

## **Impact of National Fadama Development Project III on Poverty Rate in Nigeria: A Case Study of Federal Capital Territory, Abuja**

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### **Abstract**

*The study examined the poverty rate in the Federal Capital Territory (FCT), Abuja, among those who benefited from the National Fadama Development Project III. The study adopted primary method of data analysis using purposive sampling and proportional allocation sampling techniques following Bowley (1926) in the selection of 413 respondents' beneficiaries of Fadama III project in the distribution of questionnaire across all the 6 Area Councils of the FCT. In order to achieve the objective of the study, the Ordinary Least Square method of statistical analysis was used. In contrast to beneficiaries funding capacity (NF1) and rural infrastructure investments (NF3), which are negatively signed and statistically insignificant in explaining the behaviour of beneficiaries' poverty level in the study area, the study found that beneficiaries' levels of training (NF2), project management (NF4), and productivity of user households (NF5) are statistically significant at the 5% level of significance. This indicates a positive relationship suggesting that, the establishment of Fadama III project has led to 31%, 27% and 15% improvement of (NF2), (NF4) and (NF5) in FCT, respectively. It was also established that the programme faces some challenges like crop yields and output supply, late disbursement of counterpart funds, herdsmen clashes, and politicization of the programme. The study recommends that subsequent poverty and agricultural programmes should take the issue of improvement in agriculture through technologies thoughtful in order to increase crop yields and output supply, as this will increase their income and productivity, and reduce the number of poor people in the FCT.*

**Keywords: Beneficiary, Fadama III Project, Poverty**

**JEL Classification Codes: O1, O2, Q1**

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## **1. Introduction**

The consistent problem of most developing countries, such as Nigeria is endemic poverty. Notwithstanding the country's large natural area and endowment of human resources, foreign exchange earnings from its export of crude oil, the per capital income has remained relatively low with high rate of unemployment and most of the citizens live below the poverty line of 1 USD per day. Poverty has persisted in Nigeria, especially amid rural residents, who are mainly farmers due to policy formulations and strategy failure (Adeyemo & Kehinde, 2021). The World Bank attributes the level of poverty in Nigeria as a result of low productivity of farmers.

Agriculture remained very important to national economic growth and poverty reduction in Nigeria, contributing over 42.4% to total GDP growth. The main tactic and policy in the struggle to end world hunger and reduce poverty is increased agricultural productivity. It seeks to boost economic growth and enhance rural livelihood. Some of the issues facing Nigeria today include raising per capita income and improving citizen quality of life, which will lower the country's poverty rate and improve social facilities and rural residents' means of subsistence (Muhammad, Umar, Abubakar, & Abdullahi, 2012). Despite years of efforts to create new technologies and policy formulation by both the State and Federal Government, agricultural practices in Nigeria still remained at its elementary level (Simonyan, Olukosi, Omolehin, & Atala., 2012). This has hampered agricultural sector to meaningfully contribute to foreign exchange earnings and reduction in poverty level of rural dwellers (Olaolu, Akinngbe, & Agber 2013). The federal and state governments have put in place a variety of policies over the years and initiatives aimed at improving the performance of the agriculture sector, some of which have gone dilapidated, while some are still on-going (Ike, 2012). It is important to note that some of the programs failed because most of them used public dominated service oriented approach.

The Federal Government of Nigeria has over the years designed various poverty reduction policies such as Family Economic Advancement Programme (FEAP) in 1997, Family Support Programme (FSP) in 1994, Better Life for Rural Women (BLRW) in 1987, Directorate for Social Mobilization (MAMSER) in 1987, National Directorate of Employment (NDE) in 1986, National Accelerated Food Production Project (NAFPP) in 1980, Nigeria Agriculture and Cooperative Bank (NACB) in 1978, National Accelerated Food Development Programme (NAFDP) in 1972, Nigeria Entrepreneurship Development Work for Yourself (EDWY) established in 1971, River Basin Development Authorities (RBDA) in 1964, and Commodity Board (CB) in 1947. The most recent initiatives to reduce

poverty are National Social Investment Programme created in 2015, Government Enterprise and Empowerment Programme (GEEP) which includes, the Home-Grown School Feeding Programme, TraderMoni, MarketMoni, and FarmerMoni. Determined to decrease the human challenge known as poverty, succeeding governments have turned out several socioeconomic programmes, but they have not truly improved the Nigerian society for good. The sardonicism of the situation is that with each passing year, the problem of poverty takes on a more disturbing facet than when it was earlier addressed (Umar, 2019).

One of the most recent programme and policy by the government was the establishment of National Fadama Development Project (NFDP). The first phase of the project did not record much success in its operations, this resulted in the formation of Fadama II in 2004. The design of which came with paradigm shifts from service oriented to a demand-driven-approach and was adjudged successful, however, it did not cover all the states of the federation and this led to the establishment of Fadama III in which all states of the federation participated (Umar, 2013). The NFDP III was established as a result of the lessons drawn from previous phases of the project which was expected to impact the lives of rural farmers, raising their income by 63% (National Fadama Development Office, 2011).

The 36 states and the FCT of Nigeria were involved in the \$450 million Fadama III project. Funding for the project includes \$250 million in International Development Agency (IDA) credits and \$200 million in matching contributions from Nigeria's federal, state and local governments. The third phase of Fadama project encouraged social inclusion, in which all groups in the communities have equal chance of participating, and the project pays more attention on the vulnerable groups in the society (National Fadama Development Office [NFDO], 2010).

Nevertheless, the main goal of the programme is to raise the incomes of beneficiaries through Fadama by increasing their earnings, decreasing poverty in rural areas, improving food security, and helping to accomplish important Sustainable Development Goals (SDGs). Moreover, supporting the increment of livelihoods of Fadama beneficiaries by specifically conveying assets to the beneficiaries communities, effectively and successfully, and enabling them to collectively choose on how assets are distributed and overseen for their income activities and to take part within the plan and implementation of their subprojects. The recipients were helped to form themselves in commercial importance groups, termed Fadama User Groups (FUGs), each having a mean of 20 memberships (plus their households). Thus, the FUGs established Fadama Community Associations

(FCAs) which are top administrations of 15 FUGs on the average at the community level (National Fadama Coordination Office [NFCO], 2017).

Though, FCT was among the areas that benefited in both Fadama II and Fadama III (Mustapha, Abdullahi, & Yusuf, 2018). The importance of Fadama III to beneficiaries has kept on increasing due to their environmental idiosyncrasies and abuse for water system, angling, creature brushing, household water supply, therapeutic herbs and the perceived need to increase Fadama users' income (Nwoye & Nwalieji, 2019). Thus, the approach used in Fadama III which is meanly community development approach /community driven approach (CDA) will help in availing policy makers with proper understanding of NFDP III and how it could improve the capacity of beneficiary through improved crops yield and reducing the poverty level. Expansively, this study will help in the understanding of the achievements of the Sustainable Development Goals (SDGs) one and two, (that is) no poverty and zero hunger, respectively.

Therefore, it is imperative to look at how the Fadama III project has affected the beneficiaries' rate of poverty in the Federal Capital Territory. The study's conclusions will be used to formulate significant policy recommendations, and the results will direct decision-makers on matters pertaining to poverty alleviation initiatives in Nigeria.

## **2. Empirical Review**

Since the discovery of crude oil in Nigeria, there has been considerable public debate about the costs and benefits of agriculture for an emerging market or economies like Nigeria. Some writers argued that agriculture should remain the main driver of the economy by providing raw materials for industries thereby enhancing economic growth. Some of which are, Idris and Kabiru (2019) research on the impact of Ffadama III project on the provision of Small-Scale Community-owned Infrastructures (SCIs) for poverty alleviation in Kaduna and Sokoto States. The study utilizes questionnaire to get primary data from 245 respondents and finds that the result of the Fadama III had a thoughtful impact on the beneficiaries particularly livestock owners and crop farmers. According to the report, revenue from crop farmers climbed by 199% and income from livestock owners increased by 221% in Kaduna State, however in Sokoto State, income from crop farmers increased by 225% and income from livestock owners increased by 315%. The condition of crop producers and animal owners with regard to food security significantly improved, rising by around 84.4% and 98.3%, respectively. Therefore, the research suggested that, in order to continue being part of national development goals, Federal, State, and Local Government authorities should, out of concern, extend their

commitment beyond helping to provide rural infrastructure to those of scaling up the levels of provision, maintenance, and management as well as poverty alleviation. Idris and Kabiru's work were on SCIs for poverty reduction which is a component of Fadama III but this research captures the six (6) components of Fadama III as its impact on the livelihood of beneficiaries in FCT.

Aboki, Danji, Samuel, and Nyapuri (2020) evaluated how the Fadama III project affected the rice farmers in Taraba state's Lau Local Government Area. Purposive and random sampling approaches were employed to gather primary data from the list of registered rice farmers and Fadama III recipients in the study area, resulting in a sample size of seventy. Multiple regression analysis and descriptive statistics were used in their study to analyse the data. The analysis demonstrates that the Fadama III programme had a favourable effect on the beneficiaries' income level. The study also shows that the variables of farm size, education, experience in farming, and loan availability were positively and statistically significant at 1%, suggesting that the variables affect rice farmers' income. The report makes the recommendation that standard storage facilities be made available to farmers and other stakeholders by both the public and private sectors. This study analyses the effects of Fadama III on poverty alleviation among project beneficiaries in the FCT, not only concentrating on the impact on rice farmers but also looking at other beneficiary categories in the FUGs, including fishers, pastoralists, hunters, agro processors, livestock farmers, etc.

Adeyemi, Adeyemo, Kehinde, and Famuyini (2020) investigated how membership in Fadama III user groups affected the food security of rural households in Benue State, Nigeria. The double hurdle model and the Foster, Green, and Thorbecke index (food expenditure approach) were used to gather and analyse the data. The findings indicate that although food insecurity was 0.06 among non-participants in the Fadama III experiment, it was 0.04 among participants. The result of the study also reveals that age, household size, farming experience, participation and access to credit was the significant factors influencing the severity of food security in the study area. The study comes to the conclusion that food security was positively and significantly impacted by involvement in the Fadama III initiative. The report suggests that in order to raise Nigeria's degree of food security, farmers should be encouraged to take part in the initiative more.

Oghenero (2020) looked at and assessed the limitations and tactics that Fadama III in the Nigerian Niger Delta Area perceived. The results of the study show that various restrictions, like insufficient funding, insufficient input supports, and excessive bureaucracy of donor agencies,

were identified as major constraints using a multi-stage sampling procedure and analysis of variance. This has clearly indicated that inadequate materials and long processes involved in the disbursement of funds have negatively affected the smooth flow of the programme. The study recommends that greater assistance should be given to farmers in the form of assets and inputs to boost output as well as prompt delivery of advising support. The brilliant thing about the Oghenero study is that it was carried out across three southern states and was able to classify the Fadama III restrictions so that decision-makers could determine which to prioritise. Nonetheless, this study assesses how the Fadama III project has affected the poverty rate among FCT beneficiaries.

Adetomiwa, Mayowa, Adebayo, and Victor (2020) evaluated how the Fadama III group participation initiative affected the rural families in South-West Nigeria's level of food security. The food security index, double-hurdle model, Probit regression, and descriptive statistics were used to analyse the data that were gathered. According to the food security line developed, the majority of Fadama III programme participants have access to food compared to non-participants. The Probit regression (first hurdle) result reveals that, for participants in the Fadama III programme, farm size, non-farm income, membership in an association, and income from the programme were significant positive determinants of food security status; however, for non-participants, household size was a significant negative determinant of food security status. In contrast, gender and non-farm income were significant positive determinants of food security status. The study recommends that the programme should accommodate a large number of prospective farmers in order to enhance their well-being and food security. Similar to Adetomiwa et al.'s research, this study uses OLS rectilinear regression analysis and descriptive statistics to evaluate the effect of the Fadama III project on the poverty rate among FCT recipients.

Mustapha and Yusuf (2019) evaluated the effect of the Fadama I project on the income and poverty of recipients in Goronyo Local Government Area of Sokoto State, Nigeria. Descriptive statistics and the Foster, Greer, and Thobbecke (FGT) poverty index were used to analyse the data. The study's conclusions show that the project's beneficiaries were happy with the strategy and oversight techniques used by the Fadama I project to carry out the goals. Additionally, the project had raised their incomes and effectively met the needs of the farming households in the study area. The outcome also shows that the beneficiaries of the Fadama I initiative had raised their mean per capita income. According to the report, governments and development partners should keep assisting agriculture by implementing project interventions like the Fadama project and employing

suitable techniques that take into account the unique needs of the beneficiaries. While Mustapha and Yusuf's study focused on the effects of Fadama I on poverty and income in a Sokoto State local government area, this research looks at the effects of Fadama III on poverty across all of the FCT's area councils.

Amusan, Simoyan, and Anugwo (2017) study looked at the factors that influence farmers in the FCT's decision to choose a farm venture. Cross-sectional data from 387 Fadama users were collected using a standardized, closed-ended questionnaire. In order to analyse the data, multinomial logit model, frequency, percentages, and means were used. The multinomial logit model likelihood ratio statistics produced a very significant result ( $p < 0.0000$ ), as demonstrated by the  $\chi^2$  statistics. The factors' explanatory strength, as indicated by Pseudo R<sup>2</sup>, accounted for almost 66% of the variability in the farm enterprise choices made by Fadama customers. At the  $p < 0.01$  and 0.05 level of probability, the choice of farm enterprise is significantly impacted by variables like labour, education, gender, land ownership status, credit availability, and off-farm employment. . This study looks at how the Fadama III project has affected the poverty rate among FCT beneficiaries, whereas Amusan *et al.*, (2017) study focused on the factors that influence farm enterprise choice among Fadama users in the region.

Adebayo (2018) used a sample of 293 project beneficiaries and 293 non-beneficiaries to examine the effect of Fadama III intervention on farmers' livelihood in Kuje Area Council of the FCT. The socioeconomic characteristics of the respondents were analysed using descriptive tools like tables, percentages, charts, ratios, and averages. The hypothesis was tested using the probit regression technique and the student t-test, and the project's effect on farmers' livelihood opportunities was assessed. The findings indicate a statistically significant difference in the socioeconomic features between the non-beneficiaries and beneficiaries of Fadama III. The study also finds that the project has a positive impact on the beneficiaries' poverty status. According to the survey, among the main issues that farmers deal with are limited access to agricultural land, equipment, finance facilities, and improved seed. As a result, the study suggests that future Fadama projects be expanded to non-beneficiaries due to their potential to improve livelihoods; additionally, they should receive sufficient funding and land reforms to enable the expansion of farms, give access to credit facilities, permit the purchase of agricultural inputs, and provide infrastructure, among other things. While Adebayo's work evaluates the Kuje Area Council, one of the six (6) Area Councils in the Federal Capital Territory, this research study covers all six (6) Area Councils to examine the effects of Fadama III on beneficiaries' quality of life in the region.

## **2.1 Theoretical Review**

### **2.1.1 Agricultural Land Location Theory**

The first model of agricultural location was propounded in 1826 by Thunen, in his book: “The Isolated State”. As pointed out by Zhang (2002), the theory argued that distance from the market was the main determinant of what combination of crops a farmer should grow and with what intensity. Thunen theory also argued that three factors influenced the types of production at any location; distance to market; selling price of product at the market, and land rent, which is roughly equivalent to economic rent.

### **2.1.2 Growth Pole Theory**

The growth pole theory of Perroux (1949) emphasized that, the spatial distribution of economic activity does not fluctuate around a long-term equilibrium norm but tend to promote the concentration of growth in some area at the expense of others. The main policy conclusion was that government should establish counter poles to those which had been established in faster growing regions through the free working of the market, and in due course hope to harness polarization in favour of less-developed regions. The central idea of growth pole theory indicates that economic development or growth is not uniform over an entire region but instead it takes place around a specific pole (cluster). This is in conformity with the aim of National Fadama Development Project (NFDPP) which take a developmental initiative to an area of less-development, where the populaces are peasant farmers.

### **2.1.3 Induced Innovation Theory**

Induced innovation is a microeconomic hypothesis first proposed by Hicks (1932) in his work “The Theory of Wages”. The theory suggested that a change in the relative prices of the factors of production is itself a spur to invention and to invention of a particular kind of economizing the use of a factor which has become relatively expensive.

## **2.2 Theoretical Framework**

The Induce Innovations hypothesis was chosen as the foundational theory for this investigation. The idea clarifies how a society selects the best course for sectoral and technical advancement in agriculture. The idea holds that while technical advancement and changes in relative resource endowments drive institutional changes, technical development in



agriculture is a reaction to shifts in resource endowments and increases in product demand.

A dependable and useful paradigm for examining the interactions between institutional reforms, technological advancements, and markets that support agricultural development was offered by Grigg (1995). As a result, his work is well known for helping farmers boost agricultural revenue and production as a result of institutional and technological advancements. The majority of nations that have been able to achieve swift technological advancements have purposefully utilised the socialisation of agricultural research as a tool for agricultural modernization. The process of modernization has required building industrial and experiment station capacity in order to produce mechanical and biological innovations that are tailored to the requirements of the factor supply.

According to the hypothesis, when relative input costs shift, innovation is prompted to find ways to use the increasingly expensive input more efficiently. It would be advantageous to support government action as well. Because agricultural workers are unable to generate these improvements on their own, they demand that public research institutions develop new technologies. Agricultural supply firms use these technologies to manufacture updated machinery that they may sell to surrounding farms. When local farmers get access to modern farming technologies, the output supply will rise and ultimately help to reduce poverty.

### **3. Data and Method**

The study was conducted in the FCT, the capital of Nigeria. It is situated between latitudes 8.25 and 9.20 north of the equator and longitudes 6.45 and 7.39 east of the Greenwich Meridian. It has total land area coverage of 8,000sqkm with a total population of 1,404,201 people as at 2006 census. The annual rainfall is within 1100mm-1600mm with over 93,092 farming population and about 50,000 registered Fadama farming families. The FCT has over 1,083 registered Fadama Union Groups (FUGs) among which over 694 FUGs have been trained on agricultural technology comprises of over 5,970 people (FCT Fadama Coordination Office, 2015).

Data for this study was mainly collected from primary sources with the aid of well-structured Questionnaire, Key Informant Interview (KII) and Focus Group Discussion (FGD). Based on the questionnaire, 413 copies of the questionnaire were distributed among the beneficiaries of Fadama III project across the 6 Area Councils of FCT namely Abuja Municipal, Abaji, Bwari, Gwagwalada, Kuje and Kwali. Purposive sampling techniques and proportional allocation sampling techniques credited to Bowley (1926) were used in the selection of respondents from 5,970 beneficiaries across the

FUGs in the 6 Area Councils of the FCT. The sample size of 375 was calculated using the Yamane (1967) formula, and 10% (37.5, or about 38) of the sample size (375) was added to the overall sample size to account for missing cases. Therefore, a total number of 413 copies of questionnaire were distributed among the project beneficiaries across the 6 Area Councils. The data collected was further analyzed using descriptive statistics, frequency distributions and percentages were employed in the analysis.

### 3.1 Model Specification

In building the model for this study to achieve the objective, the Ordinary Least Square (OLS) method of rectilinear regression analysis was used as adapted from Ugwumba and Okechukwu (2014). The OLS model was considered as the most appropriate estimation technique in this study because it has superior small sample properties as compared to the others techniques. Regression analysis is used to quantify the relationship between independent and dependent variables. On this basis, the model for the study can thus be specified as follows:

$$Y = f(X_1 + X_2 + X_3 + X_4 + X_5 + u) \quad (1)$$

as the base line model

$$POV = f(NF_1, NF_2, NF_3, NF_4, NF_5) \quad (2)$$

The models above in mathematical and stochastic forms are specified as follows:

$$POV = \beta_0 + \beta_1 NF_1 + \beta_2 NF_2 + \beta_3 NF_3 + \beta_4 NF_4 + \beta_5 NF_5 + \mu \quad (3)$$

Where:

POV= Poverty

NF<sub>1</sub> = National Fadama Development Project III beneficiaries funding capacity

NF<sub>2</sub> = National Fadama Development Project III beneficiaries level of training

NF<sub>3</sub>= National Fadama Development Project III rural infrastructure investments

NF<sub>4</sub>= Level of National Fadama Development III Project Management

NF<sub>5</sub>= Productivity of National Fadama Development Project III user households income

μ = Error or Stochastic term.

β<sub>0</sub> = Intercept.

β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub> and β<sub>4</sub>= Coefficients of the regression.

### 3.2 Coding and Measurement of Variables

The poverty rate questions were generated from a likert scale questions administered to respondents. The questions, rated on the five

scales of strongly agreed, undecided, agreed, disagreed and strongly disagreed whether Fadama III reduces the hunger and poverty status, enables beneficiaries to meet their basic food needs and improve their standard of living. Questions on level of training were also administered to the respondents related to the strengthened capacity of ADPs to provide extension services to Fadama farmers, the link between Fadama users and research institutions and if there is an increased new idea on Fadama farming that boasted agricultural production in your area. The rural infrastructure investment is also variable that is generated from a likert scale questions administered to respondents whether there is an improved access of communities to productive rural infrastructure that generates shared economic or environmental benefits and Increased utilization of Fadama user groups to acquire productive asserts. The funding capacity questions such as timely releases of fund, utilization of funds were administered to respondents which will help Fadama farmers and the project achieve its objectives. Questions on project management were also administered to the respondents on project management, monitoring and evaluation whether there is an enhanced project implementation for Fadama users that leads to poverty alleviation and increased in livelihood of beneficiaries. Questions relating to rural user households income were also administered to the respondents because the income of Fadama users is one of the criteria to assess the extent of their livelihood improvement.

#### **4. Results and Discussion**

**Table 1: Distribution and Retrieval of Questionnaires from the Study Area**

Area Councils	No. of Questionnaire Distributed	No of Questionnaire Returned	Percentage of Questionnaire Returned (%)	No. of Questionnaire lost	Percentage Lost (%)
Abaji	64	64	100	0	0
Bwari	23	23	100	0	0
Gwagwada	102	102	100	0	0
Kuje	63	63	100	0	0
Kwali	89	89	100	0	0
Abuja Municipal	72	71	99	1	1
Total	413	412	99.8	1	1

Source: Field Survey 2023.

In the study area where the data was gathered, a questionnaire was given to 413 beneficiaries, and 412 beneficiaries' answers were retrieved from it. This section provides a summary of the respondents' frequencies across a number of demographic characteristics.

**Table 2: Distribution of Respondents by their Demographic Information and Socio-Economic Characteristics**

Number of Respondents		
Sex	Frequency	Percentage (%)
Female	220	52.84
Male	189	46.66
Missing	3	0.50
<b>TOTAL</b>	<b>412</b>	<b>100</b>
<b>Age Category (years)</b>		
25-35	24	6.80
36-45	156	37.38
46-55	164	39.32
56 and Above	68	16.50
<b>TOTAL</b>	<b>412</b>	<b>100</b>
<b>Household Size</b>		
< 3	26	7.31
3-5	155	37.60
6-8	178	42.71
9 and above	53	12.38
<b>TOTAL</b>	<b>412</b>	<b>100</b>
<b>Educational Qualification</b>		
SSCE and Below	293	71.11
ND/NCE	90	21.84
B.Sc/HND	24	5.83
MSc/MBA	3	0.73
Ph.D	2	0.49
<b>TOTAL</b>	<b>412</b>	<b>100</b>
<b>Occupation</b>		
Farmer	338	82.14
Artisan	12	2.48
Others	62	15.38
<b>TOTAL</b>	<b>412</b>	<b>100</b>
<b>Category of Beneficiary</b>		
Crop Farmer	114	27.32
Fisher Folks	49	11.95
Pastoralists	22	4.88
Hunters	11	2.40
Agro-Processors	88	21.50
Livestock Farmer	116	28.29
Others	12	3.66
<b>Total</b>	<b>412</b>	<b>100</b>

Source: Field Survey 2023.

In terms of gender, Table 2 reveals that female respondents are more than male. A total number of 220 (52.84%) are females while 189 of the subjects (46.66%) are males. It is important to note that (6.80%) of the respondents fall within the 25-35 age group, (37.38%) in the 36-45 age bracket, (39.32%) within 46-55 age, and (16.50%) within the age group of 56 and above. This suggests that majority of the respondents' falls between 25-55 age groups with 76.7%. Indicating that majority of the Fadama III beneficiaries are within their youthful age. The preceding also reveals that (71.11%) of the respondents obtained the minimum of SSCE and below educational qualification, (21.84%) of them obtained ND/NCE certificate, while (5.83%) held B.sc/HND certificate, (0.73%) had M.Sc/MBA and (0.49%) obtained Ph.D. This signifies that majority of the subjects attended only SSCE and below, which means they can be involved in other economic activities suitable for their respective position since they are less engaged with household. The analysis of category of beneficiary in Table 4.2 also reveals that majority (28.29%) of the respondents benefited from livestock farming, (27.32%) of them benefited from crop farming, (21.50%) from agro-processing, (11.95) from fisher folks, (4.88%) from pastoralist while (2.40%) of the respondent's benefited from hunting farming, respectively. Table 4.2 indicates that majorities (82.14%) of the respondents are farmers, (2.48%) are artisan and (15.38%) are other occupations, respectively.

**Table 3: Relationship between Fadama Development Project III and Poverty Level of Beneficiaries in FCT**

S/n	Determinant	SA	A	UD	SD	D	TOTAL	MEAN	REMARK
1	It increases incomes status of beneficiaries.	148 53.92 %	234 56.80 %	19 4.61%	4 0.97 %	7 1.70 %	412 100%	4.18	Accepted
2	It increases savings of beneficiaries.	167 40.53 %	202 49.03 %	29 7.04%	4 0.97 %	10 2.43 %	412 100%	4.20	Accepted
3	It increase the spending pattern of the beneficiaries	132 32.12 %	248 60.09 %	26 6.33%	2 0.49 %	4 0.97 %	412 100%	4.00	Accepted
4	It enhances sustainable income	158 38.35 %	224 54.37 %	19 4.61%	2 0.49 %	9 2.18 %	412 100%	4.18	Accepted
5	It reduces the hunger and poverty status of beneficiaries	167 40.53 %	202 49.03 %	29 7.04%	4 0.97 %	10 2.43 %	412 100%	4.25	Accepted
6	It enables beneficiaries to meet their	151 32.77 %	231 53.64 %	19 10.44 %	6 1.70 %	5 1.21 %	412 100%	4.32	Accepted

7	basic food needs.								
	It enables beneficiaries to improve standard of living	135	222	43	7	5	412	4.17	Accepted
		32.77	53.88	10.44	1.70	1.21	100%		
		%	%	%	%	%			

Source: Field Survey, 2023. Note that SA= Strongly Agreed (5), A=Agreed (4), UD=Undecided (3), SD=Strongly Disagreed (2) and D=Disagreed (1).

Table 3 uses the mean analysis of descriptive statistics to make the following decision rule. The decision criterion employed was to agree any statement with mean score of 3.0 and above and disagree on those with less than 3.0 based on the likert scale of 1 to 6. For this reason, since the mean scores of all the variables factors suggested in Table 3.3 are greater than 3.0 therefore, implied that respondents agreed to all decision. Table 4.3 result also reveals that 148 (35.92%) of the sampled beneficiaries strongly agreed that there is increased short run income status of the beneficiaries of Fadama beneficiaries, 234 (56.80%) of the beneficiaries Agreed, 19 (4.61%) were undecided, 4 (0.97%) strongly disagreed and 7 (1.70%) of the beneficiaries disagreed. The result also indicates that there was increased short run income status of Fadama beneficiaries in the study area.

It was also observed in Table 3 that 167 (40.53%) of the sampled beneficiaries strongly agreed that there is increased saving habits of the part of the beneficiaries of Fadama project, 202 (49.03%) of the beneficiaries agreed, 29 (7.04%) were undecided, 4 (0.97%) strongly agreed and 10 (2.43%) of the beneficiaries disagreed. The outcome specifies that there was an increased savings habit on the part of the Fadama beneficiaries in the study area. The result confirmed with the work of Adeyemo *et al.*, (2021); and Oghenero (2020) studies on the evaluation of the constraints of Fadama III project in some part of Niger Delta areas of Nigeria. The results in table 3 also reveals that 132 (32.12%) of the sampled beneficiaries strongly agreed that there is increased spending pattern of the beneficiaries of Fadama project, 248 (60.09%) of the beneficiaries agreed, 26 (6.33%) were undecided, 2 (0.49%) strongly agreed and 4 (0.97%) of the beneficiaries disagreed. This result indicates that there was increased spending pattern on the part of the Fadama beneficiaries in the study area.

The analysis also notes that 158 (38.35%) of the sampled beneficiaries strongly agreed that there is enhanced sustainable income stream for the beneficiaries of Fadama project, 224 (54.37%) agreed, 19 (4.61%) beneficiaries were undecided, 2 (0.49%) strongly disagreed and 9 (2.18%) disagreed, respectively. Majority of the respondents agreed that there was enhanced sustainable income stream on the part of the Fadama beneficiaries in the study area. The data reveals that 167 (40.53%) of the

sampled beneficiaries strongly agreed that there is reduced hunger and poverty level of the beneficiaries of Fadama project in the FCT, 202 (49.03%) Agreed, 29 (7.04%) were undecided, 4 (0.97%) strongly disagreed and 10 (2.43%) disagreed, respectively. The result indicates that there was reduced hunger and poverty level of the Fadama beneficiaries in the study area.

More so, the study establishes that 151 (32.77%) of the sampled beneficiaries strongly agreed that it meet their basic food needs, 231 (53.88%) agreed, 19 (10.44%) were undecided, 6 (1.70%) strongly disagreed and 5 (1.21%) disagreed, respectively. The outcome suggests that the beneficiaries of Fadama III were able to meet their basic food needs in the study area. The table also reveals that, among the sampled beneficiaries, 135 (32.77%) strongly agreed that it raises their level of living, 222 (53.88%) agreed, 43 (10.44%) were unsure, 1 (0.24%) strongly agreed, and 7 (1.70%) disagreed. The outcome suggests that the beneficiaries of Fadama III standard of living improve in the study area. The finding is in conformity with *Adetomiwa et al*, (2020) study on the impact of the Fadama III group participation programme on food security status of the rural households in the South-West, Nigeria and reported that majority of the respondents strongly agreed that Fadama III project reduce poverty and improve health care delivery of beneficiaries in the South West, Nigeria

**Table 4: Rectilinear Regression Results of Fadama III and Poverty Level of Beneficiaries in FCT**

Dependent Variable: POV				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
NF1	-0.004217	0.070469	-0.059839	0.9523
NF2	0.317045	0.076057	4.168529	0.0000
NF3	-0.019078	0.071344	-0.267407	0.7893
NF4	0.274430	0.063358	4.331408	0.0000
NF5	0.146739	0.071146	2.062512	0.0398
C	-0.002335	0.056291	-0.041477	0.9669
R-squared	0.361628	Mean dependent var		-4.06E-17
Adjusted R-squared	0.353727	S.D. dependent var		1.417530
S.E. of regression	1.139567	Akaike info criterion		3.113701
Sum squared resid	524.6400	Schwarz criterion		3.172474
Log likelihood	-632.3086	Hannan-Quinn criter.		3.136953
F-statistic	45.77197	Durbin-Watson stat		1.170736
Prob(F-statistic)	0.000000			

Sources: Author’s computation 2023 (Eviews-10).

Table 4 explains the effect of Fadama III components on poverty level of beneficiaries in FCT, confirmed the a priori expectations of the

models. The table demonstrates that beneficiaries' level of training (NF2), level of project management (NF4) and productivity of user households (NF5) are statistically significant at 5% level of significant in explaining the behavior of poverty level of beneficiaries in the study area. This indicates a positive relationship suggesting that, the establishment of Fadama III project has led to 31%, 27% and 15% improvement of (NF2), (NF4) and (NF5) in FCT, respectively. This is by comparing the probability values which is less than 5% level of significance or 0.05 while beneficiaries funding capacity (NF1) and rural infrastructure investments (NF3) are negatively signed and statistically insignificant in explaining the behavior of poverty level of beneficiaries in the study area.

The  $R^2$  of 0.36 implies that the independent variables have explained about 36% of the variation in poverty level of beneficiaries in FCT. The remaining is attributed to other factors that do affect poverty level of beneficiaries other than the variables included in the model. This is captured in the study by the error term. The Durbin – Watson statistics stands at 1.7 which indicates the absence of serial correlation. Also, we can reject the null hypothesis ( $H_{0i}$ ) that Fadama III project has no effect on poverty level of beneficiaries in FCT thereby accepting the alternative hypothesis.

The findings confirms with the work of Mustapha and Yusuf (2019) on assessment of the impact of Fadama I project on income and poverty of beneficiaries in Goronyo Local Government Area of Sokoto State, Nigeria which suggests that the project had raised their incomes and effectively met the needs of the farming households in the study area. Also, the study is in confirmation with Adebayo (2018) on the effect of Fadama III intervention on farmers' livelihood in Kuje Area Council of the FCT which finds that the study that the project has a positive impact on the beneficiaries' poverty status. The result confirms with the FGDs in all the Area Councils which suggests that the poverty level of beneficiaries has greatly improved and this can be seen by the change of status of beneficiaries in the community and has also increases their short run income status. For example, In Abaji Area Council FGDs, the respondents noted that they now farm with modern farming technology and fertilizer which has really improved their yield and increases their income.

Also, the respondents in Abuja Municipal and Bwari Area Councils FGDs agreed that the project has really reduced poverty because they can now meet up their basic necessities and obligations financially. This confirms the study of Aboki *et al.*, (2020) on the assessment of the impact of Fadama III programme on rice farmers which shows that the variables of farm size, education, experience in farming, and loan availability were positively and statistically significant at 1%, suggesting that the variables



affect rice farmers' income. The findings from the study also revealed several challenges as categorized into administrative and economical challenges. Key challenges under the administrative includes; late disbursement of counterpart funds, problem of herdsman clashes, poor road network, and politicization of the programme by government officials, among others while the economic challenges include; insufficient funds to beneficiaries, crop yields and output supply.

## **5. Conclusion and Recommendations**

The overall objective of this study was to investigate the effect of National Fadama development project III on poverty level of beneficiaries in FCT, Nigeria. The result from the respondents and OLS estimation analysis clearly shows that the level of training, level of project management and productivity of user households directly affects poverty level of beneficiaries in the study area. It was discovered that the Fadama III project's assistance had raised agricultural product output, which helped to address the FCT's poverty issues.

Furthermore, the beneficiaries' success story attests to the fact that the assistance they got increased their productivity, which in turn increased sales, income, and food security. Following the program's assistance, the recipients now enjoy more prosperity. Generally speaking, the output difference is quite statistically significant. Following intervention, the beneficiaries almost always see an increase in income as a result of the output. Following intervention, the beneficiaries always see an increase in income as a result of the output. Beneficiaries' food security status has improved as a result of the intervention, which has raised their income, provided healthcare, met their basic food needs, and reduced their poverty.

The administrative and economic limitations hindered the functioning of Fadama III. The following recommendations were presented in light of the study's findings: household agricultural output supply needs to grow sustainably in order to provide better and more reliable food sources. However, increased investment in certain infrastructure projects as well as the development of human resources is required in order to accomplish this. To boost agricultural yields and output supply, agriculture needs to be significantly improved technologically. The Fadama III extension agents should urge more farmers to take part in the Fadama projects because doing so will boost their production and income and lower the number of impoverished individuals in the FCT. Since one of the farmers' concerns is economic, financial support could be provided to them in exchange for their participation in the Fadama project. In order to ensure the smooth running of future projects in the study area, the government should solve the

administrative issues that the NFDP III encountered, such as the late disbursement of counterpart funds and the politicization of relevant government officials.

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