Impact of Fadama III project on output of cassava in Calabar agricultural zone of Cross River State, Nigeria

* Emmanuel E.Agbachom,Otu I. Etah & Blessyn J. Ogar
Department of Agricultural Economics
University of Calabar, Calabar
*agbachomemmanuel@yahoo.com

Abstract

The study analyzed the impact of Fadama 111 project on output of cassava in Calabar agricultural zone. Specifically, the study determines if there is a difference in the output of cassava before and after Fadama 111 in the zone. A multi-stage sampling technique was used in the selection of respondents for the study. A total of sixty two (62) cassava farmers were purposively used for the study. Primary data was collected using structured questionnaire and interview schedule. Data obtained were analyzed using inferential statistics such as Z-test statistics. The study showed that, the mean outputs of cassava before and after the project were found to be (X_1) 4147.58kg and (X_2) 6,800.00kg respectively with a mean difference of 2652.419kg, which was statistically significant at 5%. It was therefore recommended based on the research findings that; , since the project had significant impact on cassava output, labour (L) and farm sizes (FS) should be increased to triple output of cassava for project sustainability.

Keywords: Impact, Fadama, output

Introduction

Nigeria is naturally endowed with good arable land, water resources, rich vegetation and favourable climate that support robust agricultural production (Amusa, Simonyan & Anugwo, 2017). Despite these potentials, Nigerians are still plague with poverty, hunger, food insecurity, starvation, food scarcity, increasing food prices and social problems of unemployment (Nwanyanwu, Amadi, & Amadi, 2014). However, in order to ensure the achievement of laudable objective of self-sufficiency in food production in the country, National Fadama Development Project was initiated. Fadama project is a World Bank development programme in Nigeria, which collaborates with the Nigerian Government (Baba & Singh, 1998; Aladetoyinbo, 2001). The National Fadama Development Project is executed in phases – Fadama I, II and III projects. The word "*Fadama*" is a Hausa name for irrigable land usually lowlying and flood plain areas underlined by shallow aquifers and found along Nigeria's river system (National Fadama Development Project, 2009). The

Federal Government of Nigeria between 1993 and 1999 implemented the first National Fadama Development Project (Fadama I). The implementation of Fadama I was trial tested in seven northern states which include: Bauchi, Gombe, Jigawa, Kano, Kebbi, Sokoto and Zamfara. As a result of the widespread adoption of the Fadama technology in those states, there was significant increase in farmers' income of up to 65% for vegetables, 334% for wheat and 497% for rice (National *Fadama* Development Project, 2005).

Following the substantial achievement of Fadama I in some States, the Federal Government was encouraged to seek for financial support from African Development Fund (ADF) and the World Bank towards the implementation of second National Fadama Development Project *(*Fadama II).

Fadama III was introduced after Fadama I and II had been completed. Though like the first and second schemes, Fadama III also adopted the community driven development (CDD) approach such that beneficiaries were the main drivers of the scheme. Local Community members under the umbrella of Fadama Community Association (FCAs) and Fadama User Groups (FUGs) oversee the design and implementation of the project to improve their livelihoods by increasing income-generating activities (Amusa, Simonyan & Anugwo,

2017). The scheme established standardized procedures and steps to guide the local people on how they could take part in the decision-making process. The project has six main components, which are capacity building, local governance and communication; small-scale community-owned infrastructure; advisory service and input support development; support to Agricultural Development Programmes (ADPs), sponsored research and on-farm demonstration; asset acquisition for individual FUG/Economic Interest Group; project management, monitoring and evaluation. The justification of output of cassava to evaluate the impact of Fadama III was of the fact that increase output increases profit and revenue of the farmer. Meier (1973) stated that, farmer's are poor because productivity is low. Therefore, cassava output will have multiplier effect in the different components involve in the project.

Objective of the study

The objective of this study was to analyze the impact of Fadama III on cassava output in Calabar agricultural zone, Cross River State.

The study sought to:

i. Determine if there is a difference in the output of cassava before and after the Fadama III agricultural project in the zone

Definition of terms

Impact: The effect or influence that a program or situation has on the economy.

Fadama: A flood plains and lowly areas underlined by shallow aquifers and found along Nigeria's river system.

*Project***:** This is a planned act of inter-related tasks to be executed over a fixed period and within certain cost and other limitations.

Output: Amount of crops produced by a farmer.

Food crops: These are crops produced for use as food either for sale or for consumption.

Research methodology

The study area

The study was conducted Calabar Agricultural zone of Cross River State, which is a coastal state situated in the South-South geopolitical zone of Nigeria. It is located on latitude $4^{o}28'$ and $6^{o}55'$ North of the Equator and longitude $7^{o}50'$ East of the Greenwich Meridian. It shares common boundaries with the Republic of Cameroun in the East, Yakurr LGA in the North, Ebonyi, AkwaIbom and Abia state in the West and Atlantic Ocean in the south. The state occupies an area of about 22,342.176 square kilometers. There are seven Local Government Areas and one hundred and ninety-three communities in the State. These seven local government areas are: Calabar South, Calabar Municipal, Bakassi, Akpabuyo, Odukpani, Akamkpa and Biase Local Government Areas (CRADP, 2010). There are about 1,738 million people who inhabit the area, of which the Efiks and Ejaghams are the major ethnic groups.

Calabar agricultural zone comprised of Bakassi, Akpabuyo, Calabar Municipality, Calabar South, Odukpani, Biase and Akamkpa LGAs is endowed with much natural and human resources, being presently exploited; land, labour, forest products, oil, plantation crops, provide the state with a substantial income which ought to support a satisfactory standard of living. The soils of Calabar agricultural zone are ultisol and alfisol but predominantly ultisol. The zone has one of the largest rainforest covering about 4,290 square kilometers. It is described as one of Africa's largest remaining virgin forest harbouring as many as three million species of animals, insects and plants. The zone is located within the evergreen rainforest zone. There are two distinct climate seasons in the area, rainy season from March to October and dry season from November to February. The annual rainfall varies from 2,500mm to 3,000mm. The average temperature is about 28°C. Calabar agricultural zone is characterized by presence

of numerous ecological and zoo-geographically important high gradient streams, rapids and waterfalls. Fishing, trading and subsistence agriculture are the main occupations of the people. Crops grown in the locality include rice, maize, yam, cassava, plantain and banana.

Sampling techniques and sample size

The sampling technique was done in Calabar agricultural zone Multi-stage sampling technique was used in the selection of local government areas, Fadama community associations (FCAs), Fadama users groups (FUGs) and participating rural farmers. In the first stage, one Calabar Agricultural zone was randomly selected In second stage, one (1) Local Government Areas (LGA) from the selected zone was randomly selected. In the third stage, two (2) Fadama community associations (FCAs) each was randomly picked from the selected Local Government Area. In the third stage, two (2) Fadama user groups (FUGs) were randomly selected from each Fadama community associations (FCAs) to give a total of four (4) Fadama user groups (FUGs). In the fourth and final stage, sixteen (16) participating cassava farmers were randomly selected from each Fadama user groups (FUGs) to give a total sample size of sixty four (64). The sampled size calculator based on the sampling theory was used to arrived at sampled size of 64.

Data analysis

Data collected were analyzed using inferential statistics. The difference in the output of cassava before and after the *Fadama* III agricultural project in the zone was analyzed using Z-test.

Results and discussion

Difference in output of cassava before and after the Fadama III agricultural project in the zone

The result showing the difference in the output of cassava before and after Fadama III project by beneficiaries is presented in Table 1. The before period and after period of Fadama III are the periods that connects the time before and after the commencement of the project. The result revealed the mean output of cassava before the project was 4147.58kg with a standard deviation of 2,115.350kg while the mean output of cassava after the project was 6,800.00kg with a standard deviation of 3,690.980kg. The difference in mean output of cassava before and after the project was 2652.419kg. It was however concluded that there was a significant difference in the cassava output after the project. This difference was statistical significant at 1% level of significance. This was possible because of the subsidy given to farmers. The finding is in line with the result of Girei *et al.* (2017) who examined the impact of Fadama III project on the income level of beneficiary farmers in

Plateau State. The study reported that there was a significant difference in the income of beneficiaries and non-beneficiary group before and after the project implementation. There was a high percentage rise in the income of beneficiaries after the project. Osondu *et al.* (2015) also reported that National Fadama III Programme had impacted positively and significantly on farmer participant's income and farm size at 5.0% level of significance.

Conclusion

Results indicated that there was increase in cassava output following the implementation of the Fadama III project. Thus, it was concluded that Fadama III project had significant impact on cassava output in Calabar agricultural zone, Cross River State, Nigeria.

Recommendations

The study recommends that for the sustainability of the Fadama III project, cassava farmers should be given more access to funds, labour (L) and farm size (FS).

References

Amusa, T. A., Simonyan, J. B. & Anugwo, S. C. (2017). Determinants of farm enterprise choice among Fadama users in federal capital territory, Abuja, Nigeria.*Nigerian Journal of Agriculture, Food and Environment*, 13(2): 104-111.

CRADP (2010). Description of Cross State: Cross River Agricultural Development rogramme.

Girei, N. D., Saingbe, M. A. Bitrus, M. A. &Bassey, I. H. (2017).Revealing the impact of *Fadama* III Project on the Income Level of Beneficiary Farmers in Plateau State, Nigeria.*European Journal of Academic Essays,* 4(2), 26-38.

NFDP (2009). The Paradigm shift under *Fadama* Development Project. Abuja. National Fadama Development Project.

NFDP. (2005). Poverty Reduction and Increased Productivity through Empowerment, Fadama Development Project Handbook. Abuja: National Fadama Development Project.

Nwanyanwu, D. H., Amadi, C. & Amadi, N. (2014). Assessment of farm outputs and rural income generation of school-to-land agricultural programme (STLAP) in Rivers State, Nigeria. .*Journal of Biology, Agriculture and Healthcare,* 4(14): 126-133.

Osondu, C. K., Ezeh, C. I., Emerole, C. O., & Anyiro, C.O. (2014). Comparative analysis of technical efficiency of smallholder Fadama II and Fadama III cassava farmers in Imo State. *The Nigeria Journal of Rural Extension and Development*, 8(1): 26-37.

Table 1. Difference in cassava output before and after *Fadama* III projects

S/N	Output before *Fadama*(Kg)(x) 1	Output after Fadama (Kg) (x)2	Difference
1	2000	5150	3150
2	1800	4900	3100
3	2000	4250	2250
4	4350	6650	2300
5	2150	4900	2750
6	4250	5600	1350
7	3900	5100	1200
8	3300	4900	1600
9	1400	2100	700
10	1900	2800	900
11	4250	6400	2150
12	5300	6600	1300
13	6400	8100	1700
14	1850	3750	1900
15	2300	4650	2350
16	3450	6400	2950
17	2250	4900	2650
18	2400	4450	2050
19	5050	9900	4850
20	8600	11000	2400
21	2900	5150	2250
22	4450	6200	1750
23	1800	3900	2100
24	6800	11500	4700
25	5150	6400	1250
26	2750	4900	2150
27	6800	12700	5900
28	3400	6650	3250
29	4300	5800	1500
30	2900	5500	2600
31	4000	5050	1050
32	2100	4400	2300
33	2500	4350	1850
34	4150	5100	950
35	3750	5000	1250
36	3500	5550	2050
37	4600	6600	2000
38	3300	6050	2750
39	3150	5000	1850
40	2750	5650	2900
41	3750	5650	1900
42	2900	4000	1100
43	7500	19000	11500
44	3150	5150	2000
45	3150	5500	2350
46	8800	13500	4700
47	8800	12500	3700
48	11300	20800	9500
49	10750	19000	8250
50	4300	6300	2000
51	4900	6450	1550
52	3250	5150	1900
53	4100	5400	1300
54	4300	6750	2450
55	2900	5750	2850
56	3800	5050	1250
57	4900	8300	3400
58	4250	5900	1650
59	3750	5150	1400
60	4250	6900	2650
61	2900	5250	2350
62	5500	10200	4700
Total	257150	421600	164450
Mean	4,147.58	6,800	2652.419
z-stat	4.909***		

p-value - 0.001, [1]Critical value (1.92)