

Analysis of Households income Generation in Fadama III Beneficiary Communities in Adamawa State, Nigeria

*M. R. Ja'afar-Furo; U. A. Madu and K. Bello

*Department of Agricultural Economics and Extension,
Faculty of Agriculture,
Adamawa State University, PMB 25, Mubi, Nigeria*

*Corresponding Author: muhammadfuro@gmail.com (+2348069319904)

Abstract : Poverty reduction and creation of employment opportunities in both rural and urban communities are two slogans governments in developing economies are very much associated with. And as majority of the population in such nations heavily rely on agriculture for their livelihoods, a larger proportion of the programmes designed to address these inadequacies in human development are basically tailored toward improving agricultural production. This survey assessed the households income generation in Fadama III benefiting communities in Adamawa State, Nigeria, taking into account of particularly the success of the programme. Twenty Local Government Areas (LGAs) benefiting from the programme were purposely selected for the study. A total of 12 households were randomly selected from each LGA thereby making a number of 240 participants in which 232 households known as Fadama User Groups (FUGs) responded positively to the end, and therefore, served as respondents in the category of Crop Producers, Livestock Producers and Off-farm Activities. Descriptive statistics and Net Return (NR) on investment were used to analyse data. Results indicated that NR to investment of ₦16,842; ₦11,383 and ₦3,300 were reported for off-farm activities, crop production and livestock production, respectively. While about 44.40% of the beneficiaries saved less than ₦10,000, 46.67% of the off-farm activities showed complete satisfaction of operation of productive assets of enterprises. Major constraints experienced include limited markets for products and untimely disbursement of funds to beneficiaries, among others. In conclusion, enterprises were operating within a minimal margin of profit, indicating a meagre increase in income generation. Therefore, improving the income of beneficiaries would demand for addressing these inadequacies by the government, non-governmental organisations and donor agencies, and also strengthen the aspect of supervision on participants for the project to attain its development objectives.

Keywords: Activities; beneficiaries; crops; Fadama; livestock; Nigeria.

I. Introduction

Eradication of extreme poverty among developing economies by the year 2015 was one of the prime objectives of the Millennium Development Goals (MDGs), and by the year 2030, a possible eradication of same in the world. But as it is at present, the 2015 has been attained by more than eleven months now, and the very much envisaged goal seems to be a huge mirage. In fact, Shepherd *et al.* (2015) in a very articulated document for Chronic Poverty Report 2014-2015 stated that the most pessimistic projection is that up to a billion people could still be extremely poor in fifteen years period (2030). This is further buttressed by the fact that, claimed the report; those who manage to escape from the clutches of poverty usually fall far beneath it again, as a result of combination of factors like insecurity situations, drought, and conflicts, among others. The magnitude of the incidence, noted the authors, attained staggering figures of 30, 40 and 60% for rural Kenya, South Africa and Ethiopia, respectively, in surveys undertaken in varied periods.

The above scenario, to say the least, is alarming. Several factors have been associated with these gloomy situations depending on the nation, the political will of the managers of the economy and the policies put in place. What could have been the specific prime excuses? While scholars like Shepherd and Scott (2011) strongly argued that persistent chronic poverty is as a result of four factors which include people's social norms and institutions, adverse inclusion in economies and politics, intersecting inequalities, and obstacles faced in achieving a pro-poor political settlement; and endorsed that policies that are geared towards addressing these poverty issues must tackle these factors, Oladele *et al.* (2004) and Ozor *et al.* (2007) earlier narrowed it to just political and policy changes. However, in the view of Anonymous (2013), one single major cause of poverty in Nigeria has been corruption, which culminates in massive systematic waste of the country's resources thereby thwarting the growth of the economy for the betterment of the entire citizenry.

Be that as it may, the fact still remains that slightly over one billion people would be chronically hungry by the year 2030, noted shepherd *et al.* (2015), and that a larger chunk of this population would be in sub-Saharan Africa, in which Nigeria is located. Therefore, leaders of these nations involved have to make do

with pragmatic remedies that will aid in curbing the impending menace before its occurrence. In line with this, the World Bank (2008) reported that improvement in the agriculture sector still remains the largest contributor to poverty reduction than any economic sector. This finding is further consolidated by Girei and Dire (2013) and Osondu *et al.* (2015), when authors noted that agriculture accounts for about 57.0% of source of employment and contributes about 42.0% to the total Gross Domestic Product (GDP) of Nigeria. Thus, any attempt towards poverty alleviation among its teeming populace, must accommodate policies that would address the inadequacies in agriculture and rural development.

Going by the aforesaid, and realising the potentials in the flood and wet lands (Fadama) for dry season irrigated agricultural production (Sulaiman and Ja'afar-Furo, 2010) by the Federal Government of Nigeria, the latter in collaboration with the World Bank introduced National Fadama Development Projects (NFDP) I and II, in 1993 and 2004, respectively. While NFDP I was put in place to assist in realising the agricultural potentials of the rural areas by building on the huge successes of the Agricultural Development Programmes (ADPs) through the provision and strengthening of the use of pump and washbore-based irrigated farming (Akinyele *et al.* 2005; World Bank, 2008), the NFDP II was instituted to basically enhance the welfare and income of rural population mainly through the promotion of Capacity Building, Rural Infrastructure Investment, Pilot Productive Asset Acquisition Support, and Demand-Responsive Advisory Service (Akinyele *et al.* 2005; Umar *et al.* 2012; Girei and Dire, 2013), among others.

The NFDP III came into being for the purpose of addressing the weaknesses observed in the two (NFDPs I & II) projects that served as impediments to realising the objectives, through increasing the incomes of users of rural land and water on sustainable basis as the major thrust (Ike, 2012; Umar, 2013; Sani and Haruna, 2014). Determining the success or otherwise of this Programme is hinged on its appropriate evaluation. It is against this backdrop that this survey was undertaken in the identified communities taking account of the income generation of the participating households, their saving rate, returns on enterprise and perception on assets utilisation in the area.

II. Methodology

The study area: The study was conducted in Adamawa State, Nigeria, a beneficiary of this Programme. It has 21 Local Government Areas (LGAs). As the survey was aimed at assessing the position of benefiting LGAs with regards to income generation, the Fadama III beneficiary LGAs formed the study area. These include Demsa, Fufore, Ganye, Girei, Gombi, Guyuk, Hong and Jada. Others are Madagali, Maiha, Michika, Mubi-North, Mubi-South, Toungo and Shelleng. The remaining participating LGAs include Lamurde, Mayo-belwa, Song, Yola-North and Yola-South. In all, a total of 20 LGAs were involved.

According to Adebayo (1999), the State is located between latitude 7° and 11° of the Equator and longitude 11° and 14° of the Greenwich Meridian. It has a population of figure of 3.7 million based on the NPC census of 2006 (NPC, 2006). Majority of the people in the State are engaged in farming and raising of livestock. However, some sideline economic activities like beekeeping, hunting, and petty trading are also practiced.

Sampling procedure and data collection: The essence of the survey was to gather appropriate information towards assessing the position of income of households among the Fadama III benefiting communities in the State. Since the households (associations) formed the Fadama User Groups (FUGs) and the latter formed the Fadama Community Associations (FCAs), the selection of sample size was centered on the households. Six FCAs were randomly selected from each LGA, and two households were then selected from each FCA, thereby making it 12 households (i.e. 6 x 2) from each LGA, and 240 from the total benefiting LGAs in the State (i.e. 12 x 20). Of the 240 responding farm families, 232 participated to the finish, and therefore, were the ones involved in the study. Two sets of questionnaires were served the respondents to elicit for information on their enterprises before and after joining Fadama III for comparison. Group discussions were also organised where necessary to gather data on assets, sales, revenues and other receipts from record books.

Method of data analysis: The data were analysed using mainly descriptive statistics which include the use of arithmetic mean, percentage and frequency distribution. The perception of FUGs on the level of satisfaction on utilisation of productive assets of same were captured using likert scale on five stages as Completely Not Satisfied, Partially not Satisfied, Undecided, Partially Satisfied and Completely Satisfied, ranking in ascending order. In order to realise the income and Net Return of the three categories of participating households in the area namely, Crop Producers, Livestock Producers and Off-Farm Activities, analysis of Net Return (NR) to investment was made. Thus:

$$NR = \sum PiVi - (FC + VC)$$

Where:

NR = Net Return in naira

Pi = Price of produce/livestock/product in naira

V_i = Quantity/number sold in naira

FC = Fixed Costs in naira

VC = Variable Costs in naira

The above was applied to respondents' enterprises before and after joining Fadama III Programme for the sake of comparison. Also, accounts of beneficiaries were assessed to document their level of saving.

III. Results And Discussion

This section of the paper categorized beneficiaries' activities into three enterprises namely Crop Production, Livestock Production and Off-Farm Activities, and captured the average income of each group, the return to investment, saving rate and perception of level of satisfaction of participants with regard to operation, maintenance and utilisation of existing productive assets.

Table 1: Distribution of Income of Participating Households by Enterprises in the Study Area

Enterprise	BEFORE JOINING FADAMA III		AFTER JOINING FADAMA III		Difference in income (₦)
	Average income (₦)	Number of households	Average income (₦)	Number of households	
1. Crop Production	53,477	91(39.22)	69,406	91(39.22)	15,929(41.32)
2. Livestock Production	20,802	57(24.57)	23,493	57(24.57)	2,691(06.98)
3. Off-Farm Activities	42,655	84(36.21)	62,587	84(36.21)	19,932(51.70)
Total	116,934	232(100.00)	155,486	232(100.00)	38,552(100.00)

Note: Values in parentheses are percentage of total

US\$1.00 = ₦160 (At the time of study)

Source: Computed from field data (2011).

The findings in Table 1 indicate the distribution of participating households' income by enterprises in the area of study. Of the three enterprises under consideration, crop production accounted for a larger proportion (39.22%), followed by off-farm activities with 36.21% and livestock production had 24.57% in terms of group participation. However, in the aspect of income generation, beneficiaries that did partake in off-farm activities had higher margin with about 51.70% of the generated income differentials. Crop producers and livestock producers recorded 41.32% and 6.98%, respectively.

It could be observed from the results in Table 1 that beneficiaries engaging in off-farm activities generated larger chunk of the total income. Further investigation revealed that activities like agro-processing such as maize threshing, rice and groundnuts milling, and fabrication of farm implements through black smithing, which participants engaged in were yielding higher income compared to livestock and crop production that were seasonal. However, crop production gave more income than livestock production because the former was said to have been conducted both in the rainy and dry seasons of the year.

Table 2: Net Return on Total Assets of the Three Enterprises among the Beneficiary Communities in the Area.

Enterprise	P_i (₦)	V_i	FC (₦)	VC (₦)	NR (₦)
1. Crop Production	5000	2457.66kgs	43,600	67,900	11,383
2. Livestock Production	20,000	4nos	23,000	53,700	3,300
3. Off-Farm Activities	105,242	-	50,400	38,000	16,842
Total	272,420	-	117,000	159,600	31,525

sNote: US\$1.00 = ₦160 (At the time of study).

Source: Computed from field data (2011).

Table 2 shows information on the NR of the three categories of enterprises among the communities studied. The composition of produce among the crop producers includes maize, rice, sorghum and cowpea. Prices of 100kg bag of the various crops were determined at prevailing market price, and a mean of ₦5000 gotten. However, in the aspect of livestock producers, a mixture of large ruminants (cattle) and small ruminants (sheep and goats) were raised. Also, the prevailing market prices of livestock were captured and a mean value determined per household, giving a sum of ₦20,000 only. But for those that engaged in off-farm activities, items that formed sources of receipts include proceeds from fabrication of local farm implements, designer dresses, grinding/milling/threshing of rice, maize, cowpea and related crops, and other petty trading. Items of fixed costs were mainly depreciation from equipment like welding machines, water pumps, milling and grinding machines,

sewing machines and generators, designing machines, motorcycles, pick-up vans and tricycle vehicles, among others. Straight line depreciation was worked out for these working tools. The variable costs for these three enterprises constituted moneys spent for general management, like costs of seeds, fertilisers, herbicides, insecticides, labour, and transportation etc. for crop production, purchase of livestock feeds, drugs, transportation of stock, labour etc. for livestock production, and maintenance of vehicles, machines and equipment and labour for off-farm activities.

The results in Table 2 show that the net return to investment for the off-farm activities accounted for the highest (₦16,832), and the crop producers had ₦11,383 as the second in terms of value. Livestock producers recorded the least value with ₦3,300. Although it could be observed that all the three enterprises were profitable among the household beneficiaries, participants in the off-farm enterprises recorded more return to investment. Similar findings were reported by Ogunbiyi *et al.* (2011) and Ellahil and Mahboob (2013) in Nigeria and Pakistan, respectively. While in the latter study, the authors reported Total Productivity Factor (TPF) percentage changes per annum for crop production of 0.94, 0.92 and 5.48 for Punjab, Sindh and Baluchistan Provinces, respectively, that of livestock production accounted for 0.86, 0.64 and 0.82, respectively, for the same provinces. In the former survey, researchers affirmed that farmers growing food crops recorded the least poverty incidence, depth and severity than livestock and mixed farmers in Osun State, Nigeria.

Going by the above result, it could be stated that food crop production would be a better form of farming that could enhance the income of rural populace in a short-run. However, livestock production could be employed as a long-run measure because of some factors as gestation periods and seasonality, among others. Government and development agencies should therefore, focus more attention based on the type of remedy intended.

Table 3: Savings Rate of the Beneficiaries among the Communities in the Study Area

Saving Rate (₦)	Number of Households	Percentage (%)
• Less than 10,000	103	44.40
• 10,000 – 49,000	75	32.33
• 50,000 – 99,000	25	10.77
• 100,000 and above	29	12.50
Total	232	100.00

Note: US\$1 = ₦160 (At the time of study).

Source: Computed from field data (2011).

In order to determine the saving rates of the beneficiaries among the communities, four saving categories were formed. The first category composed of households that saved less than ₦10,000 in their bank accounts at the period of survey, the second category had between ₦10,000 and ₦49,000 only, the third group possessed between ₦50,000 and ₦99,000 in their bank account, and the fourth category were the households that had up to ₦100,000 and above as savings in their banks. These are shown in Table 3. The results in Table 3 show that 44.40% of the beneficiaries had less than ₦10,000 as savings in their various banks. While about 32.33% of the households fell within the second category, 10.77% within the third category, those that saved ₦100,000 and above accounted for 12.50%.

The implication of the above finding is that there was a weak saving culture among the beneficiaries. This is apparent from the fact that a larger proportion of the participants could only save less than ten thousand naira only at the period of the study. However, an appreciable percentage (23.27%) have had ₦50,000 and above as savings, implying that the households were on the right course towards establishment of a sustained saving culture.

The perception on level of satisfaction of the households with regard to operation, maintenance and utilisation of existing productive assets of enterprises is documented in Table 4. The perceived levels are classified into five from the lowest to the highest. Thus, completely not satisfied, partially not satisfied, undecided, partially satisfied and completely satisfied. Results in Table 4 could be assessed from two extremes namely, completely not satisfied and completely satisfied. It could be observed from the findings, that the larger proportion (46.67%) in the category of the off-farm enterprises expressed complete satisfaction with the operation, maintenance and utilisation of their productive assets, whereas only 12.00% were not completely satisfied. Similarly, about 33.33% owners of enterprises in the livestock category were completely satisfied against 28.89% that were completely not satisfied. Beneficiaries that showed complete satisfaction in the category of crop producers were 32.87% with only 16.42% indicating those that were completely not satisfied.

Table 4: Percentage Perception of Level of Satisfaction of Beneficiaries with Operation, Maintenance and Utilisation of Existing Productive Assets

Perception	Crop Production (n: 67)	Livestock Production (n: 90)	Off-Farm Activities (n: 75)
Completely not satisfied	16.42	28.89	12.00
Partially not satisfied	7.46	5.56	4.00
Undecided/I don't know	16.42	4.44	17.33
Partially satisfied	26.87	27.78	20.00
Completely satisfied	32.84	33.33	46.67

Note: Values are percentage of total in a category

Source: Computed from field data (2011).

It could be deduced from the above results that productive assets within the enterprises were being managed properly, as more than 50.00% of members of households for all the enterprises had indicated positive levels of satisfaction. This trend could be attributed to the intense advisory services received from the main organisation.

Table 5: Major Constraints Associated with Operation of Enterprises of Beneficiaries (n: 232)

Item	Number of Beneficiaries	Percentage (%)
1. Leadership dispute	47	20.26
2. untimely disbursement of funds	135	58.19
3. Poor financial record keeping	75	32.33
4. inadequate capacity for maintenance of machines	120	51.72
5. Limited markets for products	150	64.66
6. financial mismanagement	105	45.26

Note: Multiple responses were recorded.

Source: Computed from field data (2011).

Opinions of beneficiaries were sought on major issues that thwart the smooth operations of the enterprises for a better return to investment. These are shown in Table 5. Respondents reported limited markets for products as their most (64.66%) immediate problems that required urgent attention. Farm produce were said to have had significant prices variations in the communities with higher prices at the commencement and mid-point of rainy season. Sales were usually targeted at those stated periods unless otherwise in high need of cash. Similarly, livestock and other off-farm services have been in low demand due to the economic downturn experienced in the country. Another serious constraint reported was the untimely disbursement of the funds to the beneficiaries. The latter led to improper implementation of the projects by beneficiaries at the beginning of the programme. This view accounted for 58.19% of the respondents. About 51.72% of the beneficiaries hinged the slow pace of progress of the enterprises operations to the inadequacy in capacity for maintenance of machines. While a total of 45.26% of the respondents associated the issue of financial mismanagement as a clog in the wheel of progress of enterprises development, 32.33% linked it to the aspect of poor record keeping indicating the tendency of corrupt practices among officials of the associations. Although least reported, leadership dispute among group members recorded 20.26%.

IV. Conclusion And Policy Implication

It could be concluded from the findings of this study that the enterprises were operating with a low margin of profit and therefore, slightly contributed to the income generation among beneficiaries. However, households that engaged in off-farm enterprises experienced higher income than crop and livestock producers, in spite of the numerous problems listed. In line with this, improving the income of beneficiaries through the three enterprises in the communities would, among other things, demand working out a strategic plan that could address the issues raised. In this regards, the government, non-governmental organisations and meaningful donor agencies should act in this direction.

References

- [1]. Shepherd, A.; Scott, L.; Mariotti, C.; Kessy, F.; Gaiha, R.; Da-Corta, L.; Hanifnia, K.; Kaicker, N.; Lenhardt, A.; Lwanga-Ntale, C.; Sen, B.; Sajipati, B.; Strawson, T.; Thapa, G.; Underhill, H. and Wild, L. (2015). The Chronic Poverty Report 2014-2015: The road to zero extreme poverty. Chronic Poverty Advisory Network. Pp 176
- [2]. Shepherd, A. and Scott, L. (2011). Tackling Chronic Poverty: The policy implications of research on chronic poverty dynamics. Manchester Chronic Research Centre
- [3]. Oladele, O.; Koyoma, O. and Sakagama, J. (2004). Africa in Search of Extension System: Experience from Nigeria. *Food, Agriculture and Environment*.2(1):276-280
- [4]. Ozor, N.; Agwu, A.; Chukwuone, N.; Madukwe, M. and Garfoth, C. (2007). Cost-sharing of Agricultural Technology Transfer in Nigeria: Perception of Farmers and Extension Professionals. *Journal of Agricultural Education and Extension*.13(1): 23-37
- [5]. Anonymous (2013). Poverty in Nigeria: Rich Country, Poor People. <http://www.poverties.org/poverty-in-nigeria.html>.accessed 20/07/2015
- [6]. Girei, A. A. and Dire, B. (2013). Impact of National Fadama II Project on the Socio-economic Characteristics of Crop Farmers in Adamawa State, Nigeria. *International Journal of Innovative Agriculture and Biology Research*. 1(2): 31-38
- [7]. Osundu, C. K.; Ijioma, J. C.; Udah, S. C. and Emerole, C. O. (2015). Impact of National Fadama III Development Project in Alleviating Poverty of Food Crop Farmers in Abia State, Nigeria. *American Journal of Business, Economics and Management*.3(4): 225-233
- [8]. Sulaiman, A. and Ja'afar-Fro, M. R. (2010). Economic Effects of Farmer-Grazier Conflicts in Nigeria: A Case Study of Bauchi State. *Trends in Agricultural Economics*.3(3): 147-157
- [9]. Akinleye, S. O.; Awoniyi, S. M. and E. O. Fapojuwo (2005). Evaluation of the National Fadama Development Project Approach to Rural Development: Lessons for Local Government Councils in Nigeria. Paper Presented at the Farm Management Association of Nigeria Conference, Asaba, Nigeria. October 18th-20th
- [10]. World Bank (2008). World Development Report. Washington D. C., World Bank.
- [11]. Umar, A. M.; Phoa, C. L. J. and Khalique, M. (2012). An Investigation on the Impact of Fadama II Project on the Adoption and Demand for Advisory Services in Adamawa State, Nigeria. *International Journal of Academic Research in Business and Social Sciences*.2(1): 62-71
- [12]. Ike, P. C. (2012). An Analysis of the Impact of Fadama III Project on Poverty Alleviation in Delta State, Nigeria. *Asian Journal of Agricultural Sciences*. 4(2): 158-164
- [13]. Umar, A. M. (2013). Assessment of the Adoption Rate of Technologies among Fadama III Farmers in Adamawa State, Nigeria. *Asian Journal of Agriculture and Rural Development*.3(9): 657-666
- [14]. Sani, M. H. and Haruna, U. (2014). Resource Utilization Effects of Fadama III under Rainy Season and Dry Season Water Melon (*Citrullus Lanatus*) Production in Gombe State, Nigeria. *Sop Transactions on Economic Research*. 1(2): 77-91
- [15]. Adebayo, A. A. (1999). Climate II: Rainfall. In: Adebayo, A. A. and Tukur, A. L. (eds), *Adamawa State in Maps*. Praclete Publishers, Yola, Nigeria.
- [16]. National Population Commission, N. P. C., (2006). *National Population Census of the Federal Republic of Nigeria, 2006*.
- [17]. Ogunniyi, L.T.; Adepoju, A.A. and Olapade-Ogunwole, F. (2011). Comparative Analysis of Poverty and Income Inequality among Food Crop and Livestock Farmers in Ilesha Metropolis, Osun State. *Global Journal of Human Social Science*.11(6): 1-8
- [18]. Ellahi, M. and Mahboob, H. (2013). Comparative Economics of Crop and Livestock Enterprises in Various Provinces of Pakistan in the Temporal Context. *Global Advanced Research Journal of Arts and Humanities*.2 (4): 69-74.