



POVERTY STATUS OF WOMEN *FADAMA* III BENEFICIARIES AND NON-BENEFICIARIES IN BAUCHI STATE, NIGERIA

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ABSTRACT

The study assessed poverty status of women *fadama* III beneficiaries and non-beneficiaries in Bauchi State, Nigeria. Multi stage sampling technique was used to select 270 beneficiaries and 270 non-beneficiaries of *fadama* III project. Data were collected with a pre-tested questionnaire and analyzed using descriptive and inferential statistics. The result shows that the mean age for beneficiaries and non-beneficiaries was 42 years and the year of experience for beneficiaries and non-beneficiaries was 10 years and 11 years, respectively. The average income for groundnut processing was ₦103,800.00 for beneficiaries and ₦53,125.00 for non-beneficiaries. The result further showed that all the 270 respondents (100%) fell under non-poor class using income approach; whereas among the non-beneficiaries all the three (3) categories had some proportion of them that fell into the various categories. The highest proportion of the respondents (52.9%) were in poor class, 40.2% were core poor while only 6.9% fell under the non-poor category. The results further revealed that 100% of the *fadama* III beneficiaries were within the non-poor; under the expenditure approach, about 76% of the beneficiaries were non-poor; 14.4% were poor and 9.6% were core poor. Also, about 19% of non-beneficiaries fell under the non-poor class; 30.4% under the poor category while 50.8% fell under the core poor. The study concluded that *fadama* III project had reduced poverty in the study area. It was recommended that increased funding of agriculture through groups would truly empower farmers to venture into new areas of investments including product processing and packaging to add value.

Keywords: Fadama, Intervention Programmes, Poverty, Rural people, Women farmer.

INTRODUCTION

The goal of every government is to provide services to its people that would enhance the standard of living and social well-being. Many of these services focus on poverty reduction by providing basic human needs to the poor. In recent times, the global focus has been on poverty reduction. In Nigeria for instance, the incidence of poverty is growing by the day as evidenced in the figures released by the National Bureau of Statistics; that about 100 million Nigerians are said to be living below 1 dollar a day (National Bureau of Statistics [NBS], 2014). Empowering rural people is an essential first step to eradicating poverty. According to Onyenechere (2010), about 70% of Africa's poor are rural and Nigeria's population is predominantly rural with rural community dwellers making up to 70% of the population. This is quite revealing more so that right from the early 1960s, when Nigeria attained independence from colonial rule, all efforts at reducing poverty were tailored towards agricultural improvement. *Fadama* III programme was aimed at reducing poverty by improving the living standards of rural poor with emphasis on women participation and increase access to rural



infrastructure. Importantly, the project represented a shift from public sector domination to a Community Driven Development (CDD) approach.

Several governments initiated programmes that were aimed at improving and sustaining agricultural production. Prominent among these includes National Accelerated Food Production Programme (NAFPP) in 1972, Agricultural Development Programme (ADP) in 1975, Operation Feed the Nation (OFN) and River Basin Development Authorities (RBDAs) both in 1976, the Green Revolution (GR) in 1980 and Directorate of Food, Roads and Rural Infrastructure (DFRRI) in 1987 among others. These are in addition to financial institutions such as the Nigerian Agricultural and Credit Bank (NACB) now Bank of Agriculture (BOA) and Agricultural Credit Guarantee Scheme (ACGS) establish in 1973 and 1977, respectively. Worthy of mention also are the numerous research centres spread across the country such as the National Agricultural Research Institutes, and Faculties of Agriculture and Universities of Agriculture. These programmes, institutions and centres according to Jirgi (2002), were collectively and individually aimed at increasing resource use efficiency, income and productivity of farmers. Based on the contribution of various programmes and institutions to the development of agriculture and increased in income of farmers, studies have shown that there exist substantial surface and ground water resources in low-lying lands adjacent to rivers called *Fadama*. “*Fadama*” is a Hausa name for irrigable land-usually low-lying plains underlying by shallow aquifers found along Nigeria’s major river systems. Such lands are especially suitable for irrigated production and fishing, and traditionally provide feed and water for livestock. The enormous potential of this land is only very partially developed (*Fadama net*, 2014).

In Nigeria, women play important roles in all areas of agricultural production. They are involved in food production, processing and marketing and produce food in the country. Women equally provide about 60-80 percent of agricultural labour force and contribute to well-being of their households through their income generating activities (Nwaobiala *et al.*, 2009). Akinnagbe and Adonu (2014) observed that out of 95% of small-scale farmers in Nigeria, 55% of them are women who produce bulk of agricultural produce.

Fadama users comprises of different interest groups (farmers, hunters, fishermen, trader, women, and youth handicapped) which might be too large to handle simultaneously. More so, there is no empirical study conducted in the agricultural zones of Bauchi State specifically on poverty status among women beneficiaries thereby created a gap. It was against this backdrop that external assessment of women beneficiaries, specifically on poverty alleviation due to their participation was embarked on. It was against this background that the research provided answers to the questions of what was the: socio-economic characteristics of women beneficiaries and non-beneficiaries of *fadama* III project; average income for women beneficiaries and non-beneficiaries; and poverty status of women beneficiaries and non-beneficiaries of *Fadama* III project? The specific objectives of the research were to:

- i. evaluate the factor affecting the women beneficiaries and non-beneficiaries of *fadama* III project;
- ii. identify the frequency of extension contact of women beneficiaries and non-beneficiaries; and
- iii. evaluate the poverty status of women beneficiaries and non-beneficiaries of *Fadama* III project.

MATERIALS AND METHODS

The Study Area

The study area is Bauchi State, it is located in the north eastern region of the Federal Republic of Nigeria and occupies a total land area of 49,119 km² and has an estimated population figure of 6,997,198 (NBS, 2018). The State is characterized by two (2) distinct vegetation zones which include Northern Guinea Savannah and Sudan Savannah. Bauchi State



experience both wet and dry season with temperatures ranging between 9.11 °C – 40.55 and an average rainfall ranging 700 mm - 1300 mm per annum. Agriculture is the major economic activities, crops cultivated include, maize, rice, sesame, groundnuts, millet, sugarcane etc. Irrigation farming is also practiced mostly around the *fadama* areas. Cattle, poultry and other livestock farming are practiced within the State (Crop Production Programme [CPP] (2011).

The sampling technique was multi-stage, which consisted of stratified and simple random sampling techniques. The first stage involved stratification of Bauchi State into the three (3) agricultural zones (Western, Northern and Central zones). Second stage entailed further stratification of respondents into women beneficiaries and non-beneficiaries of *fadama* III project. In the final stage, simple random sampling technique was applied to select women beneficiaries and non-beneficiaries. The samples were determined using the Yamane sample size determination formula (Equation 1) and representative sample was drawn at 10% precision level and 90% confidence level from the sample size.

$$n = \frac{N}{1+N(e^2)} \quad \dots(1)$$

where;

n = Sample size,

N = Population size and

E = level of precision

Based on the equation 1, a total of 540 (Table 1) respondents were selected for the study among which 270 each were women beneficiaries and women non-beneficiaries of *Fadama* III project. There was no sample frame of the non-beneficiaries because the researcher applied accidental sampling in this situation.

Table 1: Sampling Frame and Size Selection Plan of the Study

Agricultural Zone	LGAs	FCAs in the LGAs	Sample Frame Beneficiaries	Sample Size (10%)	
				Beneficiaries	Non-beneficiaries
Northern	Misau	5	470	47	47
	Shira	4	400	40	40
Western	Bauchi	6	641	64	64
	Dass	4	360	36	36
Central	Warji	4	331	33	33
	Darazo	5	501	50	50
Total		28	2,703	270	270

Source: Field Survey, 2018

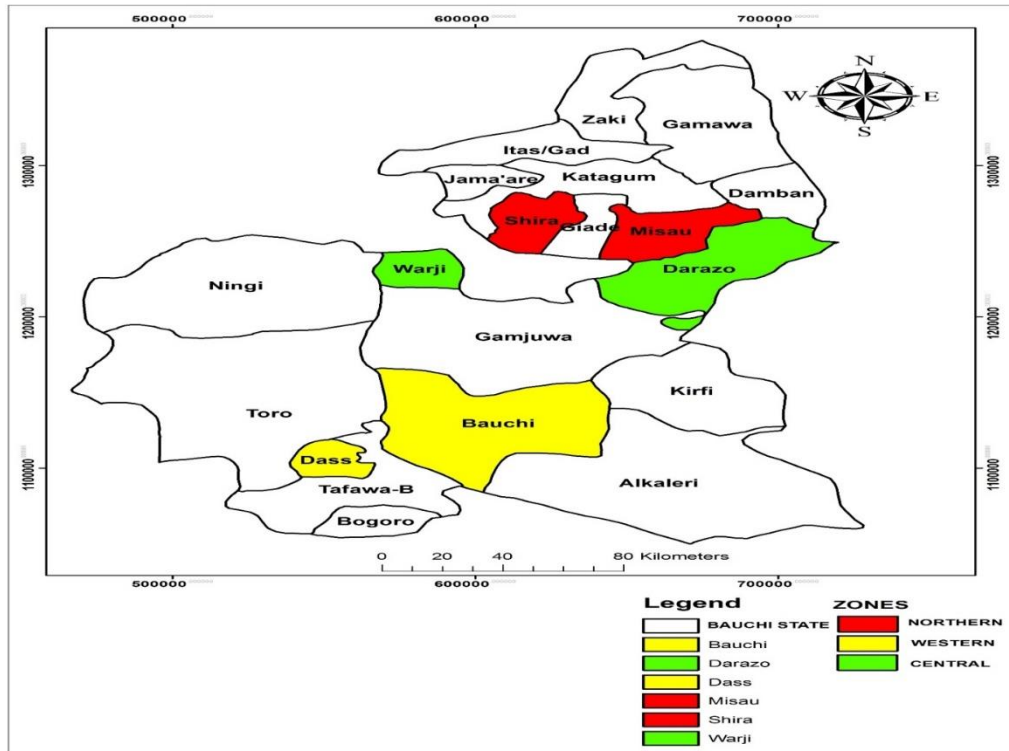


Figure 1: Map of Bauchi State showing the study area

In measuring the poverty status of the respondents; the respondents' per capita expenditure was used in classifying non poor, poor and core poor as follows:

- i. The non-poor farmers whose per capita expenditure was above two-third of the poverty line i.e. $NP > 2/3$ of the mean expenditure.
- ii. The poor were farmers whose expenditure was below the poverty line i.e. $P < 2/3$ of the mean expenditure.
- iii. The core poor were farmers whose expenditure was below one-third of the mean expenditure of poverty line i.e. $P < 1/3$ of the mean expenditure.

The poverty lines were set at $2/3$ and $1/3$ of the mean expenditure (World Bank, 2000).

The FGT measures, which is an approach to absolute poverty is expressed as

$$P_{\alpha} = \frac{1}{n} \sum_{t=1}^q \frac{[Z - Y_t]^{\alpha}}{Z} \quad \dots(2)$$

where;

n = Total number of farmers in each group.

q = the total number of farmers below the poverty line.

Z = poverty line (mean expenditure of farmers).

Y = the per capita expenditure of household in the individual group (the sum was taken only on those individuals who were poor).

Z - Y = gap between poverty line and the income for each poor individual (representing the depth of poverty, is the mean distant separating the population from the poverty line with non-poor given a distance at zero). α ; the degree of concern for the depth of poverty; it takes on the



value of 0, 1 and 2 for poverty incidence, poverty gap and severity, respectively. Therefore, when $\alpha = 0$,

$$P_0 = \frac{1}{n} \sum_{t=1}^q \frac{[z - Y_t]^0}{Z} \quad \dots(3)$$

when $\alpha = 1$

$$P_1 = \frac{1}{n} \sum_{t=1}^q \frac{[z - Y_t]^1}{Z} \quad \dots(4)$$

when $\alpha = 2$

$$P_2 = \frac{1}{n} \sum_{t=1}^q \frac{[z - Y_t]^2}{Z} \quad \dots(5)$$

RESULTS AND DISCURSSION

Socio-economic Characteristics of the Respondents

Age is an important factor that affects agricultural activities of individuals. Table 2 shows that 88.9% of the beneficiaries fell within the age bracket of 30-50 years while 74.1% of non-beneficiaries fell within the age bracket of 30 - 50 years. There was no difference observed between the mean age of beneficiaries (42 years) and that of non-beneficiaries. This therefore shows that majority of the two groups were within their economically productive age (30 - 50 years). This is in line with the findings of Onuebuwa and Adesope (2006) and Onyemauwa *et al.* (2007) that women in their early 1930s and early 1950s take active part in food production. This finding also affirms the claim of Ike (2012) who stated that farmers' within the average 30 years and 50 years were still within a productive and active working age range, hence their ability to participate or produce to earn some revenue in the *Fadama III* project in the study area.

The result of marital status of the beneficiaries showed that married women occupied 59.2%, single accounted for 22.2% and divorcees/widow covered 18.5%. The result for the non-beneficiaries revealed that divorcees/widow accounted for 22.2%, married were 62.9%, and single occupied 14.8% of the respondents.

The distribution of respondents according to years of experience showed that beneficiaries have a mean of 10 years of experience while non-beneficiaries have a mean of 11 years of farming experience. This finding implied that non-beneficiaries were more experience as such could manage risk better than the beneficiaries. The longer experience by non-beneficiary may also imply better production efficiency. However, due to input supply and close supervision and monitoring by *fadama* officials, the influence of years of experience did not manifest in beneficiary's productivity.

The results of household size of the respondents showed that, household with 1-10 persons constitute the majority (66.7%) for the beneficiaries while non-beneficiaries categories (66.7%) accounted for 11-20 persons. The next range is 21-30 persons and has 3.6% of beneficiaries and 7.4% of non-beneficiaries. This result is in agreement with that of Yakubu and Abbass (2012) and Osondu *et al.* (2015). This large household size of both groups suggested the polygamous nature of families in the study area. The result also implied the availability of family labour between the groups.



Table 2: Socio-economic Characteristics of the Respondents

Variable	Fadama III Beneficiaries		Non-Fadama III Beneficiaries	
	Frequency	Percentage	Frequency	Percentage
Age:				
21-30	90	33.3	50	18.5
31-40	80	29.7	80	29.7
41-50	70	25.9	70	25.9
51-6	30	11.1	70	25.9
Mean	42		42	
Marital status:				
Married	160	59.2	170	62.9
Single	60	22.2	40	14.8
Divorce/widow	50	18.5	60	22.2
Household size:				
1-10	180	66.7	70	25.9
11-20	80	29.7	180	66.7
21-30	10	3.6	20	7.4
Mean	10		10	
Experience:				
1-5	75	27.8	120	44.4
6-10	140	51.8	90	33.3
11-15	50	18.5	50	18.6
16-20	05	1.8	10	3.6
Mean	10		11	
Farm size:				
0.1-1.0	81	30.0	84	31.1
1.1-2.0	105	38.8	80	29.7
2.1-3.0	84	31.2	106	39.2
Mean	1.04		0.87	
Level of education:				
Qur'anic education	101	37.4	120	44.4
Primary education	59	21.8	80	29.7
Secondary education	80	29.7	50	18.6
Tertiary education	30	11.1	20	7.4

Source: Field Survey, 2018

Table 2 further shows that 37.4% of the beneficiaries had Quranic education, 21.8% and 29.7% had primary education and secondary education, respectively. The result further revealed that out of the non-beneficiaries category 44.4% had Quranic education, 29.7% and 18.6% had primary and secondary school education respectively. This result is in line with the findings of Oladunni (2014) who maintained that education is an essential element in all human endeavors. The educational level of a farmer helps him or her in making rational decision regarding efficient production method, sales of farm produce, inputs utilization, enterprise selection and even access to *fadama* project grant or fund.

The result of Table 2 also shows that the mean farm sizes of beneficiaries and non-beneficiaries were 1.04ha and 0.87ha respectively. This implies that most of the beneficiaries and non-beneficiaries in the study area were smallholder farmers who either inherited or



accessed marginal parcels of land. This is in agreement with Kainga (2013) which stated that farmers in Nigeria are mostly smallholders with average farm size of between 1 and 2 hectares.

Agro-processing Enterprises Engaged by *Fadama* III Beneficiaries and Non-beneficiaries

The study identified three (3) major agro-processing enterprises engaged by the respondents. The result of Table 3 showed that 44.4% of the beneficiaries engaged in groundnut processing, maize/corn/rice processing (40.7%) and vegetable processing (14.8%). It is also interesting to note that groundnut processing has the highest number of beneficiaries involved. The awareness on the need for agro processing is now increasing because of the need for value addition. Generally, there was increased in the proportion of farmers involved in planting and agro processing of different crops, therefore the scope of farming activities had increased. This could be attributed to the various supports (grant, capacity building) provided by the programme.

Table 3: Agro –processing Enterprises Engaged by the Respondents

Types of Enterprise	Beneficiaries		Non Beneficiaries	
	Frequency	Percentage	Frequency	Percentage
Maize/Corn/Rice processing	110	40.7	160	59.2
Groundnut processing	120	44.4	90	33.3
vegetable processing	40	14.8	20	7.4
Total	270	100	270	100

Source: Field survey, 2018

Income Levels of *Fadama* III Beneficiaries and Non-beneficiaries

The findings contained in Table 4 indicated that the average per capita income for beneficiaries on groundnut processing was ₦103,800.00 and for non-beneficiaries was ₦53,125.00; the average income for vegetable processing was ₦101, 505.00 and ₦23,135.00 for beneficiaries and non-beneficiaries, respectively. The average income on poultry for the beneficiaries was ₦63,840.00 and ₦61,020.00 for the non-beneficiaries. Similarly, the average income for sheep and goat production for beneficiaries was ₦142,000.00 and for the non-beneficiaries, it was ₦123,333.33. Looking at the average income level for the different enterprises between *fadama* III beneficiaries and non-beneficiaries, all the average income from beneficiaries was a bit higher than that of non-beneficiaries. This is in line with findings of Yunana *et al.* (2013) which established that *Fadama* III project had a positive impact on income of its beneficiaries in Federal Capital Territory of Nigeria and also Ike (2014) who also found a positive impact on the income of *Fadama* III beneficiaries in Delta State, Nigeria. Income of the *fadama* III beneficiaries is higher than that of the non-beneficiaries because *fadama* III beneficiaries were taught how to keep proper records of all activities involved



Table 4: Average Income for Beneficiaries and Non-beneficiaries in the Study Area

Beneficiaries	Non-Beneficiaries	Enterprises
Average Income (₦)	Average Income (₦)	Average Income (₦)
Agro-processing:		
Maize/corn/rice processing	66,437.50	100,454.55
Groundnut processing	103,800.00	53,125.00
Vegetable processing	101,505.00	23,135.00
Livestock Enterprise:		
Sheep and goat	142,000.00	123,333.33
Poultry	63,840.00	61,020.00
Cattle	49,111.11	41,107.14

Source: Field Survey, 2018

Income Poverty Classification

Table 5 results showed that 270 (100%) of the respondents fell under non-poor class using income approach, whereas among the non-beneficiaries all the three (3) categories had some proportion of them that fell into the various categories. The highest proportion of them (52.9%) were in poor class, 40.2% were core poor and only 6.9% fell under the non-poor category. This result revealed that 100% of the *fadama* III beneficiaries are within the non-poor. This implies that their poverty status has been improved. Level of poverty influenced farming household to participate in *fadama* III project as a means of poverty alleviation strategy. However, a farmer will not participate actively if there is no improvement in their poverty status after participation at certain level in the project. This finding is in line with the findings of Moses (2017) who reported that 52.22% of non-beneficiaries of *fadama* III crop farmers in Yobe State were poor.

Table 5: Distribution of respondents according to Income Poverty Classification

Income/Poverty Status	Beneficiaries		Non-beneficiaries	
	Frequency	Percentage	Frequency	Percentage
Non-poor	270	100	40	6.9
Poor			140	52.9
Core-poor			90	40.2
Total			270	100

Source: Field survey, 2018

Expenditure Poverty Classification

Distribution of respondents' based on expenditure poverty approach was equally estimated and the respondents were categorized (Table 6). Using expenditure poverty approach about 75.9% of the beneficiaries was non-poor, 14.4% are poor and 9.6% are core poor. On the other side, about 19% of non-beneficiaries fall under the non-poor class, 30.4% under the poor category while 50.8% fall under the core poor. This marked difference in the result between income approach and expenditure approach is associated with the nature of how human beings respond to income information. Some people tend to overestimate their income so that the researcher or the enumerators might not look at them as poor. The result of this study is in agreement with the result of Moses (2017) in his study on the impact of *fadama* III on the poverty status of food crop farmers in Yobe State, Nigeria, who reported that the majority of the non-beneficiaries fell within the non-poor class. The incidence of poverty, otherwise called



head count ratio was 0.517 for *fadama* III crop farmers in Yobe State and 0.685 for non-*fadama* III crop farmers. This implies that 51.7 % of the *fadama* III crop farmers and 68.5% of non-*fadama* III crop farmers were poor because their incomes fell short of the mean household expenditure poverty line.

Table 6: Distribution of Respondents according to Expenditure Poverty

Expenditure/Poverty Status	Beneficiaries		Non-beneficiaries	
	Frequency	Percentage	Frequency	Percentage
Non-poor	205	75.9	51	18.9
Poor	39	14.4	82	30.4
Core-poor	26	9.6	137	50.8
Total	270	100	270	100

Source: Field survey, 2018

CONCLUSION AND RECOMMENDATIONS

Compared to non-beneficiaries, the project had reduced poverty and significantly raised the value of productive assets of the beneficiaries using the income poverty classification. All the beneficiaries (100%) fell under non poor class using income approach; whereas among the non-beneficiaries all the 3 classes had some proportion of them that fall into the classes. The highest (52.9%) proportion of them were in poor class, 35% core poor, 4.9% were in extreme poor and 6.9% were in non-poor class. Using expenditure approach about 67% of the beneficiaries were non poor while 18.9% of the non-beneficiaries fell within the non-poor categories. This marked difference in the result between income approach and expenditure approach is associated with the nature of how human beings respond to income information. The study therefore, recommended as follows:

1. The basis of the poverty indices of the beneficiaries, the scope of subsequent phases and disbursement should be enlarged to accommodate more willing farmers and ensuring that non-beneficiaries are incorporated.
2. If the government wants to attain success on any poverty alleviation programmes, they must remove any forms of hindrances that limit farmer’s participation so that the non-beneficiaries will have the opportunity to participate. More especially by providing adequate fund, timely disbursement of farm inputs as well as providing quality extension service delivery for the farmers.

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