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# Analysis of Impact of National Fadama Development Projects on Beneficiaries Income and Wealth in FCT, Nigeria

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**Abstract**
This study evaluates the impact of Fadama III project on income and wealth of beneficiary farmers in FCT. Gwagwalada Area Council was selected for the study. The methodology adopted includes descriptive and analytical methods using primary data. Data were obtained from two hundred (200) fadama users and non-fadama users' farmers respectively. The findings of the study showed that the value of productive assets of fadama beneficiaries increases from ₦81, 240.97 before fadama III to ₦84, 9577.5 after Fadama III project. Conversely, there was a decrease in the net farm income of fadama beneficiaries from ₦198261.5 to ₦170180.4 during Fadama III project. The reduction in income despite the acquisition of productive assets could be due to limitations encountered by the farmers. Also, some of the beneficiaries are just acquiring the productive assets and the payment of the beneficiary contribution (30%) for pilot asset acquisition could have crowded out investment in short-term activities that could have increase income. It is expected that the increase in income will come significantly after starting to benefit from their investment in productive assets. The study recommend among others that strategies such as rotating saving and credit associations that can help the poor to access productive assets should be promoted, the low capacity of the poor and the vulnerable in managing productive assets efficiently could be addressed through training and development of complementary services.
**Key words:** Fadama Project, Beneficiary, Fadama Community Association, Fadama User Group

## 1. Introduction

Nigeria is a country blessed with potentially good land and water resources required for sustainable agricultural development. The fact that many government agricultural intervention development programmes in Nigeria have not had lasting impact on agricultural development and that many have not yielded the expected results of sustained increase in food production is well documented (Baba and Singh, 1998). Though, many attempts by governments, international development agencies, local organizations and non-governmental organizations (NGOs) with main focus in rural livelihood improvement, in the past few decades did not realize a desired results in terms of affirmative impact and its sustainability (Mohammed, 2003).

Agricultural production methods have remained undeveloped despite many years of efforts on technology generation and transfer in Nigeria. Rural financial supports are scarce and the rural finance policies implemented previously have impaired rather than assisted (Simonyan and Omolehin, 2012). However, in an attempt to alleviate poverty among rural Nigerians and also to increase the incomes and productivity of the rural inhabitants as an approach of meeting up with the millennium development goals (MDGs) of food sufficiency and poverty eradication, the Federal Government of Nigeria through the pooled World Bank loan came up with Fadama project, to finance the development of fadama lands by introducing small-scale irrigation in states with fadama development potentials. The project aimed at ensuring that Fadama facilities in Fadama areas are fully utilized to ensure all year round production of crops. Fadama are low laying lands subject to seasonal flooding or water logging along the banks of streams or depressions. It is a Hausa word meaning, the seasonally flooded or flood able plains along major savannah rivers and or depressions or adjacent to seasonally or perennially flowing streams and rivers. It is called Akuro in Yoruba land.

The huge potentials for irrigated agriculture in the fadama and flood plain are unquestioned. According to Baba and Singh (1998), the fadama lands have high potentials and agricultural values several times more than the adjacent upland. Fadama development is a typical form of small scale irrigation practice characterized by flexibility of farming operations, low inputs requirement, high economic values, minimal social and environmental impact and hence conform with the general criteria for sustainable development (Akinbile *et al*., 2006).

The NFDP is widely being implemented in all the 36 states of the federation and the Federal Capital Territory (FCT), which have been categorized into the core states and the facility states. The core states include Bauchi, Gombe, Jigawa, Kano, Kebbi, Zamfara and Sokoto, while the remaining states and the FCT constitute the facility states (Baba and Singh, 1998). FCT is therefore one of the facility states.

However, the main objective of the programme is to sustainably increase the incomes of FADAMA users, by

 

increasing their incomes, the project would help reduce rural poverty, increase food security and contribute to the achievement of a key millennium development goal. Also, sustaining the increase of incomes of Fadama resource users by directly delivering resources to the beneficiary rural communities, efficiently and effectively, and empowering them to collectively decide on how resources are allocated and managed for their livelihood activities and to participate in the design and execution of their subprojects.

It is therefore, indispensable to assess the NFDP in the FCT to prevent the programme from suffering. The broad objective of this study is to assess the impacts of Fadama project on income and wealth in the Gwagwalada Area Council of FCT, Nigeria. The specific objectives are to; assess the impact of the project on the socio-economic status of the people; examine the impact of the project on income and wealth; and identify the challenges faced by beneficiaries in the project. This study will therefore, assess the extent to which the farmers perceived that desired benefits from the NFDP has been realized as well as the extent to which the objectives of the NFDP has been achieved in the FCT.

## 2. Brief Literature Review

The review of literature is organised into three sub-sections; Firstly, conceptual framework, theoretical review and overview of empirical studies.

### *2.1 Conceptual Framework*

The conceptual framework guiding this study is the body of work known as the livelihoods approach or framework (Scoones, 1998; Bebbington, 1999; Carney et al, 1999; Ellis and Freeman, 2005). A livelihood comprised of the capabilities, assets (including both material and social resources) and activities required to make a living (Chambers and Conway, 1992). Livelihoods are based on income (in cash, kind, or services) obtained from employment, and from remuneration through assets and entitlements. Different members of a household engage in different types of livelihood activities and each household member above a certain age attempts to procure different sources of food, fuel, animal fodder and cash; these sources are likely to vary according to the month of the year. In water sector, livelihoods analysis is essential because it assesses gains and losses of the rural or urban poor from irrigation activities (Lankford, 2005). It improves the knowledge of the context from the local level upwards and helps to analyse opportunities and constraints of the rural or urban poor to benefit from the changes within the given context (Nicol, 2000). It helps to identify what options have better potential to reduce poverty within the given context and what enabling conditions, policies and incentives are needed for the poor to increase the range of better livelihood options (Scoones, 1998; Ellis, 2000; Moriarty et al, 2004; Lankford, 2005).

Some of the distinctive features of the livelihoods framework are that it takes an 'all-round' view of people's means of gaining a living, including the social and institutional circumstances in which people's livelihoods are embedded. At the centre of the approach is a relationship between the assets or resources that people own or can obtain access to, including land, irrigation water, skills and education levels of family members, which are categorised as natural, human, social, financial and political capitals (Scoones, 1998; Nicol, 2000; Ellis and Freeman, 2005). The households utilise these assets in their productive activities in order to create income and satisfy their consumption needs, maintain their asset levels and invest in their future activities. The access to the assets is strongly influenced by the vulnerability context and policies and institutions.

### 2.2 Theoretical Review

#### *2.2.1 An Overview of Fadama III*

Smallholder agriculture is the dominant occupation of rural Nigerians which is mainly rain-fed and characterized by low land and labour productivity. Yet, Nigeria has a potential comparative advantage in the production of a variety of fresh and processed high value crops, especially vegetables during the dry season and livestock product (meat and milk) and fisheries products throughout the year. This is because the country is endowed with underground and surface water reserves, rich pastures and favourable agro ecological conditions in the country's low-lying plains with alluvial deposit called fadama. The desire to realize the full potential of Fadama resources in Nigeria led to the design of the National Fadama Devepment project, mainly funded by the World Bank, with counterpart funding by the federal and benefiting state government.

The Fadama I and II projects successfully refined approaches for improved utilization of these lands. Fadama II is implementing an innovative local development planning (LDP) tool and building on the success of the community-driven development mechanisms. The cumulative impact of these earlier successful Bank-assisted projects attests to the robustness of the small-scale and community based approach to fadama development in an environmentally sensitive manner. The Fadama III operation will support the financing and implementation of five main components designed to transfer financial and technical resources to the beneficiary groups in: (i) institutional and social development; (ii) physical infrastructure for productive use; (iii) transfer and adoption of technology to expand productivity, improve value-added, and conserve land quality; (iv) support extension and applied research; and (v) provide matching grants to access assets for income-generation and livelihood

 

improvements.

*2.2.2 Implementation Strategy of Fadama III*

The Project initial implementation is for period of five years, from July 2008 to June 2013 but has been extended to 2017. It will now close in December 2017. The Project is anchored on the CDD approach. Community organizations decide on how the resources are been allocated among the priorities that they themselves identify and they manage the funds. Extensive facilitation, training, and technical assistance were provided through the Project to ensure that poor rural communities, including women and vulnerable groups, especially the physically challenged, participate in the collective decision-making process. The Project helps by giving voice to the communities as well as promotes the principles of transparency and accountability in planning and management of public investments within the LGAs.

Ejiofor (2007) explained that the CDD strategy makes it possible for beneficiaries to play leading roles in:-

(a) Identification and prioritization of their needs;
(b) Deciding and preparing of micro- projects required to address the identified needs;
(c) Co- financing the micro- projects;
(d) Continue to operate and maintain the micro- projects thereby ensuring sustainability;
(e) Learn to do things for themselves and in so doing their capacities are built; and
(f) Ownership of the micro- projects is guaranteed by active participation of beneficiaries in all the phases of the micro-projects cycle (identification, planning, prioritization, designing, implementing and maintenance of intervention measures)

*2.2.3 Fadama III Strategic Choice*

The main strategic choices made in the project design include the following**:**

(a) *To address constraints to productive infrastructure*: Inadequacies in rural infrastructure and essential support services, road access and dry season irrigation, and availability of relevant agricultural and land management technologies constrain growth and adoption of more sustainable approaches to land management. The core activities funded by this Project address this constraint.

(b) *To improve livelihood opportunities:* The Project supports productive activities, technical assistance and investment in assets and land quality and services identified by communities as relevant to generation of higher incomes and better livelihoods.

(c) *To empower the rural poor:* The poor lack power and voice to access basic services, identify opportunities, and exercise legal rights. Information is scarce. Household, village, and local government decision-making processes are often opaque and exclusionary. Mechanisms to ensure accountability in delivery of state and local government services are weak. The Project's facilitators working with the Fadama groups will help them overcome barriers deriving from lack of knowledge or insufficient cooperation among groups.

(d) *To promote socially-inclusive and community-based approaches*: Integration of social inclusion and community-driven principles has proven to be cost-effective, responsive to local priorities and effective in reducing conflicts over use of natural resources. This proven approach has demonstrated that the key is to promote investments that bring both private profitability and public benefits.

(e) *To accord adequate attention to technical quality assurance:* Limited capacity in supervising the technical aspects of community subprojects contributed to delay in implementing local development plans and subprojects funded under the Fadama II Project. The Fadama development facilitators and service providers will receive adequate training before they are deployed in the communities. The Facilitators' training program will be designed to increase their sector-specific technical skills and provide them with the skills to perform feasibility work and technical supervision with the participation of the farmer groups. The Agricultural Development Program (ADP) offices will train the service providers.

*2.2.4 Project Beneficiaries*

The Project coverage is national. It include the 19 states that did not benefit from the ongoing IDA Fadama II Project and the Fadama II states that meet the eligibility criteria for continued participation, including: (i) satisfactory disbursement performance as indicated by at least 75 percent of the IDA credit disbursed by appraisal of the proposed Fadama III Project; (ii) demonstrated pro-poor impact from the resources disbursed directly through community subprojects (as indicated by impact evaluation and beneficiary assessment studies, including the mid-term review (MTR) of Fadama II Project); (iii) establishment and funding of the operations of the core teams of the State Fadama Coordination Offices (SFCOs) and (iii) commitment to the Project as demonstrated by payment of counterpart contributions towards the costs of the project preparation work and implementation. The Project covers up to 20 Local Government Authorities (LGAs) for the 19 states that did not benefit from the Fadama II operation. In the Fadama II states, up to ten 4 LGAs are added to the ten LGAs that have already benefited. The GEF support will focus especially but not exclusively on the states of Borno, Cross-River, and Osun, selected by the Government's newly founded National SLM Committee for their ecological and geographic diversity. The beneficiaries were assisted to organize themselves in economic interest groups,

 

named Fadama User Groups (FUGs), each having on average around 20 members (plus these individuals' households). The FUGs establish Fadama Community Associations (FCAs), which are apex organizations of 15 FUGs on average at the community level.

2.3 An Overview of Empirical Studies

The NFDP was introduced as a strategy to tackle rural development problems. There are quite a number of studies on rural development in general and fadama project in particular. These studies have been carried out in different parts of Nigeria and on different aspect of the impact analysis of the National Fadama Development Project. For example, Bajoga *et al* (2006) examined the impact of the project specifically on the living standard of dry season farmers who benefited from the fadama loans in Gombe state. The study revealed that the project did not make any impact on the beneficiaries of the fadama loan by increasing their income, improving the living standard of an access to more personal belongings.

Correspondingly, Adegbite *et al* (2008) carried out an assessment on the impact of fadama II on small-scale farmer's income in Ogun state with emphasis on the implication for agricultural financing in Nigeria. Using a multi-stage stratified random sampling in their study, their villages were selected each for both beneficiaries and non- beneficiaries in fadama endowed communities of Obafemi-Owade local government area of Ogun State. Evidence from their study also revealed no significant increased in the income of the fadama beneficiaries compared to non-beneficiaries of the fadama project in the study area.

In another study, Kudi *et al* (2008) examined the impact of the fadama II on poverty alleviation among farmers in Giwa local government area of Kaduna State, especially how the project has affected the socioeconomic status of the farmers and production efficiency. They found that there was a little improvement in the income of farmers. The implication is that better income give better purchasing power and hence the improvement of living standard.

Adeoye *et al* (2011) also undertook a study to examine rural infrastructure and profitability of farmers under fadama II project in Oyo state, using infrastructural index and gross margin. They compared the infrastructural development between fadama II local government areas and non- fadama II areas. Their findings revealed that, more than half of the villages in fadama II local government areas have more infrastructures than non fadama II villages. This implies that Fadama II project had contributed significantly to the development of infrastructures in Oyo state.

The cross sectional studies as shown above have exposed that societies are subject to a process of development, which is itself not arbitrary, but regular; and that no social fact can be really understood apart from its history.

## 3. Methodological Framework

### *3.1 The Study Area*

FCT comprises of 6 Area Councils. However, this study will be undertaken in Gwalgwalada Area Council of the FCT. The primary focus shall be the Fadama Development Areas (FDAs) in the Area Council. Figure1 is a map of FCT showing Gwagwalada 5 FCA's location.

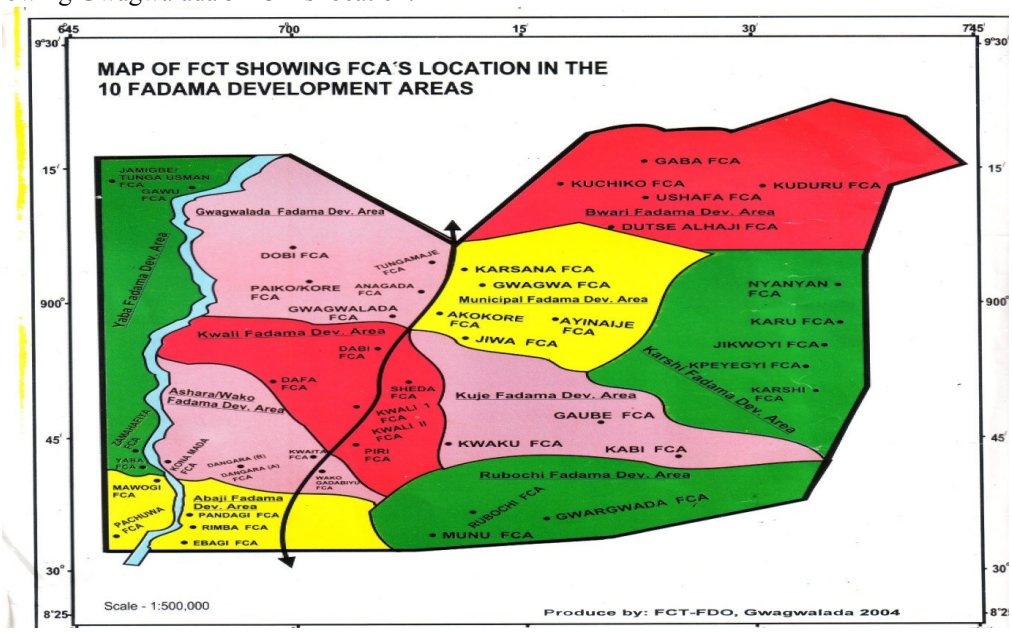


Figure 1: Map of FCT Showing FCA'ss Location in the 10 Fadama Development Areas

In Gwagwalada Area Council, the project was implemented in 5 selected Fadama Community Association

 

(FCA). This includes Anakada, Dobi, Gwagwalada, Paiko/Kore and Tungamaje FCAs, respectively. However, the participants shall be selected from these FCAs.

*3.2 Multi-stage Sample Selection*

In order to analyze the impact of Fadama III project on beneficiaries and the spillover of benefits to non-participants, a sample of respondents was selected from each of three strata: (i) Fadama III project participants; (ii) respondents who live in Fadama III project communities but did not participate in the project; and (iii) respondents who live in communities outside the Fadama III FCAs but with socio-economic and biophysical characteristics comparable to the Fadama III project communities and in the same state/neighbouring state. This stratification will capture the spillover effect of the project to non-participants and also provide a good control group for comparing participants and non-participants.

A total of 100 Fadama Users/Beneficiaries within Gwagawalada FDA FCT FADAMA III and 100 Fadama Users/Non-Beneficiaries outside FADAMA III FCAs in Gwagwalada Area Council were selected for the study.

A total of 14 potential FUGs were looked out for in the process of developing the study's sampling frame, namely: Crop Farmers, Fisher folks, Pastoralists, Hunters, Agro-Processors, Service Providers, The Elderly, Widows, PLWHA, Unemployed Youths, Agroforestry, Livestock Farmers, Physically Challenged and Gatherers. Selections of male and female respondents under each FUG were randomly selected, but ensuring no more than 5 females and 15 males per FCA.

The study also uses Focus Group Discussion and Key Informant Interview to corroborate the information from the 200 respondents. Generally, 200 respondents will be interviewed, 10 Focus Group Discussing (FGDs) will be held and 5 key informants interview.

*3.3 Technique of Data Analysis*

The technique of data analysis is based on descriptive analysis to be complemented by Statistical Package for Social Science (SPSS) version 16.0.1 computer software analysis for the data. Content analysis will be used to analyze information resulting from focus group discussions. This method of analysis has been defined as a systematic, replicable technique for compressing a large number of words in the form of text into a compressed content of categories based on explicit rules of coding (Stemler, 2001).

*3.4 Sampling design*

The sample size will be determined in Gwagwalada Area Council in relation to the population of the Council. However a purposeful sampling method will be adopted in the selection of sample in the Council. This method is statistically adequate since the population of citizens in this Council is relatively small compared to the population of FCT. The method will also permit the study to concentrate on the citizens who can supply useful information for the study.

## 4. Data Analysis

This section is divided into three sub-sections for clarity presentation. The first analyses the assessment of socio-economic activities by respondents. The second evaluates the impact of rural infrastructure in Fadama III activities. The third presents the constraints, and suggestions for improved farming.

4.1 Data Presentation

*4.1.1 Socio Economic Characteristics of Respondents*

Table 4.1 Age Group of Respondents

| | | Frequency | Percent |
|---|---|---|---|
| Valid | Up to 25 | 3 | 1.5 |
| | 26-35 | 16 | 8.0 |
| | 36-45 | 101 | 50.5 |
| | 46-55 | 50 | 25.0 |
| | 56-65 | 25 | 12.5 |
| | 66 and above | 5 | 2.5 |
| | Total | 200 | 100.0 |

Source: Field survey, 2013.

Majority of the respondents (50.5%) are between the age brackets of 36-45 years. Others include 46-55 years with 25%, 56-65 years with 12.5%, 26-35 years with 8.0%, and 66-above with 2.5%. The age group of up to 25 years respondents recorded the least with 1.5%.The trend in the age brackets is a good indicator that both fadama users and non-fadama users respondents are among adult members which could provide necessary information for the study.

 

Table 4.2: Clients Highest level of Formal Education

| | | Frequency | Percent |
|---|---|---|---|
| Valid | Primary | 25 | 17.5 |
| | Secondary | 35 | 22.5 |
| | NCE/OND | 35 | 12.5 |
| | Vocational/Technical | 20 | 10.0 |
| | Arabic | 10 | 5.0 |
| | Adult Education | 11 | 5.5 |
| | HND/BSc | 45 | 17.5 |
| | Post graduate | 5 | 2.5 |
| | None | 14 | 7.0 |
| | Total | 200 | 100.0 |
| Missing | System | 0 | .0 |
| Total | | 200 | 100.0 |

Source: Field survey, 2013.

It was indicated from the survey that secondary education recorded the highest level with 22.5%. Other formal education respondents include primary 17.5%, HND/BSc 17.5%, NCE/OND 12.5%, Vocational/Technical education 10%, Adult education 5.5%, and Arabic education 5%. 7% of the respondents have no formal education. The composition of the level of education is a good indicator for proper comprehension of activities of fadama and non-fadama project. The result suggested that majority of the respondents are literate and could enhance transformation and innovation. An educated person could be easily transformed because he/she is trainable. Illiteracy posses threat to poverty alleviation. In fact, it has the tendency to aggregate poverty.

Table4.3: Crops cultivated

| | | Fadama users | | Non-fadama users | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Frequency | Percent |
| Valid | Grains | 35 | 35.0 | 40 | 40.0 |
| | Vegetable | 49 | 49.0 | 35 | 35.0 |
| | Tuber | 16 | 16.0 | 25 | 25.0 |
| | Missing system | 0 | 0 | | 0 |
| | Total | 100 | 100.0 | 100 | 100.00 |

Source: Field survey, 2013.

The survey showed that majority of fadama users cultivates vegetable crops (Table 4.3). The survey revealed that there are 49% in this category. Others include grains with 35% and tuber with 16%. But the situation is different for non-fadama users. Majority of non-fadama users cultivate grains with 40%. Vegatable cultivation was 35% and tuber 25%, respectively. The result suggested that both fadama users and non fadama users cultivate different types of crops.

Table 4.4: Method of land acquisition

| | | Fadama users | | Non-fadama users | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Frequency | Percent |
| Valid | Lease | 27 | 27.0 | 21 | 21.0 |
| | Inheritance | 53 | 53.0 | 59 | 59 |
| | Purchase | 18 | 18.0 | 15 | 15.0 |
| | Gift | 2 | 2.0 | 5 | 5.0 |
| | Missing system | 0 | 0 | 0 | 0 |
| | Total | 100 | 100.0 | 100 | 100.00 |

Source: Field survey, 2013.

 

The results for both fadama users and non-fadama users followed the same pattern. Among fadama users for example, Inheritance recorded the highest with 53%, lease with 27%, purchases with 18% and through gift with 2%. In the case of non-fadama users, inheritance recorded the majority with 59%, leasing-21%, purchase-15% and gift-5%, respectively. The results suggest that about 80% of the lands are acquired through inheritance.

Table 4.5: Source of capital

| | | Fadama users | | Non-fadama users | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Frequency | Percent |
| Valid | Personal savings | 38 | 38.0 | 25 | 25.0 |
| | Commercial bank | 3 | 3.0 | 10 | 10.0 |
| | Cooperative society | 44 | 44.0 | 55 | 55.0 |
| | Relations and friends | 15 | 15.0 | 10 | 10.0 |
| | Missing system | 0 | 0 | | 0 |
| | Total | 100 | 100.0 | 100 | 100.00 |

Source: Field survey, 2013.

The Table 4.5 shows for fadama users that 44% of respondents sourced for capital through cooperative society. Others include personal savings-38%, relations and friends-15% and commercial banks-3%. The trend followed almost the similar pattern for non-fadama users. For example, 55% sources for fund through cooperative society, 25%-personal savings, 10%-relations and friends and 10%-commercial banks. The study implies that cooperative society is the most predominant source of capital for the respondents.

Table 4.6: Source of labour

| | | Fadama users | | Non-fadama users | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Frequency | Percent |
| Valid | Hired | 90 | 90.0 | 65 | 65.0 |
| | Family | 10 | 10.0 | 35 | 35.0 |
| | Missing system | 0 | 0 | | 0 |
| | Total | 100 | 100.0 | 100 | 100.00 |

Source: Field survey, 2013.

Table 4.6 shows that 90% of the respondents used hired labour to operate Fadama while 65% used hired labour to operate non-Fadama. Thus, these imply that the operation of the Fadama farmers in the area of study is largely commercially oriented.

Table 4.7: Method of land cultivation

| | | Fadama users | | Non-fadama users | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Frequency | Percent |
| Valid | Manual | 15 | 15.0 | 45 | 45.0 |
| | Mechanical | 80 | 80.0 | 48 | 48.0 |
| | Animal power | 5 | 5.0 | 7 | 7.0 |
| | Missing system | 0 | 0 | 0 | 0 |
| | Total | 100 | 100.0 | 100 | 100.00 |

Source: Field survey, 2013.

Table 4.7 revealed that 80% of the fadama users' respondents used mechanical means of land preparation while 48% shows for non-fadama users. This may suggest that land preparation via mechanical means ensures higher output in Fadama operation.

 

Table 4.8: Crop varieties planted

| | | Fadama users | | Non-fadama users | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Frequency | Percent |
| Valid | Imported seed | 85 | 85.0 | 55 | 55.0 |
| | Local seed | 15 | 15.0 | 45 | 45.0 |
| | Missing system | 0 | 0 | 0 | 0 |
| | Total | 100 | 100.0 | 100 | 100.00 |

Source: Field survey, 2013.

According to the result 85% of the fadama users' respondents planted improved seeds while 55% is for non-fadama users. More of non-fadama (45%) users planted local seeds than fadama users (15%). This implies that fadama users respondents in the study area have access to use of improved varieties of seeds.

Table 4.9: Source of planting material

| | | Fadama users | | Non-fadama users | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Frequency | Percent |
| Valid | Previous harvest | 9 | 9.0 | 35 | 35.0 |
| | ADP | 86 | 86.0 | 28 | 28.0 |
| | Market | 5 | 5.0 | 37 | 37.0 |
| | Missing system | 0 | 0 | 0 | 0 |
| | Total | 100 | 100.0 | 100 | 100.00 |

Source: Field survey, 2013.

Statistics in table 4.10 revealed that 86% of the fadama users' respondents got their planting materials from Government (Agricultural Development Project) while majority (37% and 35%) of non-fadama users got their own from the market and previous harvest. Since non-fadama users are not beneficiaries of the fadama project they might not have access to government opportunities in terms of planting materials. This implies that the major source of planting materials for Fadama farming in the study area is through the government.

Table 4.11: Access to implement

| | | Fadama users | | Non-fadama users | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Frequency | Percent |
| Valid | Hired | 55 | 55.0 | 85 | 85.0 |
| | Free | 45 | 45.0 | 15 | 15.0 |
| | Missing system | 0 | 0 | 0 | 0 |
| | Total | 100 | 100.0 | 100 | 100.00 |

Source: Field survey, 2013.

The statistics in table 4.11 opined that most (55%) fadama users hired implements while 45% have access to free implement. The statistics is encouraging than the non-fadama users. For example, 85% of the respondents made use of hired implements while only 15% are free. The implication is that non-fadama users don't have enough capital to purchase farm implements instead they continue to hire.

Table 4.12: Availability of input (fertiliser)

| | | Fadama users | | Non-fadama users | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Frequency | Percent |
| Valid | Availability | 95 | 95.0 | 45 | 45.0 |
| | Non-availability | 05 | 5.0 | 55 | 55.0 |
| | Missing system | 0 | 0 | 0 | 0 |
| | Total | 100 | 100.0 | 100 | 100.00 |

Source: Field survey, 2013.

 

More so, 95% of the fadama users' respondents made use of available input of fertilizer while only 45% is for non-fadama respondents (Table 4.12). The implication of this is that majority of the fadama users have access to fertilizer than the non-fadama users.

Table 4.13: Availability of pesticides

| | | Fadama users | | Non-fadama users | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Frequency | Percent |
| Valid | Availability | 57 | 57.0 | 35 | 35.0 |
| | Non-availability | 43 | 43.0 | 65 | 65.0 |
| | Missing system | 0 | 0 | 0 | 0 |
| | Total | 100 | 100.0 | 100 | 100.00 |

Source: Field survey, 2013.

Also, 57% of the fadama users' respondents made use of available input of pesticides while 35% is for non-fadama users (see Table 4.13). The result suggests the availability of pesticides to fadama users than non-fadama users.

*4.1.2 Impact of Fadama III on Income and Wealth*

The occupation of the respondents in the FCT has been categorized by the use of Economic Interest Groups (EIG). However, the male respondents' occupation are in: crop farming, livestock, hunting and fishing while processing, gathering and marketing are major occupation of their female counterparts.

Fadama III focus more on agricultural based sub-projects because the major occupation of the people is in agriculture. This is supported by the fact that Fadama III is a Community Driven Development (CDD) project. The project supported both agricultural and non-farm activities and the demand of the households. Both the agricultural and non-farm activities contribute to the income of the beneficiaries which happens to be one of the objectives of the Fadama III project.

Table 4.14: Value of Productive Assets before and after the Fadama III Project (In Naira)

| | **1 Before** | **1 After** | **Paired test of change in asset value** |
|---|---|---|---|
| Fadama Beneficiaries | 81240.97 (207672.7) | 84957.5 (832367.1) | |
| Non Fadama Within | 23935.7 (29497.55) | 27923.58 (42309.69) | |
| Non Fadama Outside | 49937.96 (91388.92) | 13989.7 (247519.7) | a, b |

Source: Field survey, 2013.

1. *Before project is a period before 2010 and after project is 2011-2013 the survey was conducted*

*Figures in parenthesis are standard deviations*

*a = Significant difference in difference between Fadama and non-Fadama within at 5%*

*b = Significant difference in difference between Fadama and non-Fadama outside at 5%.*

From Table 4.14, FCT Fadama III project has succeeded in increasing the value of productive assets in an attempt to increase the income of the beneficiaries. This is because the value had increased by about 10 times what it was before the project for the Fadama beneficiaries. This is an indication that the issue of productive assets before the Fadama III project was very low compared with what is now on ground just three years after the take-off of the project.

Also from Table 4.14, there was a slight increase with non-Fadama with the Fadama areas which is likely to be due to spill-over effects of Fadama III project.

There is a large increase (from only ₦81, 240.97 to ₦84, 9577.5) in productive assets among Fadama beneficiaries. This very large increase might be due to the fact that the ownership of such assets was almost non-existent or very limited before the commencement of Fadama III project. The increase in value of jointly owned productive assets includes the value of the cash transfer from the project to the beneficiaries.

When compared to all non–beneficiaries, and non-beneficiaries within and outside communities, the value of privately owned productive assets of Fadama III beneficiaries increased significantly due to participation in the project. It could be noted that even though Fadama III did not interfere with the ownership of the productive assets. This is probably responsible for the significant (5% level) increase in the value of productive assets by the beneficiaries. It could also be as a result of the fact that FUG members were required to buy complementary

 

inputs to support the jointly owned productive assets.

Table 4.15: Net income (naira) before and after the Fadama III Project (in Naira)

| | **1 Before Project** | **1 After Project** | **Paired test of change** |
|---|---|---|---|
| Fadama | 198261.5 (263643.1) | 170180.4 (260437.2) | a |
| Non Fadama Within | 206998.4 (281913.4) | 148143.8 (32733.6) | |
| Non Fadama Outside | 114740.6 (218942.3) | 50466.73 (246703.6) | |

Source: Field survey, 2013.

1. *Before project is a period before 2010 and after project is 2011-2013*
   *Figures in parenthesis are standard deviations.*
   *a= Significant difference in difference between Fadama and non-Fadama within at 5%.*
   *b = Significant difference in difference between Fadama and non-Fadama outside at5%.*

The acquisition of productive assets is expected to contribute significantly to increased income. However, from Table 4.15, there is a reduction in income after the project among the Fadama III project beneficiaries. The same was reflected in the other 2 categories, that is, non-Fadama within and non-Fadama outside from Table 4.15, there is a significant impact of the productive assets on the income between the Fadama beneficiaries and non-Fadama within at 5% level of significant. The non significant impact of Fadama III on income among non beneficiaries outside could be due to a relative distant of the choice of respondents among the group (a distant of 10-15 km radius).

The reduction in income despite the acquisition of productive assets could be due to constraints encountered by the farmers. Also, some of the beneficiaries are just acquiring the productive assets and the payment of the beneficiary contribution (30%) for pilot asset acquisition could have crowded out investment in short-term activities that could have increase income. It is expected that the increase in income will come significantly after starting to benefit from their investment in productive assets. The impacts of the projects are not fully captured by this study since the study centered on selected projects in FCT, and hence does not capture the lagged impacts, especially those related to productive assets and rural infrastructure. However, the study could serve as a baseline data for the conduct of follow-up studies to capture the lagged impacts of the project.

4.2 Constraints and suggestions for improved farming

Table 4.16: Challenges encountered in farming

| | | Fadama users | | Non-fadama users | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Frequency | Percent |
| Valid | Inadequacy of equipment | 11 | 11.0 | 15 | 15.0 |
| | Poor price of farm product | 3 | 3.0 | 5 | 5.0 |
| | Unavailability of fertilizer | 4 | 4.0 | 15 | 15.0 |
| | Unavailability of improved seed | 8 | 8.0 | 5 | 5.0 |
| | Inadequacy of extension Agents | 10 | 10.0 | 7 | 7.0 |
| | Non implementation of research recommendation | 13 | 13.0 | 5 | 5.0 |
| | Inadequacy capital | 10 | 10.0 | 13 | 13.0 |
| | Inadequacy of storage facilities | 11 | 11.0 | 10 | 10.0 |
| | High cost transportation | 13 | 13.0 | 14 | 14.0 |
| | Inadequate access agric land | 11 | 11.0 | 7 | 7.0 |
| | Unavailability of credit facilities | 3 | 3.0 | 2 | 2.0 |
| | Inadequate of market | 3 | 3.0 | 2 | 2.0 |
| | Total | 100 | 100.0 | 100 | 100.0 |

Source: Field survey, 2013.

Evidence from the above revealed that all (100%) of the respondents fadama and non-fadama farmers had one constraints or the other (Table 4.16). This may imply that more are still needed to be done in order to help the

 

fadama farmers to overcome source problems that are associated with fadama farming.

Table 4.17: Suggestions for improved farming

| | | Fadama users | | Non-fadama users | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Frequency | Percent |
| Valid | New technology | 29 | 29.0 | 9 | 9.0 |
| | Input supply | 21 | 21.0 | 29 | 29.0 |
| | Adequate funding | 31 | 31.0 | 28 | 28.0 |
| | Provision of infrastructure | 19 | 19.0 | 7 | 7.0 |
| | Missing system | 0 | 0 | 27 | 27.0 |
| | Total | 100 | 100.0 | 100 | 100.0 |

Source: Field survey 2013.

The need for improved farming to facilitate fadama coordination project in the FCT cannot be over emphasised (Table 4.17). Statistics investigated for fadama users that 29% suggested new technology, 31% suggested adequate funding, 21% suggested improved input supply while, 19% suggested provision of infrastructure.

## 5. Summary of Major Findings, Recommendation, and Conclusion

### *5.1 Summary of Major Findings*

In the first year of operation, FCT – Fadama III project made considerable impacts on access to markets, assets acquisition and on household income. The statistical analysis carried out found that the Fadama III project has greatly reduced beneficiaries' distance and travel time to the nearest community and there has been a great reduction in waiting time for transport and transport fares, relative to households in non-Fadama Coordination areas. It was also evident that household access to productive assets has increased especially for the poorest households, largely because of the subsidy given to finance acquisition of such assets. In the first year, household income in the study area did not improve because most of the assets are just been acquired and a lot of investment is still on-going. However, there will be cash-in-flow in subsequent years that will be greater than cash-out –flow to give a positive income balance. The income impacts of the project are likely to be higher in the future since the beneficiaries acquired productive assets that are likely to increase their income significantly.

The impact of FCT Fadama III project on productive asset acquisition is large. This is due mainly to cash transfer from the matching funds that the project provides to Fadama user groups. The large cash transfer might be an important factor that could impede the replication of this success story. Furthermore, it is necessary to examine the issues that could lead to scaling up the success story. These issues are better targeting of the poor and vulnerable, funding sustainable methods of promoting development of rural financial users to manage the productive assets efficiently. These issues are interrelated and therefore need to be considered simultaneously.

### *5.2 Recommendation*

The following recommendation will be useful:

- Strategies such as rotating saving and credit associations that can help the poor to access Productive assets should be promoted.
- The low capacity of the poor and the vulnerable in managing productive assets efficiently could be addressed through training and development of complementary services.
- There is also a need to assess the productive assets that the beneficiaries have demanded and the local capacity to service and provide maintenance services to these productive assets, and how to invest in improving this capacity.
- The Federal Government through the National Assembly should increase the pulse of Land reform in the country.
- All farmers should be given access to credit for farm expansion and purchase of farm input. This is to encourage the use of farm inputs as recommended by research.
- Farmers should embrace bulk purchase of farm inputs in order to reduce cost
- The Fadama project should assist the farmer to assess quality seed.

### *5.3 Conclusion*

For meaningful and reliable conclusions to be drawn it is possible that the poor found it difficult in the short time project implementation to adjust because they have to borrow money at high premiums. This, however, raises the necessity to help the poor to access affordable credit facilities. The beneficiary contribution could be reduced for the benefit of this people. However, it may not be sustained in the long-term. The solution for the

 

failure of the poor to pay for productive assets is to have affordable rural credit services. There is the need to involve the credit service providers by helping them to give low interest rate loans to the poor.

Generally, the Fadama III project has achieved its goal of increasing the incomes of the beneficiaries in the period of study. The project has also succeeded in targeting the poor and vulnerable in its productive-asset component, even though that did not appear to increase significantly short-term household incomes among the poorest asset tercile. The unique feature that could have contributed to the significant impact of the project in a short time is its broad-based approach, which addresses the major constraints limiting the success of CDD projects that address only one or two constraints. This has implications on planning poverty reduction efforts in FCT. Given that the poor face numerous constraints, a CDD project that simultaneously addresses many constraints will likely build synergies that will lead to larger impacts than will a project that addresses only one or two constraints. This suggests the need for the government and donors to pool resources and initiate multipronged CDD projects rather than many isolated projects.

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