

Evaluation of Second National Fadama Development Project (NFDP II) in Promoting Rice Value Chain in Adamawa State, Nigeria

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Abstract

The World Bank and African Development Bank (ADB) implemented the Second National Fadama Development Project (NFDP II) during the year 2005- 2010 in eighteen (18) States of Nigeria. Twelve (12) States including Adamawa State were supported by the World Bank while the remaining six (6) States by the ADB. This study evaluated the performance of rice chain via comparison of Fadama II participating and Non-Fadama II Rice Actors in the study area, with a view to ascertaining and validating Fadama documents which reported success of the project. Primary data were collected through the use of questionnaire administered to a total of (346) randomly selected respondents comprising 202 Fadama II and 144 Non- Fadama II Actors generated from a list collected from Fadama II and Rice farmers Association, respectively. Socio-economic analysis of the respondents showed that Fadama II Rice Actors were better educated, younger and more productive than the Non-Fadama II Rice Actors. Profitability analysis also revealed that Fadama II Rice Actors were making more profit than the Non-Fadama II Rice Actors. It is concluded that, the World Bank Assisted Second National Fadama Development Project had impacted positively on Rice value chain and hence Agricultural Development in Adamawa State. It is therefore, recommended that, similar projects should be put in place by various International Organisations and Agencies in Nigeria.

Keywords: Analysis; Fadama; Rice, Chain; Adamawa State

Introduction

Rice quality issues is very important among consumers generally the world over. Nigeria is one of the major consumers and importers of rice in the world, spending a lot of money to import large quantities of the commodity. Despite favourable ecologies (land, water and temperature), rice production and productivity remain very low while rice output remain unattractive due to poor quality. In an attempt to make domestic rice competitive and appealing to consumers, the federal government in Nigeria had adopted many policies and implemented programmes, however, domestic rice quantity and quality is still a concern and imported rice is still floating markets. This led the government to reconsider banning rice importation. The unanswered question remain, can the domestic rice meet the demand- supply gap of Nigerians? . The World Conference on Agrarian Reform and Rural Development (WCARRD) held in 1979 agreed on primary objective of Agricultural and Rural Development Projects to be eradication of poverty, hunger, and malnutrition. Also, essential contributory objectives include growth with equity, national self- reliance, ecological harmony and the conservation of natural resources (Arene, 2016).

Different countries of the world had executed several projects targeted at improving agricultural production, and provision of social infrastructure in the rural areas with their performances not clearly understood (UN- ACC, 1994).

Accordingly, the World Bank and the ADB between 2005 – 2010 had supported the (NFDP II) in Nigeria with US\$ 100 million and US\$ 30 million respectively. Out of the 18 States that participated in Fadama II project, twelve (12) of them were assisted by the World Bank and include Adamawa, Bauchi, Gombe, Federal Capital Territory (FCT), Imo, Kaduna, Kebbi, Lagos, Niger, Ogun, Oyo and Taraba (NFDO, 2007), while the remaining six (6) by the ADB. Fadama II was designed to operate for six years (2004- 2010) with a goal of contributing to poverty reduction in Nigeria. However, actual implementation began in September, 2005.

NFDP II was targeted as a follow-up to Fadama I that was adjudged successful. Its approach was Community Driven Development (CDD) with emphasis on social inclusiveness and empowerment of the rural people to take charge of their development agenda. The main objective of the

project was to sustainably increase the incomes of the Fadama users through expansion of Farm and Non- Farm activities with high value added output (PCU- NFDO, 2005). However, there is no clear empirical evidences/ understanding on how the project perform which form the main thrust of this study.

Rice value chain comprises input suppliers, producers, processors, traders/marketers and consumers (Rujis *et al.*, 2001). The ban imposed in Nigeria on rice importation in 1985 was due to the colossal amount of money being expended to import large quantities of the commodity resulting from high demand and low domestic supply. The policy objectives were to encourage domestic production and since then available statistics have indicated improvement in the hectares and quantity of rice produced domestically. However, even though the quantity was not enough to meet domestic requirement but have encouraged proliferations of more rice farmers, processors, produce and inputs marketers in the country, and Adamawa State in particular. Therefore, it provided employment opportunities to many stakeholders along the rice value chain and can still provide more opportunities through proper planning and coordination. Accordingly, any meaningful approach to improving domestic rice production should consider the entire value chain. In line with this development, this research was envisaged in order to evaluate the performance of rice value chain under the (NFDP II) in Adamawa State, Nigeria, with the hope of understanding how far the project impacted or achieved for better planning.

The main objective of the study was to compare the performances of Fadama II and non- Fadama II rice actors in the study area. Specific objective include to: describe the socio-economic characteristics of Fadama II and non- Fadama II rice actors in the study area; and estimate cost and returns of rice actors under Fadama II and non- Fadama II in the study area.

Metarials and Methods

The study area

The study was conducted in Adamawa State (latitudes 8° and 11° North and longitudes 11.5° and 13.75° East) with land area of 39,742.12 sq. km representing 4.4 percent of the land area in Nigeria ((Kormawa *et al.*, 2002; Adamawa State Diary, 2005). Further, the State had a population of 3,178,950 according to National Population Census

(NPC, 2006) of this population 80 % reside in rural areas and engage in agricultural production). The state is divided into 21 Local Government Areas.

The State has about 4.2 million hectares of land out of which 2.9 million are arable but only 0.232 million hectares (i.e. 8%) were under cultivation annually. The mean farm size per farming household in 2001 was 0.73 hectare which indicate that majority were small scale farmers. However, there are few medium and large scale farmers with farm holdings exceeding 5 hectares). The rainy season commences in April and ends in October. Average rainfall for the State is 700mm in the northern parts and 1600mm in the southern parts which is a good range for rice cultivation (Adebayo, 1999).

Sampling technique and sample size

Multi-stage Sampling Technique was used. First stage involved purposive selection of the (10)(L.G.As) that participated in Fadama II project in the State which comprised Mubi- North, Michika, Gombi, Song, Fufore, Yola- South, Yola- North, Lamorde, Guyuk, and Ganye.

Second stage involved purposive selection of all the Rice Fadama User Groups (FUGs) and their members including Input sellers (68), Rice producers (120), Mill operators (96), and Rice marketers (120) which gave a total of (404) that constituted the target population.

Third stage involved random selection of (50%) of each of the category of the target population that is Input sellers 48, Rice producer's 60, Mill operators 48, and Rice marketers 60 which gave a total of (202) sampled respondents. For the Non-Fadama II participants (the list of rice interest groups were collected from their associations) within the 10 Fadama II participating LGAs to maintain homogenous characteristics, and this includes; Input sellers 60, Rice producers 102, Mill operators 66 and Rice marketers 60 which gave a total population of (288). Fifty percent (50 %) of the population from each of the rice economic interest groups were randomly selected and includes Input sellers 30, Rice producers 51, Mill operators 33 and Rice marketers 30 which gave a total of 114 sampled respondents.

Data collection procedure

Data for this study were mainly primary collected using structured questionnaire with the help of trained enumerators. The data were collected from the respondents covering the period, January 2006 – October, 2006, and from January, 2016 – October, 2016.

Data Analysis**Socio – economic analysis**

Frequency, percentage and mean distribution were used to describe the socio-economic characteristics of Fadama II and Non- Fadama II Rice Actors in the study area.

Profitability analysis

Net Business Income (NBI) analysis was used to measure objective 2 of the study. Mathematically, the NBI is expressed as follows:

$$\text{NBI} = \text{TR} - \text{TC} \quad (1)$$

Where:

NBI = Net Business Income (N);

TR = Total Revenue (N); and

TC = Total Cost (N).

Results and Discussions**Socio- economic characteristics****Gender of the respondents**

Results in table 1 showed that all (100%) of the Fadama II and Non- Fadama II inputs sellers were males. A total (90%) and (72.7%) of Fadama II and non- Fadama II the rice producers were females respectively. Also, all (100%) of the Fadama II and Non- Fadama II mill operators were males. The result further revealed that majority (81.7%) and (83.3%) of the Fadama II and non- Fadama II rice marketers were females respectively. The result implied that females were engaged only on rice production and marketing, while rice milling operation and inputs selling were entirely male activities. This information might be useful to policy-makers in formulating policies and taking decision in project/programme implementation.

Age distribution of the respondents

Results in table 1 revealed that 88.2% and 36.7% of the Fadama II and Non- Fadama II inputs sellers were within the age brackets of 21-30 years

respectively while 78.3% and 36.5% of the Fadama II and Non- Fadama II rice producers were also within the age limit of 21 – 30 years respectively. It also revealed that 52.1% and 40 % of the mill operators under Fadama II and Non – Fadama II were within the age limit of 21 – 30 years respectively. Majority (75%) and 50% of the rice marketers under Fadama II and Non- Fadama II were within the age bracket of 21- 30 years, respectively. The result is contrary to the findings of Yusuf *et al.* (2009) in Zamfara State who found that 37% of the rice marketers were within age brackets of 35 and 36 years, while those youths between 20 - 30 years constituted the minority. It clearly shows that all the actors under the rice supply chain were at their active and productive age. Ogundele and Okoruwa (2006) had earlier reported that, as age of actors increase, productivity will continue to fall owing to declining strength. Hence, they suggested that the occupation needed injection of young able people.

Marital status of the respondents

Results on the marital status of the respondents showed that 91.2% and 73.3% of the Fadama II and Non- Fadama II input- sellers were married respectively. The result also shows that 78.3% of the Fadama II rice producers were married, while 42.4% of the Non- Fadama II were single.

For the mill operators, it showed that 75% and 56.7% of Fadama II and Non – Fadama II were married respectively. The result further reveals that 65% and 63.3% of the Fadama II and non- Fadama II rice marketers were married respectively. This implied that most of the actors were responsible since they were married and might have other members to care in terms feeding and other responsibility. This could mean that any efforts towards improving their business, they may take it serious.

Family size of the respondents

Result in table 1 on family size of the respondent showed that both Fadama II and Non- Fadama II Rice Actors had an average of six (6) members in their households respectively. The result implied that respondents need to hire labour because family labor constitutes the bulk labour in small- scale farm operations in Nigeria since they don't have large members in their households, more particularly when considering expanding the business. Ogundele

and okoruwa (2006) supported this by reporting that labour constituted the most important input into small-holder Agricultural production in Nigeria. They further asserted that, labour input can be sourced from within the family (Family Labour), from commercial pool in the labor market (Hired Labour), and from among other farmers (Group Labour). However, family labor constituted the major proportion of the aggregate labor use in Nigerian Agriculture. The report also lamented that, the amount of man -days of family labour that can be engaged by rice farmers will depend on the household size, structure of the household and primary occupation of the household members.

The foregoing has clearly indicated the importance of family size. Large family could mean availability of labour for economic activities. It could also mean that, the income generation will be high; hence, there is tendency for savings and investment in better facilities which can improve the quality of the products and income of the actors. However, on one side, large family could also mean so many mouths to feed and many people to take care of.

Educational status of the respondents

Result on the educational background of the respondents in table 1 showed that 70.6% and 47.7% of Fadama II inputs sellers and Producers had primary education respectively while 46.7% and 48.5% of Non- Fadama II input – sellers and producers respectively did not have formal education. For the mill operators, 52.1% and 40% under Fadama II and Non – Fadama II had primary education, respectively.

Similarly, majority (66.7%) and 56.7% of the Fadama II and Non- Fadama II Rice Marketers had primary education respectively. The results reveals that Fadama II Rice Actors were better educated than the Non- Fadama II Rice Actors. However, both cases had low educational status. This agrees with the National Rice Development Strategy NRDS (2006) which reported that low level of education and other players in the rice value chain impacts negatively on local rice production. Ogundele and Okoruwa (2006) also reported that, education plays a significant role in skills acquisition and technology transfer. It enhances technology adoption and the ability of farmers to plan and take risk. Actors with higher levels of education are likely to be more efficient in the use

of inputs and better risks bearing than their counterparts with little or no education. Therefore, this low educational background of the actors under rice supply chain in the study area is a serious problem and deserves immediate attention and intervention.

Membership of co-operative society

Results on the membership of cooperative societies in table 1 showed that all (100%) of the input-sellers, Rice producers, Mill Operators and Rice Marketers under Fadama II belong to Co-operative Societies, while only (53.5 %) of the actors under Non- Fadama II belongs to Co-operative Societies. The reason why all Fadama II rice actors belongs to co-operative group is that, it was mandatory to register as members of co-operative under a particular Economic Interest Group (EIG) before participating in Fadama II project.

The results implies that rice actors under Fadama II Project were more co-operated than the Non – Fadama II Rice Actors. And by extension, since co-operative serve as a prelude to capital mobilisation and business formation, it is a powerful tool for empowerment and poverty alleviation. This could mean that Fadama II Rice Actors might have been alleviated from poverty and therefore, better off than Non- Fadama II Rice Actors. Also, it might mean that they were more exposed and had better opportunities to pursue their common social, as well as economic goals within and outside the programme (such as assistance from local, national and international agencies).

Agri-business experience of respondents

Results on years of experience of Fadama II and Non- Fadama II Rice Actors in table 1 showed that 47.1% of the input – sellers under Fadama II had less than five years' experience, while 53.3% of the Input – sellers under Non – Fadama II had five to ten years' experience on the enterprise. It reveals that 36.7% and 36.4% of the farmers under Fadama II and Non- Fadama II had put 11- 20 years on farming. Also, 43.8% of the Fadama II mill operators and 53.3% of the Non-Fadama II mill operators had put in less than five to ten years in milling business respectively. Further, it shows that 46.7% of the rice marketers under Fadama II have put 5- 10 years on the business while 50% of the rice marketers under Non – Fadama II had less than five years' experience.

This result implied that Non- Fadama II rice actors had put more years in the business than the Fadama II Actors, however, putting many years in the business might not be the only determinant of efficiency; other factors might play a role. Ogundele and Okoruwa (2006) reported that, experience is the best teacher. Thus, the longer a person stays on a job, the more likely he/she becomes an expert. Further, they asserted that Agri-business involves a lot of risk and uncertainties; hence to be competent enough to handle the vagaries associated with Agri-business, actors must have stayed on the farm for quite some time. Since in both cases, they had moderate years of experience on the business, with more emphasis on training, their know-how, skills and capabilities

can be enhanced and promoted for better performance.

Consequently this result also implied that, rice milling is an infant industry in the area since majority (78%) and 70% of the millers under Fadama II and Non- Fadama II had less than twenty years' experience respectively. This showed that rice milling business received a boost only after the ban of rice import imposed by the Federal Government of Nigeria in 1985, that is nearly three decades ago. This means that, the ban on rice imports has increased rice output, productivity and post-harvest activities (milling and trading) in the area.

Table 1: Socio – economic characteristics of Fadama II and non – Fadama II rice actors

| | Fadama II | | Non- FadamaII | |
|----------|----------------|------------|---------------|------------|
| | Frequency | Percentage | Frequency | Percentage |
| Gender | | | | |
| | Input seller | | | |
| Male | 34 | 100 | 30 | 100 |
| Ttal | 34 | 100 | 30 | 100 |
| | Rice producer | | | |
| Male | 54 | 90 | 24 | 72.7 |
| Female | 6 | 10 | 9 | 27.3 |
| Total | 60 | 100 | 33 | 100 |
| | Mill operator | | | |
| Male | 48 | 100 | 30 | 100 |
| Total | 48 | 100 | 30 | 100 |
| | Rice marketers | | | |
| Male | 11 | 18.3 | 5 | 16.6 |
| Female | 49 | 81.7 | 25 | 83.3 |
| Total | 60 | 100 | 30 | 100 |
| Age | | | | |
| | Input seller | | | |
| 11- 20 | - | - | 11 | 36.7 |
| 21- 30 | 30 | 88.2 | 11 | 36.7 |
| 31 -40 | 2 | 5.9 | 6 | 20.0 |
| Above 40 | 2 | 5.9 | 2 | 6.7 |
| Total | 34 | 100 | 39 | 100 |
| Mean | 25 | | 28 | |
| | Rice producer | | | |
| 11- 20 | 1 | 1.7 | - | = |
| 21- 30 | 47 | 78.3 | 9 | 27.3 |
| 31 -40 | 9 | 15 | 12 | 36.4 |
| Above 40 | 3 | 5.0 | 33 | 100 |
| Total | 60 | 100 | 33 | 100 |
| Mean | 26 | | 27 | |
| | Mill perator | | | |
| 11- 20 | 1 | 2.1 | - | - |
| 21- 30 | 25 | 52.1 | 9 | 30 |

| | | | | |
|----------------|----------------|------|----|------|
| 31 -40 | 19 | 39.6 | 12 | 40 |
| Above 40 | 3 | 6.3 | 9 | 30 |
| Total | 48 | 100 | 30 | 100 |
| Mean | 25 | | 29 | |
| | Rice marketer | | | |
| 11- 20 | 6 | 10 | 2 | 6.7 |
| 21- 30 | 45 | 75 | 15 | 50 |
| 31 -40 | 8 | 13.3 | 10 | 33.3 |
| Above 40 | 1 | 1.7 | 3 | 10 |
| Total | 60 | 100 | 30 | 100 |
| Mean | 28 | | 30 | |
| Marital status | | | | |
| | Input sellers | | | |
| Married | 31 | 91.2 | 22 | 73.3 |
| Single | 3 | 8.8 | 8 | 26.7 |
| Total | 34 | 100 | 30 | 100 |
| | Rice producers | | | |
| Married | 47 | 78.3 | 13 | 39.4 |
| Single | 9 | 15.0 | 14 | 42.4 |
| Divorce | 2 | 3.3 | 4 | 12.1 |
| Widow | 2 | 3.3 | 2 | 6.1 |
| Total | 60 | 100 | 3 | 1 |
| | Mill operators | | | |
| Married | 36 | 75 | 17 | 56.7 |
| Single | 12 | 25 | 11 | 36.7 |
| Divorce | - | - | 1 | 3.3 |
| Window | - | - | 1 | 3.3 |
| Total | 48 | 100 | 30 | 100 |
| | Rice marketers | | | |
| Married | 39 | 65 | 19 | 63.3 |
| Single | 11 | 18.3 | 8 | 26.7 |
| Divorce | 6 | 10 | 2 | 6.7 |
| Widow | 4 | 6.7 | 1 | 3.3 |
| Total | 60 | 100 | 30 | 100 |
| Family size | Input sellers | | | |

Source:Survey Data, 2016

Profitability Analysis

Net Marketing Income for Fadama II and Non-Fadama II Input Sellers

Table 2 presents results on NBI of Fadama II and Non- Fadama II inputs marketers. It shows that Fadama II input marketers were making an average revenue and profit margin of N1,088,235.30 and N402,941.18 respectively while the non- Fadama II rice marketers were making an average revenue and profit margin of N911,333.34 and 224,666.66, respectively.

The results implies that Fadama II inputs marketers were generating more money as returns than their Non- Fadama II input marketers. This could be

attributed to improvement in marketing infrastructures, training and advices received by the Fadama II input marketers. Improvements in infrastructures were in areas of market shades, stores, and transport facilities. These offered the potentials of cutting down expenses significantly. The variable costs include the followings: transportation cost, communication, loading and off- loading, security, market assistants, tax and revenues. The fixed cost includes depreciation on buildings, stores and vehicles.

Net Production Income for Fadama II and Non-Fadama II Rice Producers

Table 2 presents results on Net Production Income

for Fadama II and Non- Fadama II rice producers. It reveal that Fadama II rice producers were making an average revenue and profit margin of N846,681.60 and N270,002.10, respectively, while the Non-Fadama II Rice Producers were making an average revenue and profit margin of N681,818.18 and N209,090.90, respectively. The above results implies that Fadama II rice producers were performing better than the Non- Fadama II rice producers. This could be as a result of improved investment in farm assets, access to genuine farm inputs, and capacity building training received by the Fadama II Rice Actors which translate to increased output and income.

The variable cost include costs of the followings; seed, fertiliser, herbicides, labour, transportation. Fixed costs includes; depreciation on Land, buildings and machinery. The Annual income from Fadama II and Non- Fadama II Rice Producers is however lower than the findings of Agom *et al.*,(2009) who found that half (50%) of upland rice farmers in Imo State earned an annual income of N201,000 and above, with an annual mean of N205, 021.43 within the research period. This suggested that there is still need for improvement among the Fadama II and Non- Fadama II Rice Farmers. Idowu *et al.*, (2009) in a study on profitability level of upland rice production in Ilaro Agricultural Zone of Ogun State, Nigeria, used budgetary techniques (cost and returns) to estimate the profit of rice production. They reported a gross margin and net income that accrued to each upland rice farmer per production season on the average to be N194, 094.88 and N185, 409.53, respectively. This amount was also higher than what was obtained both under Fadama II and Non – Fadama II rice production in Adamawa State.

Net Production Income for Fadama II And Non-Fadama II Rice Mill Operators

Table 2 presents results of Net Milling Income of Fadama II and Non- Fadama II Rice Mill Operators.

It reveals that Fadama II rice mill operators were making an average revenue and profit margin of N352,959.98 and N106,959.98 ,respectively, while the Non- Fadama II Rice Mill Operators were making an average returns and gross margin of N300,800.60 and N76,400.60, respectively.

The results above implies that Rice Mill Operators under Fadama II had more returns than the Non – Fadama II. Similarly, the profit of N53, 479.99 for the Fadama II Mill Operators was greater than that of Non- Fadama II Mill Operators which stood at N36, 350.00. The reason for this difference could be explained as a result of increased / expansion in milling facilities and improved milling capacity acquired through capacity training offered by the Fadama II project. The variable costs include, cost of diesel/electricity, labour, servicing, tax and revenue, rent and security. The fixed costs were depreciation on building and machine.

Net Marketing Income for Fadama II and Non-Fadama II Rice Marketers

Table 2 presents results on Net marketing Income of Fadama II and non- Fadama II rice marketers. It reveals that Fadama II rice marketers were making an average revenue and profit margin of N352, 759.98 and N62, 609.98, respectively, while the non- Fadama II rice mill operators were making an average revenue and profit margin of N290, 500.50 and N45, 500.5, respectively. The above results implied that Fadama II rice marketers had an average returns and gross margin that were greater than the Non- Fadama II Rice Marketers. This could be as results of improvement in parboiling skills and marketing strategies. The variable costs include cost of purchasing paddy, milling cost, parboiling cost, transportation and communication, loading and off-loading, tax and revenue, rent and security. The fixed cost include depreciation on items like drums, bowls, buckets wheel barrows, vehicles and trampoline.

Table 2: Costs and Returns (Net Business Income) for Fadama II and Non- Fadama II Rice Actors

| | Fadama II (n=34) Average ₦ | Non – Fadama II (n=30) Average ₦ |
|-----------------------|--------------------------------------|--|
| Input- Seller | | |
| Revenue | 1,088, 235.30 | 911,333.34 |
| Cost | 685,294.12 | 686,666.68 |
| Profit | 402,941.18 | 224, 666.66 |
| Rice Producers | | |
| Revenue | 846,681.60 | 681,818.18 |
| Cost | 576,679.50 | 472,727.28 |
| Profit | 270,002.10 | 209,090.90 |
| Mill Operators | | |
| Revenue | 352,959.98 | 300,800.60 |
| Cost | 246,000.00 | 224,400.50 |
| Profit | 106,959.98 | 6,400.10 |
| Rice Marketers | | |
| Revenue | 352,759.98 | 290,500.50 |
| Cost | 290,150.00 | 245,000.50 |
| Profit | 62,609.98 | 45,500.50 |

Source: Survey Data, 2016.

Capital/Assets**Net- capital for Fadama II and non- Fadama II rice actors**

Table 3 presents results on the Net- capital of Fadama II and Non- Fadama II Rice Actors. It shows that Fadama II input sellers at inception of the project in 2006 had a mean capital of ₦1, 277,353 but this amount increased by 46% to a mean of ₦1, 877,353 in 2016. While the Non- Fadama II input sellers had a mean of 663,333.3 in 2006, the mean increased by 75% to ₦1, 163, 333.3. This revealed a good increase.

The result further indicated that, rice producers under Fadama II in 2005 had a mean capital of ₦100, 566.7, and in 2016, the mean capital had increased to ₦250, 566 representing 149% increase.

Similarly, Non- Fadama II rice producers had a mean of ₦83, 030.30 in 2005, the amount increased by 96.4% to ₦163, 030 in 2016. Further, the result revealed that, Fadama II mill operators had a mean capital of ₦170, 565.0 in 2006, this amount increased by 176% to ₦470, 565 in 2016. The Non- Fadama II mill operators in 2006 had a mean of ₦147, 833.3; the amount increased by 67.6% to ₦247, 833 in 2016.

The result also show that Fadama II rice marketers had a mean capital of ₦97, 166.67 in 2006, the mean capital increased by 308% to ₦397, 166 in 2016. Similarly, the non – Fadama II rice marketers had a mean of ₦109, 000 in 2006, this amount increased by 137% to ₦259, 000 in 2016.

Table 3: Net- Capital of Fadama II and Non- Fadama II Rice at inception in 2006 and 2016

| REIGs | | Inception (2006) | After (2016) | |
|--------------------|------|-------------------------|---------------------|----------|
| Observation | (n) | Mean | ₦ | % Change |
| *Input supplier F | (34) | 1277,353 | 1,877,353 | (47.00%) |
| *Input supplier NF | (30) | 663,333 | 963,333 | (36.2 %) |
| *Rice producers F | (60) | 100,566 | 250,566 | (149%) |
| *Rice producers NF | (33) | 83,030 | 163,030 | (96.4%) |
| *Mill operators F | (34) | 170,565 | 470,565 | (176 %) |
| *Mill operator NF | (30) | 147,833 | 247,833 | (67.6%) |
| *Rice Marketers F | (60) | 97,166 | 397,166 | (308%) |
| *Rice Marketers NF | (30) | 109,000 | 259,000 | (137%) |

* REIG's = Rice Economic Interest Groups (%) = Values in brackets are changes in percentages

F= Fadama II Beneficiaries

NF = Non- Fadama II Beneficiaries

Source: Survey Data, 2016

Conclusion

The findings of this research revealed that Fadama II Rice Actors were younger, better educated and more productive than the Non – Fadama II. Also, Fadama II actors had more capital and were making more profit than the Non – Fadama II actors in the area. It is therefore, concluded that the (NFDP II) had impacted positively on the Income and livelihood of the rice actors and has reduced poverty across the gender in the study area. This therefore is in agreement with Fadama reports and objectives.

Recommendations

The following recommendations were made based on the findings of the research:

1. the Non- Fadama II Rice Actors should form viable co-operative groups so that they can benefit from government and non- governmental agencies;
2. youth should be encouraged to participate in development projects because of their benefits in wealth creation, poverty alleviation and livelihood provision;
3. rice chain should be promoted as veritable tool for poverty alleviation and food security;
4. appropriate technology should be promoted due to expensive nature of foreign machines and equipment;
5. the skills and know-how of rice actors should be enhanced through reliable training (capacity building);
6. basic infrastructures should be provided in rural and urban areas to facilitate transportation and exchange function;
7. credit facilities for rice chain actors should be made accessible and affordable; and
8. more donor agencies should be advocated to come to the aid of agribusiness operators in Nigeria.

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