
ANALYSIS OF IMPACT OF NATIONAL FADAMA II FACILITY IN ALLEVIATING POVERTY ON FOOD CROP FARMERS IN ADAMAWA STATE, NIGERIA

A.A. GIREI, B. DIRE, M.M. Iliya and M. Salihu

1. Department of Agricultural Economics and Extension, School of Agriculture and Agricultural Technology, Modibbo Adama University of Technology, Yola. Adamawa State
2. Department of Agricultural Economics and Extension, School of Agriculture and Agricultural Technology, Modibbo Adama University of Technology, Yola. Adamawa State
3. Department of Agricultural Extension and Management, College of Agriculture Jalingo. Taraba State.
4. Department of Agricultural Economics and Extension, Faculty of Agriculture, Federal University, Dutse. Jigawa State.

ABSTRACT: *This study analyzed the impact of Fadama II project in alleviating poverty on food crop farmers in Adamawa state. Data were collected on a sample of 160 farmers and were analyzed using descriptive statistics and Foster, Greer and Thorbecke (FGT) Index. The findings from the study showed that about 24 percent of the respondents lived below the poverty line of \$1.25 while about 76 percent are those above the agreed standard accepted in the study. This study shows very few of the respondents were poor hence; the project has made an impact on the poverty level of the crop farmers in the study area. This may be due to the fact that the Fadama farmers engaged in different production activities resulting to increase in income thereby reducing poverty amongst them. It is however recommended that, Government should take renewed interest in dry season production by strengthening support and public-private partnership so as to boost production and win niche markets with a challenge of making better markets for farmers.*

KEYWORDS: Analysis, Impact, Fadama II, Facility, Poverty Alleviation, Food Crop.

INTRODUCTION

One of the major problems confronting Nigeria today is how to improve the quality of life in the rural areas and reduce the level of poverty Adamu *et al*, 2013. Nigeria is a food-deficit country that on many occasions has been dependent on food imports Adeoye, (2010). Hence, most of the people in rural Nigeria today lacked basic necessities of life like the pipe-borne water, good roads, adequate supply of electricity, educational and health facilities, etc. Thus poverty abounds in most of these places (Haruna, 2006). In 2001 a New Agricultural Policy and the Integrated Rural Development Policy were initiated to ensure national food security, attain self-sufficiency in basic food production, enhance employment opportunities, achieve high growth rate for the economy and poverty reduction Balogun, *et al*, (2012). In order to fast track the gains of the 2001 New Agricultural Policy, there came the Presidential Initiatives in Agriculture (PIA) in 2004 and the National Special Food Security Program (NSFSP) and FADAMA II in 2005 were established to salvage the situation *Ibid*.

Poverty in Nigeria is not only a state of existence but also a process with many dimensions and complexities (Khan, 2000). Recent statistics from the National Bureau of Statistics indicate a worsening poverty statistics in the country and a cause for concern (Ayanwale and Alimi, 2004). The report of the 2006 Nigerian Core Welfare Indicator (CWI) on the poverty profile in the country stated that the dependency ratio, which was defined as the total number of household members aged 0-14 years and 65 years and above to the number of household members aged 15-64 years, was 0.8 (CBN, 2005). This indicated almost a one-to-one dependency ratio, and reflected the high population growth rate in the country. There is also large income inequality with the top 10% of the income bracket accounting for close to 60% of total consumption of goods and services (Ayanwale *et al*, 2004).

The concern about the threat posed by poverty has led the Nigerian government to devote considerable attention to alleviating its scourge through various aid programmes, some of the time in collaboration with the civil society and donor agencies. Some of these programmes include: Agricultural Development Programme (1975), Operation Feed the Nation (1986), National Directorate for Employment (1987), National Fadama Development Programme I (1992), Family Support Programme (1996), National Poverty Eradication Programme (2001), Special Programme on Food Security (2001), National Fadama II Programme (2004) among others.

Despite all these programmes, the percentage of the population living below the poverty line in Nigeria is still a subject of concern to government and donor agencies this is indicated by NBS, (2011). 67.38 % of population in Nigeria is living below the poverty line. However, the Second National Fadama Development Project (NFDP- II) was developed as a poverty reduction projects designed to sustainably increase the incomes of the Fadama users through expansion of farm and non-farm activities with high value added output, and to improve the living conditions of the rural poor, contribute to food security as well as increased access to rural infrastructure. Though, Simonyan *et al*, (2012) in their study shows that, the income of the beneficiary farmers in Fadama II project has increased significantly more than before the project and also more than the non-beneficiaries' income. However does the project development objective of Fadama II project achieved and has the livelihood condition of the Fadama II beneficiary crop farmers improved with regards to their poverty status as a result of the Fadama II intervention?

This study therefore was designed to analyze the National Fadama II facility in Adamawa State on the beneficiaries in terms of their income, access to necessary enabling facilities and general well-being on the premise that there were a relationship between poverty and productivity and that the Fadama II facilities benefitted in Adamawa State has increase the income and wellbeing of the beneficiaries.

Consequently, the study was structured to provide answers to the following questions:

- i. What were the socio- economic characteristics of Fadama II participants in Adamawa State?
- ii. What was the incidence (and severity) of poverty among the beneficiaries of Fadama II in Adamawa State?

Hypotheses:

Ho: The socio- economic characteristics of Fadama II participants does not affect food crop production in the study area.

Ho: There was no relationship between poverty and productivity of Fadama II participants in food crop production.

METHODOLOGY

The appraisal study was carried out in Adamawa State with Ten (10) out of the 21 local government areas that participated in Fadama II project. The state has a tropical climate with maximum temperature reaching to as high as 40°C between December and January (Adebayo , 1999). The mean annual rainfall is generally less than 1000 mm in the central and north-western part of the state including Song, Gombi, Shelleng, Guyuk, Numan, Demsa, Yola and parts of Fufore local government area (Adebayo , 1999). The fadama land in the state lies along the basins of major rivers, streams, lakes and dams, which are located in the state. These are: Benue, Gongola, Yedzaram, Gerio, Mayo-Ine, Mayo-Belwa, Kilange, Kiri, Song, Wandu, Digil, Chochi, Faro and Mayo-Hesso. The state has 923-registered Fadama user's associations (FUA's) that were into crop production with each comprising of 10 to 30 members (ADSFDO, 2006). Multistage stratified random sampling and purposive sampling techniques were used in the selection of respondents. In the first stage, the state was stratified into four according to the Adamawa Agricultural Development Programme (ADADP) zones . In each of the zone, participating local government areas in Fadama crop production were purposively selected in proportion to the existing number of Fadama User Associations (FUA).In line with this, four local government areas in Zone II and one each in Zones I, III and IV were selected. In all, a total of seven local government areas were sampled. One hundred and sixty (160) food crop farmers were randomly selected in the FUA groups in the seven selected local government areas in proportion to their number in each local government. The membership of each FUA ranges from 10 – 30.

Conceptual and Analytical Framework

The poverty situation among Fadama II beneficiaries was measured using Foster, Greer and Thorbecke (FGT) Index (Foster *et al.* 1984). This method subsumes the Headcount Ratio and the poverty gap measurements (Anyanwu, 1997). It also allows for the decomposition of poverty levels among the various categories of a population. It is generally given as:

$$FGT_{\alpha} = \frac{1}{N} \sum_{i=1}^H \left(\frac{z - y_i}{z} \right)^{\alpha} \quad (1.0)$$

Where:

α = Foster, Greer and Thorbecke Index

$(0 \leq P \leq 1)$

N = Total number of farmers

Z = Poverty line

Y_i = Income of the farmers (The sum is taken only on the poor)

q = Number of farmers below the poverty line

α = FGT ≥ 0 . The ' α ' takes a value of 0, 1, and 2 with different implications:

'P₀' = When $\alpha = 0$; it measures poverty incidence (the index of people that are impoverished
'P₁' (when $\alpha = 1$) measures poverty depth or gap, that is, the proportion of the poverty line that the average poor will require to attain to poverty line. That is, the value obtained will give an indication of the amount of money that would make the poor people to cross the threshold of poverty (Aigbokhan, 1997).

'P₂' (when $\alpha = 2$) measures the severity of poverty, giving more weight to the poorest. The closer the FGT index is to 1, the greater the poverty level. The FGT index had been widely used to determine the level of poverty by various studies (World Bank, 1996; Anyanwu, 1997; Atobatele and Amudipe, 1999).

The Headcount Ratio (HR) measures the percentage of the population below the poverty line. It is given as:

$$HR = \frac{q}{N} \quad (1.1)$$

Where:

HR = Headcount Ratio with value ranging from 0 to 1. The higher and closer the value is to 1, the higher the proportion of people below the poverty line (Aigbokhan, 1997).

q = Number of households below the poverty line

N = Total number of households in the population

RESULTS AND DISCUSSION

Incidence and Severity of Poverty among the participants of Fadama II crop farmers

The incidence and severity of poverty among respondents was measured using Foster-Greer-Thorbecke method with \$1.25 (US Dollar) as acceptable for purchasing power parity as the poverty line used by the World Bank. The distribution as contained in Table 4.24 shows that about 24 percent of the respondents lived below the \$1.25 dollar while about 76 percent are those above the agreed standard accepted in the study.

Table 4.24: Distribution of respondents based on population living below and above poverty lines

Variable	Frequency	Percentage
Respondents living below poverty line	38	23.75
Respondents living above poverty line	122	76.25
Total	160	100

Source: Field survey 2011

Table 4.25: T- test analysis on the Impact of Fadama on Respondents

Variable	Mean(naira)	Mean Difference (naira)	Std. error	T. value
Income before Fadama II	372,788.31		365,115.89	
Income after Fadama II	743,640.60	370,852.29	477,325.36	161.55***
Expenditure before FadamaII	84,765.84		76,111.13	
Expenditure after FadamaII	168,989.80	84,223.96	346,713.23	172.83***

Source: Data Analysis, 2011. *** Significant at 1 percent

Furthermore, the values of FGT obtained from respondents living below poverty line as shown in Table 4.26 revealed that majority (74%) had their values in the range 0.001 to 0.100 with maximum, minimum and mean values of 0.169, 0.029 and 0.077 respectively.

Table 4.26: Distribution of respondents based on values of FGT

FGT value(range)	Freq.	Percentage
0.001 – 0.100	28	73.68
0.101- 0.119	3	7.89
>0.120	7	18.42
Total	38	100
Minimum 0.029		
Maximum 0.169		
Mean 0.077		

Source: Data Analysis 2011

These values are not close to one depicting that income are similar among the respondents falling under this category. This study shows very few of the respondents were poor. The project has made an impact on crop farmers in the study area. This may be due to the fact that the fadama farmers engaged in different production activities resulting to increase in income thereby reducing poverty amongst them. This study is in line with the study of Adewusi and Adeoti (2007) who reported that crop diversification reduce poverty among farmers in South Western Nigeria.

Table 4.22 and 4.23 show the net incomes of Fadama II Project beneficiaries before and after the project implementation. Analysis of net income of Fadama II beneficiaries before and after the project indicates that their average net income rose from ₦187, 559.12 to ₦374, 144.19. This represents a net increase of ₦186,585.09 (99%) which was far above the goal of 20% increase set up for the Fadama II Project to achieve at the end of its life span of six years. Similarly, expenditure before and after the project implementation indicated that 99.36 % was recorded as increased expenditure among respondents. Analysis in Table 4.24 revealed significant impact of the project on income and expenditure at 1% probability level.

This therefore has clearly shown that with this increment which is about 79% above the Fadama II project 20% target, the participating crop farmers had improved their socio-economic status through enhanced quality crop yield that attracted higher output leading to increase income which consequently resulted to reducing their poverty level. So also, with the advisory services received during the Fadama II period, it had help to increase the output as well as income of the beneficiaries. This appraisal is in line with the works of Kwaghe (2008) which reveals that, Fadama II project's combination of income generation, pilot assets acquisition, capacity building, conflict resolution and advisory services into one integrated package has a significant impact on the welfare and human capital of project beneficiaries. He outline that, the project has significantly increased the income and value of productive assets of the beneficiaries by 83% and 97% respectively. In addition, the decrease in value of productive assets of non-beneficiaries within the benefiting communities, even though their net income increased, implies that the non-beneficiaries depended highly on the productive assets of the beneficiaries. Level of awareness

of the crop farmers in terms of the potentials in participating fadama activities; this led to increase in employment generation with specific focus on improved crop production.

Table 4.22: Household income and Expenditure of beneficiaries before Fadama II project.

Range (₦)	Income No	Income percentage	Expenditure No	Expenditure %
≤10,000	2	1.25	37	23.13
10001 – 20,000	15	9.37	39	24.37
20001- 30,000	10	6.25	7	4.37
30001- 40,000	16	10.0	15	9.37
40001- 50,000	13	8.13	13	8.13
>50000	104	65.0	49	30.63
Total	160	100	160	100
Mean	187,559.12		42,647.81	

Source: Field survey, 2011

The reasons for this increase in net income are obvious. The Fadama II Project is all embracing in its intervention programme, addressing almost all aspects of agricultural production problems such as pilot asset acquisition, rural infrastructure, capacity building, advisory services etc. for the various economic interest groups (EIGs) under the project. The acquisition of pilot assets has helped in reducing farm drudgery and labour cost to the lowest minimum among the project beneficiaries. Road construction enhanced the evacuation of produce from rural to urban areas where they commanded higher prices, while irrigation facilities ensured off-season production for the beneficiaries. The acquisition of irrigation facilities made it possible for some of the beneficiaries to embark on vegetable production during the dry season to earn additional income.

Table 4.23: Household income and Expenditure of beneficiaries after Fadama II project.

Range (₦)	Income No	Income percentage	Expenditure No	Expenditure %
≤10,000	0	0	13	8.13
10001 – 20,000	0	0	33	20.63
20001- 30,000	6	3.75	17	10.61
30001- 40,000	4	2.50	13	8.13
40001- 50,000	11	6.88	6	3.75
>50000	139	86.87	78	48.75
Total	160	100	160	100
Mean	374,144.19		85,023.00	

Source: Field survey 2011

Advisory services provided by the project have guaranteed efficiency of resource use and exploration of market opportunities for produce. These problems, hitherto, confronting some of the farmers and impacting negatively on their income. In stressing the importance of advisory services to them, some of the Fadama II Project beneficiaries interviewed expressed their willingness to continue advisory services with providers, even at extra cost on them. Additionally, the harmonious relationship among the members of various FUGs ensured positive

interaction and cross – pollination of ideas. All these had positive impact on the income of the Fadama II project beneficiaries. This result is in accord with the studies of Udoh (2005) who reported a significant impact of farming vegetable in Southern Nigeria.

CONCLUSIONS

The study concludes that, during the implementation of Fadama II project, the income of the beneficiary farmers has increased significantly more than before the project and also more than the non-beneficiaries' income. The gross margin per hectare from these enterprises for sole maize and sole rice indicates profitability in the short run. This can be seen from the net increase of ₦186,585.09 (99%) from the survey which was far above the goal of 20% of Fadama II Project and that recorded during the impact assessment study conducted in the state. However, this study would serve as a basis for the government, policy makers and other donor agencies in future decision making in planning for a poverty reduction programme or policy that would achieve expected result. It would also help other researchers in carrying out future researches in that would add to the knowledge in the field and other related areas. On the basis of this, the study recommends that, government should development a renewed interest in dry season production by strengthening support and public-private partnership so as to boost production and win niche markets with a challenge of making better markets for farmers, while at the same time ensuring that production technologies adopted is more environmentally sustainable, government should as well develop more commitment to the development of infrastructural facilities that would help enhance the development and productivity in these Fadama lands in the state and the country at large..

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