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Economic Assessment of Fadama III Prone Plantain and Banana Farm Enterprises in Bayelsa State, Nigeria

Prince E. Kainga[1], Custodian D. Nnadi[1], Nimiye C. Morgan[2], Victoria E. Akpas[1]

[1] *Department of Agricultural Economics, Extension and Rural Development, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria.*

[2] *Department of Agricultural Economics, University of Nigeria, Nsukka, Enugu State, Nigeria.*

ABSTRACT

This study which was conducted in Southern Ijaw Local Government Area, Bayelsa State, Nigeria was on economic assessment of Fadama III prone plantain and banana farm enterprises. Random sampling technique was used to select Ten (10) plantain and banana Cooperative Groups/Fadama User Groups (FUGs) for the study. Furthermore, ten (10) households / beneficiaries were randomly selected from each of the FUGs totaling one hundred (100) households / beneficiaries. Descriptive statistics such as frequencies and percentages; and the budgeting technique were used to analyze the data. The results showed that 70.0% of the respondents fall between ages of 31-50. Majority of the plantain and banana farmers were married (85.0%), while males (60.0%) dominated plantain and banana production in the study area. The costs and returns analysis indicated that Net Farm Income for plantain and banana farm enterprises of Fadama beneficiaries were ₦284,300.00and ₦379,300.00 during production period while return on investment was ₦0.31 and ₦0.41 respectively, which implies profitability in plantain and banana production of Fadama beneficiaries. The study also identified inadequate land, high cost of transportation, delayed materials and disease outbreak as the major problems faced by plantain and banana farmers. If resources are properly provided and harnessed, plantain and banana farm enterprises are capable of generating income and creating jobs in the area through fadama users. Furthermore, there is need to providing more facilities and training to users of the project to improve on the present scope.

Key words: Fadama, Economic Assessment, Plantain, Banana, Enterprises.

INTRODUCTION

Several attempts made by government and non-governmental organizations to boost food security and alleviate poverty have failed. The federal government of Nigeria through the pooled World Bank loan initiated the Fadama project, to finance the development of Fadama lands by introducing small scale irrigation in states with Fadama development potentials. Consequently, the Fadama III development project which is assisted by World Bank aimed at building the capacity and sustainably increase the income of all Fadama resources users was put in place. The project was intended to reduce rural poverty, increase food security and contribute to the achievement of a key millennium development goal since the source of livelihood of majority of people in the rural areas primarily depends on farming. Therefore alleviating poverty in the rural areas entails boosting agricultural production in the State. The Improvement of the project development objective (PDO) of Fadama III was to increase the incomes of users of rural land and water resources on sustainable bases among others, with the view to ensure that yield of primary agricultural products of participating households would have

Address for correspondence:
princekainga@yahoo.com

increased by 20%; and average real income of participating users may have increased by at least 40% by 2013 [12], [13].

According to [8] real income of fadama III beneficiaries increased on average by 36.67% in Delta State, while [15] stated that more than 75% of the benefitting households had their real income increased by at least 40% and again have significantly impacted on enterprises invested on crop production in Ogun State of Nigeria.

Plantain and banana production may be one of the means of tackling this problem of poverty ringing in every part of rural areas in Bayelsa State, because the crop is one of the primary commodities for investment across Bayelsa State and South-south of Nigeria.

Plantain and banana are one of the most important staple food crops grown in the tropics and sub-tropics of the world. [7] Observed that banana and plantain represent more than 25 percent of the food energy requirement of Africa. Plantain and banana plays vital roles in the feeding systems of both human beings and farm animals. It has a very high nutritional value in source of dietary carbohydrates, vitamins and minerals. Plantain and banana are extremely rich in vitamin A.

The yield per hectare of plantain in Nigeria between1990-2004 indicates a downward trend while price per tonne have steadily increased within the period [5], [6]. In the same vain plantain and banana has become more expensive in Bayelsa State [1]; [2]. Yet sustainable production of plantain and banana is critical to food security, rural income, employment generation, and economic growth of Nigeria. The involvement of plantain and banana farm enterprises and entrepreneurs alike in Fadama III development project or similar government projects as a veritable means of job and wealth creation and income generation cannot be overemphasized. If resources channeled through Fadama III development project vis a vis plantain and banana enterprises are properly harnessed and managed it could lead to increased income generation, job and wealth creation in Fadama III development areas in Nigeria.

This study therefore focused on the economic assessment of Fadama III prone plantain and banana farm enterprises in Bayelsa State, Nigeria. The specific objectives were to examine the socio-economic characteristics of the Fadama users, to ascertain the costs and returns of the Fadama users and to identify constraints associated with plantain and banana fadama beneficiary farmers.

RESEARCH METHODOLOGY

The study was conducted in Southern Ijaw Local Government of Bayelsa State. Southern Ijaw is located on latitude $4^{o.}$ $48^{'}$ 17''N longitude 6^{o}. 04' 44''E. The area has a coastline of approximately 60km on the bight of Benin, with a population of 319,413 accounting for 18.75% of the total population of Bayelsa state[14] and covers an area of 2,682km^2[9]. The state generally covers an area of about 21,110 square kilometers, out of which more than three-quarter is occupied by water, with moderately low land [3]. Record from Fadama III office showed that Southern Ijaw Local Government Area consist of 17 FCAs out of which 18 plantain cooperative groups / FUGs cutting across seven (7) Fadama Community Associations (FCAs) which include Amassoma, Opuama, Enewari, Aguobiri, Amatolo, Oporoma, Olugbobiri were involved. Random sampling technique was used to select ten (10) plantain and banana cooperative groups/Fadama User Groups (FUGs) for the study. Furthermore, ten (10) households / beneficiaries were randomly selected from each of the FUGs giving a total number of one hundred (100) households / beneficiaries. Descriptive statistics such as frequencies and percentages; and the budgeting technique were used to analyze the data. The budgeting technique employed was the net farm income analysis. The difference between the total

revenue (TR) and total cost (TC) gives the net revenue (NR), Net returns on investment (NROI) is expressed as: NROI = NFI / TC, Net Farm Income NFI = TR – TC; TC = (TVC + TFC) = P_x. X, TR = P_y. Y, where P_y = Unit Price of Output, Y = Quantity of Output, P_x = Unit Price of Input, X = Quantity of Input, TC = Total Cost (₦), TFC = Total Fixed Cost (₦), TVC = Total Variable Cost (₦).

RESULTS & DISCUSSION

The socio-economic characteristics of the respondents are shown in Table 1. Majority (70.0%) of the plantain and banana enterprise in the Fadama III project farmers are between the age bracket of 31-50 years. The result therefore indicates that most of the farmers are young and energetic, since they are in their active age. The result conforms to the works of [10] whose result showed that plantain farmers in YenagoaLocal Government Area of Bayelsa State had 69.8% respondents between the age brackets of 21-50. Majority (60.0%) were male while the remaining 40.0% were female. This implies that membership of the Fadama user groups surveyed was male dominated. The result further indicates that 85.0% of respondents were married. About 7.0% were single, 0.0% divorced, 5.0% widow while 3.0% were widower respectively. This could be attributed to the fact that family men and women required family income to carter for their families. Thus, with increase in family income, it will lead to increase in output, and in turn improve their standard of living. The analysis showed that 15% of the plantain and banana farmers in the study area never attended school, that is, they had no formal education, while 85.0% of the respondents had one form of the formal education or the other. Out of the 85.0% of the respondents that had formal education, about 33% attended primary school, 42.0% attended secondary school while 10.0% attended higher institution at various levels. This implies that most of the farmers had only primary education; the farmers can therefore be classified as literates. Nevertheless, with the present global computer and internet age, literacy goes beyond the ability to read and write. Majority (75.0%) of plantain and banana farmers were full-time farmers while 25.0% were part-time. The survey further showed that there were more landlords in the Fadama User Groups than any other groups.

Table1. *Socio-economic characteristics of the respondents (N=100)*

Variable	Categories	Frequency	Percentage
Age (yrs)	< 30	20	20.0
	31 – 40	30	30.0
	41 – 50	40	40.0
	51 – 60	10	10.0
Sex	Male	60	60.0
	Female	40	40.0
Marital status	Married	85	85.0
	Single	7	7.0
	Divorced	-	-
	Widow	5	5.0
	Widower	3	3.0
Level of education	No formal education	15	15.0
	Primary	33	33.0
	Secondary	42	42.0
	Tertiary	10	10.0
Farming status	Full –time	75	75.0
	Part-time	25	25.0
Residential status	Landlord	45	45.0
	Tenant	20	20.0
	Family house	25	25.0
	With a friend/relative	10	10.0

Source: Field Survey Data, 2014

Table 2 shows the result of estimated costs and returns associated with plantain farmers in the study area. Total fixed cost of the plantain farmers surveyed was estimated at ₦ 757,700.00. Total variable cost was estimated at ₦ 158,000.00. This amount represents expenses on banana suckers, transportation and labour. The result indicated that the cost of production was ₦ 915,700.00 and total revenue of ₦ 1,200,000.00 was realized, giving a net income of ₦ 284,300.00. Therefore, the analysis indicated that plantain production was profitable. The returns on investment was 0.31 for the plantain farmers, indicating that plantain farmers in the study area returned ₦ 0.31 for every ₦ 1.00 naira invested in the business, thus further confirming the profitability of plantain production. This result is in agreement with the findings of [11] in a study of budgetary analysis of banana and Plantain productionin Bayelsa State where a profitable net income of ₦ 47,461.11 and ₦242,690.53 respectively was realized. Furthermore, net income per hectare of plantain farmers in a previous study was ₦223,420.00 [10]. Comparatively, results showed higher net income but lower returns on investment compared to that of 0.74k in [11]. The higher net income earned could be attributed to skills derived from Advisory Service Providers, while lower returns on investment, in spite of being beneficiaries as FUGs, total cost of production was on the high side which probably not properly managed. Nevertheless, the findings of profitability in plantain production were also in agreement with [4] who found that plantain production was profitable. They found that net farm income in plantain production with other crops was ₦203, 139.40 per hectare with return per naira as 37.7%, implying that for every one naira invested a profit of 37kobo was realized. While total revenue from only plantain was ₦223,214.00.

Table2. *Estimated costs and returns of plantain farmers*

Variable	Quantity	Total cost (₦)	Percentage
A. Fixed cost			
Land (ha)		700,000.00	76.44
Fixed asset dep		57,700.00	6.30
Total Fixed Cost (TFC)		**757,700.00**	
B. Variable cost			
Plantain suckers		27,000.00	2.95
Transportation		13,000.00	1.42
Labour (mandays)	150	118,000.00	12.89
Total Variable Cost (TVC)		**158,000.00**	
Total Cost = TFC + TVC		**915,700.00100**	
Total Revenue	10 tonnes at 120,000	**1,200,000.00**	
C. Net Farm Income			
NFI = TR – (TFC + TVC)		**284,300.00**	
ROI = (NFI/TC)		**0.31**	

Source: Field Survey Data, 2014

Total fixed cost of the banana farmers surveyed was estimated at ₦ 757,700.00. Total variable cost was estimated at ₦ 163,000.00. This amount represents expenses on banana suckers, transportation and labour. Findings also showed that the total cost of production per hectare was ₦ 920,700.00, with total annual sales of ₦ 1,300,000.00. Net income was estimated at ₦ 379,300.00. The returns on investment was 0.41 for the banana farmers, indicating that banana farmers in the study area returned ₦ 0.41 for every ₦ 1.00 naira invested in the business, thus further confirming the profitability of banana production in the study area (Table 3). The results showed that if resources are properly provided and harnessed, plantain and banana farm enterprises are capable of generating income and creating jobs in the area through Fadama users.

Table3. *Estimated costs and returns of banana farmers*

Variable	Quantity	Total cost (₦)	Percentage
D. Fixed cost			
Land (ha)		700,000.00	76.03
Fixed asset dep		57,700.00	6.27
Total Fixed Cost (TFC)		**757,700.00**	
E. Variable cost			
Banana suckers		32,000.00	3.48
Transportation		13,000.00	1.41
Labour (mandays)	60	118,000.00	12.81
Total Variable Cost (TVC)		**163,000.00**	
Total Cost = TFC + TVC		**920,700.00**	100
Total Revenue	10 tonnes at 130,000	**1,300,000.00**	
F. Net Farm Income			
NFI = TR – (TFC + TVC)		**379,300.00**	
ROI = (NFI/TC)		**0.41**	

Source: Field Survey Data, 2014

Table4. *Technology provided and used by the Fadama users*

Technology	Frequency	Percentage
Modern inputs	19	19
Improved variety	20	20
Training	25	25
Savings scheme	15	15
Farm inputs	11	11
Loan and grant	10	10
Total	100	100

Source: Field Survey Data, 2014

The result showed that 25% of the respondents indicated that there was training to promote savings scheme, 20% of the respondents admitted that there was provision for improved variety even if they would have to buy with their savings, 19%, 15%, 11% and 10% respectively said there were modern inputs available, and savings scheme such as FUEF (Fadama Users Equity Fund), farm inputs, grant and loans (Table 4).

Table 5 showed the distribution of plantain and banana farmers according to the problems they encountered in their farming activities. All the farmers were of the view that inadequate land, high cost of transportation, delayed materials and disease outbreak were the major problems. In specific terms, result indicates that 50.0% of the respondents were faced with inadequate land poor transportation (30%), delayed materials (16%) and disease outbreak (4%).

Table5. *Problems associated with plantain and banana farmers*

Problems	Frequency	Percentage	Rank **
- Inadequate of land	50	50.0	1st
- High cost of transportation	30	30.0	2nd
- Delayed materials	16	16.0	3rd
- Disease outbreak	4	4.0	4th
- Total	100*	100.0	

Source: Field survey, 2014.

*** Rank in descending order*

CONCLUSION AND RECOMMENDATION

The study focused on economic assessment of fadama III prone plantain and banana farm enterprises in Southern Ijaw Local Government Area. Results showed that plantain and banana production was dominated by the male who are married and with the age of 31-50 years. Most of the farmers attended one form of education or the other. The estimated net farm income for plantain and banana enterprises

were ₦284,300.00and ₦ 379,300.00 during production period while return on investment was ₦0.31 and ₦ 0.41 respectively, which implies profitability in plantain and banana production of Fadama beneficiaries. The results showed that if resources are properly provided and harnessed, plantain and banana farm enterprises are capable of generating income and creating jobs in the area through fadama users. The study also identified inadequate land, high cost of transportation, and disease outbreak as the major problems of the farmers. Therefore, it is recommended that there is need for the operators of fadama III project or other similar federal government projects to work with government to make lands available to plantain and banana farmers, in order to enhance increased production and standard of living. Furthermore, there is need to providing more facilities and training to users of the project to improve on the present scope.

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AUTHOR'S BIOGRAPHY

Prince Ebiowei Kainga, holds a PhD in Agricultural Economics. He is a Senior Lecturer/ Ag. Head of the Department of Agricultural Economics, Extension and Rural Development, Niger Delta University, Wilberforce Island, Amassoma, Bayelsa State, Nigeria.