira, 15% of the respondents spent between ten thousand naira but less than fifteen thousand naira, 25% of the respondents spent between fifteen thousand naira but less than twenty thousand naira while 21.7% of the respondents spent more than twenty thousand naira on planting. This means that most of the respondents (38.3%) in the study area spent between five thousand naira but less than ten thousand. This is still manageable by the farmers in order to increase their productivity.

Cost for Land clearing

Table 3: Cost for land clearing by Respondents

Costfor land clearing	Frequency	Percentages	Cumulative percentages
5000 – 9,999	23	38.3	38.3
10,000 – 14,999	9	15	53.3
15,000 – 19,999	15	25	78.3
≥20,000	13	21.7	100
Total	60	100	

Source: field survey, 2013.

Table 3 in this cases, 38.3% of the respondents spent between five thousand naira but less than ten thousand naira, 15% of the respondents spent between ten thousand naira but less than fifteen thousand naira, 25% of the respondents spent between fifteen thousand naira but less than twenty thousand naira while 21.7% of the respondents spent more than twenty thousand naira this means that high cost is been spent on land clearing which will affect the income of the cassava farmer.

Cost for Harvesting

Table 4: Cost for Harvesting by Respondents

Cost for harvesting	Frequency	Percentages	Cumulative percentages
5000 – 9,999	26	43.3	43.3
10,000 – 14,999	21	35	78.3
≥15,000	13	21.7	100
Total	60	100	

Source: field survey, 2013.

Table 4: in this indicate that 43.3% of the respondents spent five thousand naira but less than ten thousand naira, 10% of the respondents spent ten thousand naira but less than fifteen thousand naira while 21.7% of the respondent spent more than fifteen thousand naira. This means that most of the respondent spent high cost value on cassava for harvesting.

Cost for Making Ridgings

Table 5 Cost for making ridgings by Respondents

Cost for making ridgings	Frequency	Percentages	Cumulative percentages
5000 – 9,999	5	8.3	8.3
10,000 – 14,999	21	35	43.3
15,000 – 19,999	6	10	53.3
≥20,000	28	46.7	100
Total	60	100	

Source: field survey, 2013.

Table 5 shows that (0%) of the respondents spent less than five thousand naira on making ridgings, 8.3% spent more than five thousand naira but less than ten thousand naira, 35% spent more than ten thousand naira but less than fifteen thousand naira, 10% spent more than fifteen thousand naira but less than twenty thousand naira while 46.7% spent more than twenty thousand naira on making ridgings. This means that high cost is spent on making ridgings by the respondents. This will go a long way to affect the income of the farmers.

Cost of labour that loads the produce

Table 6 Cost of labour that loads the produce by Respondents

Cost of labour that loads the produce	Frequency	Percentages	Cumulative percentages
<5000	21	35	35
5000 – 9,999	27	45	80
10,000 – 14,999	7	11.7	91.7
15,000 – 19,999	3	5	96.7
≥20,000	2	3.3	100
Total	60	100	

Source: field survey, 2013.

Table 6 shows that 35% of the respondents spent less than five thousand naira, 45% of the respondents spent more than five thousand naira but less than ten thousand naira, 11.7% spent more than ten thousand naira but less than fifteen thousand naira but less fifteen thousand, 5% spent more than fifteen thousand naira but less than twenty thousand naira while 3.3% spent more than twenty thousand naira. This means that the cost spent on loads is averagely high in which the cost disadvantage is not more on the income of the farmer.

Operation with hired labour

Table 7 Operation for which labour is hired by Respondents

Operation with hired labour	Frequency	Percentages	Cumulative percentages
Land clearing	3	5	5
Ridgings	27	45	50
Planting	7	11.7	61.7
Weeding	8	13.3	75.0
Fertilizer application	13	21.7	96.7
No use of hired labour	2	3.3	100
Total	60	100	

Source: field survey, 2013.

Table 7 shows that 5% of the respondents hired labour for land clearing, 45% for ridging, 11.7% for planting, 13.3% for weeding, 21.7% for fertilizer application while very few percentage 3.3% of the respondents do not use hired labour. This means that majority of the farmers make use of hired labour, but more on land clearing than in other operations and this affect the income of the farmer.

Amount spent on hired labour

Table 8 Expenditure on hired labour per cropping season by Respondents

Amount spent on hired labour	Frequency	Percentages	Cumulative percentages
Less than 10,000	4	6.7	6.7
10,000 – 19,999	7	11.7	18.4
20,000 – 29,999	11	18.3	36.7
30,000 – 39,000	15	25.0	61.7
≥40,000	23	38.3	100
Total	60	100	

Source: field survey, 2013.

Table 8 shows that very few percentages (6.7%) of the respondents spent less than ten thousand naira, 11.7% of the respondents spent more than ten thousand naira but less than twenty thousand naira, 18.3% spent more than twenty thousand naira but less than thirty thousand naira, 25.0% spent more than thirty thousand naira but less than forty thousand naira while 38.3% spent more than forty thousand naira on hired labour per cropping season. This means that most of the respondents (93.3%) in the study area spent more than ten thousand naira on hired labour. This will go a long way to affect the income of farmers.

Land Acquisition

Table 9 land Acquisition by Respondents

Land acquisition	Frequency	Percentages	Cumulative percentages
Inheritance	34	56.7	56.7
Purchasing	7	11.7	68.4
Leasing	16	26.7	95.1
Others	3	5.0	100
Total	60	100	

Source: field survey, 2013.

Table 9 shows that 56.7% of the respondents acquire their land through inheritance, 26.7% leasing their land, 11.7% purchase their land while 5.0% acquire their land through other means. This means that majority of the respondents acquire their land through inheritance. This will contribute positively to cassava production in the study area, because the farmers will have access to land for production without any fixed cost from land acquisition. According to Okereke(2012) noted that cassava farmers sourced their farm land through inheritance of family lands.

Payment 0f land use

Table 10 Payment of land used by Respondents

Payment of land used	Frequency	Percentages	Cumulative percentages
Yes	23	38.3	38.3
No	37	61.7	100
Total	60	100	

Source: field survey, 2013.

Table 10 shows that 38.3% of the respondents pay for land used while 61.7% of the respondents do not pay for the land used. The implication is that most of the farmer do not spend more cost on land used and this increase the income of the farmer.

Cost of land

Table 11 Cost of land used by Respondents

Cost of land	Frequency	Percentages	Cumulative percentages
Less than 10,000	9	15	15
10,000 – 19,999	5	8.3	23.3
20,000 – 29,999	6	10	33.3
>30,000	3	5	38.3
Free	37	61.7	100
Total	60	100	

Source: field survey, 2013.

Table 11 shows that 15% of the respondents spent less than ten thousand naira on land, 8.3% spent more than ten thousand naira but less than twenty thousand naira, 10% spent more than twenty thousand naira but less than thirty thousand naira, 5% spent

greater than equal to thirty thousand naira while 61.7% do not pay for land. This means that the farmer cost on land is reduce or low in this case income of the farmer is not affected.

Assess to incentives

Table 12 Assess to incentives by Respondents

Assess to incentives	Frequency	Percentages	Cumulative percentages
Yes	44	73.3	73.3
No	16	26.7	100
Total	60	100	

Source: field survey, 2013.

Table 12 this means that 73.3% of the respondents have assess to incentives while, 26.7% of the respondents do not have access to incentives. This means that most of the respondents have access to incentives. This will encouraged the farmer to produce more and increase the yield of the cassava farmers

Sources of incentive

Table 13 Sources incentive by the Respondents

Incentives	Frequency	Percentages	Cumulative percentages
Extension	15	25	25
Individual farmer	12	20	45
Cooperative	17	28.3	73.3
None of the above	16	26.7	100
Total	60	100	

Source: field survey, 2013.

Table 13 indicates that 25% of the respondents got incentives from extension agent, 20% got incentives from individual farmers, 28.3% got incentives from cooperative, while 26.7% do not have incentive from anywhere.

Cost of improved cassava cutting

Table 14 Cost of improved cassava cutting by Respondents

Cost of improved cassava cutting	Frequency	Percentages	Cumulative percentages
<5000	25	41.7	41.7
5000 – 9,999	11	18.3	60
No use of improved cassava cutting	24	40	100
Total	60	100	

Source: field survey, 2013.

Table 14 indicates that 41.7% of the respondents spent less than five thousand naira, 11% spent more than five thousand naira but less than ten thousand naira while 40% do not use improved cassava cutting). This means that most of the farmer spent lesser cost on improve cassava cutting which will contribute to their income.

Access to the use of credit for farm production

Table 15 Assess to the use of credit for cassava production by Respondents

Use of credit	Frequency	Percentages	Cumulative percentages
Yes	36	60	60
No	24	40	100
Total	60	100	

Source: field survey, 2013

Table 15 indicates that 60% of the respondents borrow money while 40% of the respondents do not borrow money this means that many of the respondents have access to credit.

Sources of credit facilities (fund)

Table 16 Sources of credit facilities (fund) for cassava production by Respondents

Sources of fund	Frequency*	Percentages	Cumulative percentages
Commercial bank	3	3.3	3.3
Micro-finance bank	5	5.6	8.9
Friends	10	11.1	20
Community association	18	20	40
Personal savings	54	60	100
Total	90	100	

Source: field survey, 2013.

* Multiple responses

Table 16 indicates that 60% of the respondents obtain funds for cassava production from personal savings, 20% obtain theirs from cooperative societies, 11.1% obtain from friends, 5.6% obtain from micro-finance bank while 3.3% obtain loans from commercial banks. This implies that most of the funds needed by the respondents for cassava production were generated through self-help efforts.

There exists absence of financial institutions in most rural areas thereby making them not accessible to rural dwellers. Many of them could not obtain funds from banks probably because of high interest rates which are normally charged by banks. Sometimes they may be required to present collaterals which they may not have, thereby preventing them from having access to such funds. Rural people were unwilling to borrow because of cultural anathema attached to it; instead they can go for other financial transactions such as deposition and withdrawal of money from personal savings. The finding is supported by [16], who reported that farmers finance cassava production from personal savings.

Amount obtained as the credit facilities

Table 17 Amount obtained as the credit facilities by Respondents

Amount obtained as the credit	Frequency	Percentages	Cumulative percentages
<50,000	7	11.7	11.7
50,000 – 100,000	10	16.7	28.4
101,000 – 160,000	4	6.7	35.1
161,000 – 220,000	5	8.3	43.4
≥ 230,000	10	16.7	60.1
No credit facilities	24	40	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 17 indicates that 11.7% of the respondents obtained credit facilities less than fifty thousand naira, 16.7% obtained credit facilities more than fifty thousand naira but less than equal to one hundred thousand naira, 6.7% obtained more than one hundred and one thousand naira but equal to one hundred and sixty thousand naira, 8.3% obtained more than one hundred and sixty one thousand naira but equal to two hundred and twenty thousand naira, 16.7% obtained more than two hundred and thirty thousand naira while 40% do not obtained credit facilities. This means that more cassava farmer obtain loan

Payment of loan collected

Table 18 Payment of loan collected by Respondents

Payment of loan	Frequency	Percentages	Cumulative percentages
Yes	36	60	60
No	0	0	60
No Loan	24	40	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 18 shows that 60% of the respondents pay back the loan collected while 40% do not collected any loan. This means most of the farmer collected loan to support their farm production in order to increase the productivity of the cassava farmer.

Payment of Loan

Table 19 Payment of loan by Respondents

Payment of Loan	Frequency	Percentages	Cumulative percentages
By installment	28	46.7	46.7
Pay once	8	13.3	60
No loan	24	40	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 19 shows that 46.7% pay the loan by installment, 13.3% pay the loan at once while 40% do not obtained any loan.

Cost of capital (interest rate of payment)

Table 20 Cost of capital (interest rate of payment) by Respondents

Cost of capital	Frequency	Percentages	Cumulative percentages
<10%	22	36.7	36.7
11 – 15%	8	13.3	50
No interest	30	50	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 20 shows that 36.7% of the respondents pay less than 10% interest rate, 13.3% of the respondents pay between 11 to 15% interest rate while 50% of the respondents do not pay interest due to personal savings.

Source of inputs used

Table 21 Source of inputs used by Respondents

Source of inputs	Frequency	Percentages	Cumulative percentages
Other farmers	19	31.7	31.7
ADP	15	25	56.7
Cooperative	18	30	86.7
Others	8	13.3	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 21 shows that 31.7% of the respondents got their inputs from other farmer, 25% of the respondents got their inputs from ADP, 30% got their inputs from cooperative societies, 13.3% got their inputs from others sources. This means that majority of the farmers got their inputs from other farmers. This will have positive effect on the farmers input, because the farmers will see themselves as colleagues and will want to share inputs at a lower cost or free of charge.

Obtainable inputs

Table 22 obtainable inputs by Respondents

Obtainable inputs	Frequency	Percentages	Cumulative percentages
Cassava cutting	39	65	65
Fertilizer	6	10	75
Herbicide	5	8.3	83.3
Implements	10	16.7	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 22 from the data collected 65% indicates that cassava cuttings is the major inputs obtainable from their source of inputs, 10% indicates fertilizer, 8.3% indicates herbicide

while 16.7% indicates implements as the major obtainable inputs. This means that the major inputs obtainable by the respondents are cassava cuttings.

Cost of cassava cutting

Table 23 Cost of cassava cutting by Respondents

Cost of cassava cutting	Frequency	Percentages	Cumulative percentages
<5000	13	21.7	21.7
5000 – 9,999	25	41.7	63.4
10,000 – 14,999	12	20	83.4
15,000 – 19,999	8	13.3	96.7
≥20,000	2	3.3	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 23 shows that 21.7% of the respondents spent less than five thousand naira on cassava cutting, 41.7% spent more than five thousand naira but less than ten thousand naira, 20% spent more than ten thousand naira but less than fifteen thousand naira, 13.3% spent more than fifteen thousand naira but less than twenty thousand naira, while 3.3% spent more than twenty thousand naira. This means that majority of the respondents spent on cassava cutting at a range between (5000– 14,999).

Cost of fertilizers used

Table 24 Cost of fertilizers used by Respondents

Cost of fertilizer	Frequency	Percentages	Cumulative percentages
<5000	10	16.7	16.7
5000 – 9,999	23	38.3	55
10,000 – 14,999	7	11.7	66.7
15,000 – 19,999	2	3.3	70
≥ 20,000	2	3.3	73.3
No use of fertilizer	16	26.7	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 25 shows that 16.7% of the respondents spent less than five thousand naira, 38.3% spent more than five thousand naira but less than ten thousand naira, 11.7% spent more than ten thousand naira but less than fifteen thousand naira, 3.3% spent more than fifteen thousand naira but less than twenty thousand naira 3.3% spent more than twenty thousand naira while 26.7% do not have any cost on fertilizer. This means that most of the respondents uses fertilizer this will increase more yield of their produce.

Cost of herbicide

Table 26 Cost of herbicides used by Respondents

Cost of herbicide	Frequency	Percentages	Cumulative percentages
<5000	7	11.7	11.7
5000 – 9,999	16	26.7	38.4
10,000 – 14,999	6	10	48.4
15,000 – 19,999	0	0	48.4
≥ 20,000	1	1.7	50
No use of herbicide	30	50	100
Total	60	100	

Source: field survey, 2013.

Table 26 shows that 11.7% of the respondents spent less than five thousand naira, 26.7% spent more than five thousand naira but less than ten thousand naira, 10% spent more than ten thousand naira but less than fifteen thousand naira, 0% spent more than fifteen thousand naira but less than twenty thousand naira, 1.7% spent more than twenty thousand naira while 50% do not spent any amount on herbicide. This means that average of the respondents did not used herbicide on their farm.

Use of cutlass

Table 27 Use of cutlass by the Respondents

Use of cutlass	Frequency	Percentages	Cumulative percentages
Yes	57	95	95
No	3	5	100
Total	60	100	

Source: field survey, 2013.

Table 27 shows that 95% of the respondents use cutlass while 5% of the respondents did not use cutlass. This means that majority of the respondents involved in non-adopters of technology.

Number of cutlass used

Table 28 Number of cutlass used by Respondents

Number of cutlass	Frequency	Percentages	Cumulative percentages
Two	5	8.3	8.3
Three	30	50	58.3
Four	15	25	83.3
≥ five	7	11.7	95
No use of cutlass	3	5	100
Total	60	100	

Source: field survey, 2013.

Table 28 shows that 8.3% used two cutlasses, 50% used three cutlasses, 25% used four cutlasses, 11.7% used more than five cutlass while 5% did not use cutlass. This means that majority of the respondent uses three cutlass.

Cost of cutlass per one

Table 29 Cost cutlass per one by Respondents

Amount (per one)	Frequency	Percentages	Cumulative percentages
500 – 1000	22	36.7	36.7
1100 – 1600	30	50	86.7
1700 – 2200	5	8.3	95
None	3	5	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 29 shows that 36.7% of the respondents spent more than five hundred naira but less than one thousand, 50% of the respondents spent more than one thousand and one hundred naira but less than one thousand and six hundred naira, 8.3% spent more than one thousand seven hundred naira but less than two thousand and two hundred naira while 5% of the respondents did not buy cutlass at all. This means that in the study area cost per one cutlass is high and this will affect the income of the farmer.

Cost of cutlass

Table 30 Cost of cutlass by the Respondents

Cost of cutlass	Frequency	Percentages	Cumulative percentages
5000 – 9,999	35	58.3	58.3
10,000 – 14,999	15	25	83.3
≥15,000	7	11.7	95
No use of cutlass	3	5	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 30 shows that 58.3% of the respondents spent more than five thousand naira but less than ten thousand naira, 25% spent more than ten thousand but less than fifteen thousand naira, 11.7% spent more than fifteen thousand naira while 5% did not spend on cutlass.

Use of hoe

Table 31 use of hoe by the Respondents

Use of hoe	Frequency	Percentages	Cumulative percentages
Yes	42	70	70
No	18	30	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 31 shows that 70% used hoe while 30% did not use hoe. This means that majority of the farmer are still practices subsistence farming.

Number of hoe used

Table 32 Number of hoe used by Respondents

Number of hoe	Frequency	Percentages	Cumulative percentages
One	2	3.3	3.3
Two	13	21.7	25
Three	15	25	50
Four	5	8.3	58.3
≥ five	7	11.7	70
No use of hoe	18	30	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 32 shows that 3.3% of the respondents used one hoe, 21.7% used two hoes, 25% used three hoes, 8.3% used four hoes, 11.7% used more than five hoes while 30% did not use hoes. This means that majority of the respondents are still operating under subsistence practices.

Cost of hoe per one

Table 33 Cost of hoe per one by Respondents

Amount (per one)	Frequency	Percentages	Cumulative percentages
<500	19	31.7	31.7
500 – 1000	13	21.7	53.4
1100 – 1600	8	13.3	66.7
1700 – 2200	2	3.3	70
No use of hoe	18	30	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 33 shows that 31.7% of the respondents spent less than five hundred naira, 21.7% spent more than five hundred and less than one thousand, 13.3% spent more than one thousand and one hundred naira but less than one thousand and six hundred naira, 3.3% spent more than one thousand seven hundred naira but less than two thousand and two hundred naira while 30% did not spent on hoe.

Cost of hoe

Table 34 Cost of hoe used by Respondents

Cost of hoe	Frequency	Percentages	Cumulative percentages
<5000	21	35	35
5000 – 9,999	16	26.7	61.7
10,000 – 14,999	5	8.3	70
≥ 15,000	0	0	70
No use of hoe	18	30	100

Total	**60**	**100**

Source: field survey, 2013.

Table 34 shows that 35% of the respondents spent less than five thousand naira, 26.7% spent more than five thousand naira but less than ten thousand naira, 8.3% spent more than ten thousand naira but less than fifteen thousand naira, while 30% did not spend on hoes. This means majority of the farmer still involved in subsistence farming.

Regularity of the source of inputs

Table 35 Regularity of the source of inputs used by Respondents

Regularity of inputs	Frequency	Percentages	Cumulative percentages
Regular	29	48.3	48.3
Irregular	31	51.7	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 35 shows that 48.3% of the respondents got their inputs regularly while 51.7% did not get their inputs regularly. This means that source of inputs of the respondents is not regular.

Causes of poor output

Table 36 causes of poor output in the study

Causes of poor outputs	Frequency	Percentages	Cumulative percentages
Untimeliness	15	25	25
Pest and diseases	17	28.3	53.3
Lack of improve varieties	15	25	78.3
Others	13	21.7	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 36 shows that 25% of the respondents poor output was caused by untimeliness of inputs, 28.3% by pest and diseases, 25% was caused by lack of improved varieties while 21.7% accounted for other causes. This means that most of the poor outputs in the study area were caused by pest and diseases and untimeliness of inputs and lack of improve varieties since they have very small percentages difference.

Weeding of farm

Table 37 weeding of farm by Respondents

Weed farm	Frequency	Percentages	Cumulative percentages
Yes	60	100	100
No	0	0	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 37 shows that 100% of the respondents weed their farms while 0% of the respondent did not weed their farms. This means that the entire farmer weed their farm.

Weeding before harvesting

Table 38 Number of weeding by the Respondents

Weeding before harvesting	Frequency	Percentages	Cumulative percentages
Once	4	6.7	6.7
Twice	26	43.3	50
Three times	17	28.3	78.3
Four times	13	21.7	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 38 shows that 6.7% of the respondents weed their cassava farm once before harvest, 43.3% weed twice, 28.3% weed three times while 21.7%weed four times before harvest. This means majority of the farmers weed twice before harvest.

Cost of weeding

Table 39 cost of weeding by Respondents

Cost of weeding	Frequency	Percentages	Cumulative percentages
<5000	14	23.3	23.3
5000 – 9,999	26	43.3	66.6
10,000 – 14,999	9	15	81.6
15,000 – 19,999	7	11.7	93.3
≥ 20,000	4	6.7	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 39 indicates that 23.3% of the respondents spent less than five thousand naira, 43.3% spent more than five thousand naira but less than ten thousand naira, 15% spent more than ten thousand naira but less than fifteen thousand naira 11.7% spent more than fifteen thousand but less than twenty thousand naira, while 6.7% spent more than twenty thousand naira. This means that majority of the farmer spent within the range of five thousand naira and ten thousand naira.

Use of manure

Table 40 Use of manure by Respondents

Use of manure	Frequency	Percentages	Cumulative percentages
Organic manure	18	30	30
Inorganic manure	30	50	80
All of the above	6	10	10
None use of manure	6	10	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 40 indicates that 30% of the respondents used organic manure, 50% of the respondents used inorganic manure while 10% of the respondents used both of the manure, 10% of the respondents do not use manure. This means that majority of the farmers use manure in their production this will help increase the output of the farmers.

Cost of organic manure

Table 41 Cost of organic manure by Respondents

Cost of organic manure	Frequency	Percentages	Cumulative percentages
<500	6	10	10
500 – 1000	10	16.7	26.7
1100 – 1600	6	10	36.7
1700 – 2200	1	1.7	38.4
≥2300	1	1.7	40.1
No use of organic manure	36	60	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 41 shows that 10% of the respondents spent less than five thousand naira, 16.7% of the respondents spent more than five hundred but less than one thousand naira, 10% spent more than one thousand and one hundred naira but less than one thousand and six hundred, 1.7% spent more than one thousand and seven hundred naira but less than two thousand and two hundred naira 1.7% spent more than two thousand and three hundred naira while 60% do not spent on organic manure. This means that cost spent on organic manure by the farmers is averagely high. This will reduce the income of the farmers.

Form of selling farm produce

Table 42 Form of selling farm produce by Respondents

Form of selling farm produce	Frequency	Percentages	Cumulative percentages
Wholesaler	23	38.3	38.3
Retailer	14	23.3	61.6
All of the above	23	38.3	100
Total	**60**	**100**	

Source: field survey, 2013.

Table 42 shows that 38.3% of the respondents were used to selling their cassava to wholesaler, 14% of them were used to selling their cassava to retailer, while 23% of them were used to selling their cassava to all of the above. This means that majority of the farmers were used to selling in wholesale price. This will help the farmers to dispose

their farm activities on the farm, but their income might be reduced because retailer sale attract higher price.

Selling of farm produce in bundles

Table 43 Selling of farm produce in 35kg bundles by Respondents

Selling of farm produce	Frequency	Percentages	Cumulative percentages
<500	14	23.3	23.3
500 – 1000	25	41.7	65
1100 – 1600	15	25	90
≥1700	6	10	100
Total	60	100	

Source: field survey, 2013.

Table 43 shows that 23.3% of the respondents were selling at less than five hundred, 41.7% of the respondents were selling at more than five hundred but less than one thousand, 25% of the respondents were selling at more than one thousand and one hundred naira but less than one thousand and six hundred naira while 10% of the respondents were selling at more than one thousand and seven hundred naira. This means that majority of the farmers were selling their farm produce at an average price which is consider good to the buyer and it will increase the income of the farmer.

Cost of transportation

Table 44 Cost of transportation by Respondents

Cost of transportation	Frequency	Percentages	Cumulative percentages
<5000	34	56.7	56.7
5000 – 9,999	15	25	81.7
10,000 – 14,999	8	13.3	95
15,000 – 19,999	2	3.3	98.3
≥20,000	1	1.7	100
Total	60	100	

Source: field survey, 2013.

Table 44 indicates that 34% of the respondents spent less than five thousand naira on transport, 15% of the respondents spent more than five thousand and less than ten thousand, 8% spent more than ten thousand but less than fifteen thousand naira, 2% spent more than fifteen thousand naira but less than twenty thousand naira. This means than majority of the respondents spent less value on transportation. This will go a long way to save the income of the farmers.

Problem encountered during cassava production

Table 45 Problem encountered during cassava production by Respondents

Problem encountered	Frequency*	Percentages	Cumulative percentages
Lack of improved cassava cutting	41	19.8	19.8
High cost/lack of fertilizer	34	16.4	36.2
Problem of land tenure system	49	23.7	59.9
Insufficient/high cost herbicides	41	19.8	79.7
Inability to assess credit facilities	42	20.3	100
Total	207		

Source: field survey, 2013.
This table 45 is called multiple responses
*Multiple responses were recorded

Table 45 shows that 19.8% of the respondents were highly constrained by lack improved cassava cutting, 16.4% were highly constrained by high cost/lack of fertilizer, 23.7% were highly constrained by problem of land tenure system, 19.8% were highly constrained by insufficient/high cost of herbicides, while 20.3% were highly constrained by inability to assess credit facilities. This means that majority of the cassava farmers are faced with the problem of land tenure system which causes land fragmentation in the communities, this problem will not allow the rural farmer to be able to make used of machinery in the farm (modern technologies) and this reduces the productivity of the cassava farmer.

RECOMMENDATIONS

Table 46 Recommendations by Respondents

Recommendation	Frequency*	Percentages	Cumulative percentages
Government should provide improved varieties of cassava	41	16.9	16.9
Government should increase assess to credit facilities	42	17.4	34.3
Government should allocate land to farmer	41	16.9	51.2
Government should provide improved machinery at moderate rate	48	19.8	71
ADP should reduces the cost of input, cost of cutting and cost of herbicide	36	14.9	85.9
Extension agent should be regular in their visit	34	14.0	100
Total	242	100	

Source: field survey, 2013. This table 46 is called multiple responses

* Multiple responses were recorded

Table 46 shows that 16.9% of the respondents recommends that government should provide improved varieties of cassava, 17.4% recommends that government should increase access to credit facilities, 16.9% recommends that government should allocate land to farmer 19.8% recommends that government should provide improved machinery at moderate rate, 14.9% recommends ADP should reduces the cost of input, cost of cutting and cost of herbicide while 14.0% recommends extension agent should be regular in their visit the study recommends the need for governments at all levels to be highly involved in providing subsidies on fertilizers and agro-chemicals in order to assist the small-scale farmers in cassava production to increase productivity. It highlights that government should provide improved machinery at moderate rate in order to reduce human drudgery and increase timeliness in cassava production, it highlights on the issue that government should allocate land to farmer in order for them to be able to produce enough cassava for human consumption; it highlights that government should increase access to credit facilities in order to improve in cassava production and it will increase the productivity of the farmer. It also highlights that effort of extension agents in organizing training programmes, workshops, agricultural shows and seminars in order to sensitize the farmers. On the need for using improved cassava production technologies remains important.

BUDGETING TECHNIQUES

Table 47 Profit analysis results

S/n		Improved Technology Adopter	Non-adopters of Technology
a.	**Fixed cost**		
	Land	10,000.00	10,000.00
	Farm implement	19,666.67	4,500.00
	Total fixed cost(T F C)	29,666.67	14,500.00
b.	Variable cost		
	labour cost	79,500.00	93,500.00
	Transportation cost	75,000.00	50,000.00
	Operation cost	22,000.00	6250.00
	TVC	176,500.00	149,750.00
c.	Total cost = (TFC + TVC)	206,166.67	164,250.00
d.	Returns		
	Gross Farm Income (TR)	220,500.00	142,800.00
	Net Returns (NR)		
	Gross Margin (GM)=TR –TVC	44,000.00	-6700.00
	Net Profit (NP)=TR-TC	14,333.33	-21,450.00

Source: field survey, 2013.

Table 47 shows that farmers that adopt improved technology (i.e. farmers that make use of agro-chemicals) had higher net profit (₦14,333.33) compare to the non-adopters of improved technology (₦-21,450.00). This indicates that the use of improved technology has positive effect on the farmer's income.

REGRESSION RESULTS

Table 48 Factors affecting the output of cassava

Coefficients[a]

Model	Unstandardized coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	3.992	3.030		1.317	.193
Size of farm	12.584	5.932	.369	2.121	.039
Labour hours	.116	.049	.402	2.367	.022
1 Cost of fertilizer	.001	.000	.177	2.071	.043
Cost of insecticide/herbicide	001	.001	.084	1.044	.301
Level of education	-220	.162	-.070	-1.356	.181
Marital status	-138	2.700	-.003	-051	.959

a. Dependent Variable: Output of cassava.

Source: field survey, 2013.

Table 49

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the estimate	Durbin-watson
1	.934[a]	.873	.859	7.238	1.951

a. Predictors: (constant), Marital status, Labourhours, Level of education, cost insecticide/herbicide, Cost of fertilizer, Size of farm.

b. Dependent Variable: Output of cassava

Source: field survey, 2013.

Among the statistical regression models tested for the study, the linear functional form is taken as the lead equation based on statistical and economic criteria. Using level of significant at 5% level.

$Y = 3.992 + 12.584X_1 + 0.116X_2 + 0.001X_3 + 0.001X_4 - 0.220X_5 - 0.138X_6$

The data in table 48 reveals that size of farm, labour hours, cost of fertilizer, cost of insecticide/herbicide have direct (positive regression coefficient) relationship with the output of cassava in the study area, while level of education, marital status has inverse

(negative regression coefficient) relationship with the output of cassava in the study area.
However, using the significant level of the regression coefficients labour hours, size of farm and cost of fertilizers are significant while marital status, cost of herbicide/insecticide and level of education are not significant.
The R^2 of 0.873 (coefficient of determination) indicates that 87.3% of the variability in output of cassava (dependent variable) is explained by the independent (explanatory) variables (marital status, labour hours, level of education, cost of insecticide/herbicide cost of fertilizer, size of farm).
The significance ($P<0.05$) and positive relationship between size of farm and cassava outputs farmer implies that cassava outputs in the study area are more likely to increase if the farm size increase on hectare basis. This is in conformity with rational economic principles which states that the larger the farm size, the more the output.
Also, the table reveals that a unit increase in labour hours of the farmers contributed 0.116 unit increase in output of cassava in the study area, this implies that this could be because as the labour used per man day increases, the available needs in the farm plots that hinder output will be reduced and output increases. The table also indicates that a unit increase in the cost of fertilizer and cost of herbicide/insecticide of the farmers contributed 0.001 and 0.001 units to the output of the cassava in the study area.
Level of education had a negative effect on the output of cassava farmers which implies that level of education does not necessarily determine the output of cassava farmers in the study area. However, it is possible to hypothesize that when a farmer becomes highly educated he/she may pull out of farming to pick up a government job. The negative regression coefficient of the marital status indicates that if the level of marital status increases the output of the cassava farmer decreases.

HYPOTHESIS TESTING

The regression result presented in (Appendix 2)at 1% level of significance, indicates that the F-calculated is 60.708 while the (df) degree of freedom is 6, we reject the null hypothesis (H0:bs = 0, $P<0.01$).Whenever the degree of freedom (K-1) (df) move away from 1, reject the null hypothesis and conclude that the resource utilization is not equal to the output in cassava production which also means that there is significant different between the resource utilization and output in cassava production.

CONCLUSION

This paper examined resource utilization in cassava production in Ondo state of Nigeria. The survey for this study was carried out with the use of structured questionnaires and personal interview of 60 cassava farmers in one Local Government area of six communities out of the existing 18local government areas of the state. The data obtained were analyzed using descriptive statistics such as frequency and percentages, gross margin analysis, regression analysis and hypothesis testing.

Demographic characteristics of the respondents revealed that the mean age of the respondents was approximately 44years, 83.4% of them were below 60 years of age, indicating that most of them could cope with the rigor of agriculture. The analysis also indicated that majority of the respondents (58.3%) were married, with (71.7%) of then having formal education and most of them cultivate less than one hectare of land.

Their mode of operation and mode of weeding revealed that most of the farmers still depends on the use of crude implements but average of the farmers 50% adopted the use of herbicide. The non-utilization of mechanization is due to the farmer's small land holdings (land fragmentation) were observed to be the major factor militating against efficient utilization of resources in the study area.

In conclusion, the gross margin analysis revealed that cassava production was a profitable business in the study area with an average gross margin of ₦44,000.00 and ₦-6700.00 for improved technology adopters and non- adopters of technology respectively, per farmers per year thereby revealing the profit gap between the improved technology adopters and the non-adopters technology. Therefore farmers are better off if they adopt the use of improved technology and it means that famer with adopter of improved technology should replace farmer with non-adopter of technology.

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