



IMPACT OF NATIONAL FADAMA II PROJECT ON THE SOCIAL-ECONOMIC CHARACTERISTICS OF CROP FARMERS IN ADAMAWA STATE, NIGERIA

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ABSTRACT

The study assessed the impact of Fadama II project on socio-economic characteristics of crop farmers in Adamawa state. Data were collected on a sample of 160 farmers and were analyzed using descriptive statistics including frequency tables, mean. Result of the socio-economic analysis revealed that 51% of the respondents were young and within the age range of 21- 40 years, 81.87 % were married while 86% were literate and attained one form of formal education or the other. Males dominated fadama crop production (50.62%), majority (51.25 %) has household size of 6 - 10 with a mean household size of 9 people. The survey reveals that, majority of the respondents were young, married and had one form of formal education or the other. Male farmers dominated fadama crop production with majority cultivating less than two hectares of land for production. Based on the analysis conducted and the results obtained, the Fadama II crop farmers has effectively enhance food crop production and it has been possible to established the fact that during Fadama II project, the income of the beneficiary farmers increased significantly more than before the project and also more than the non-beneficiaries' income. It is however recommended that, Government should take renewed interest in dry season production by strengthening support and public-private partnership so as to boost production and win niche markets with a challenge of making better markets for farmers.

Ke words: Impact, Socio-economic, Fadama II, and Crop farmers

INTRODUCTION

Agriculture serves as the mainstay of most developing countries. It is the only means of livelihood of members of the rural communities in those countries, especially in Nigeria. According to NBS (2011) agriculture contributes about 56.8% to GDP and a source of food nutrition for Nigerian households. It is a key factor that can affect majority of Nigerians since over 60% of its population is involved in farming (Aturamu and Daramola, 2005). Unfortunately, agriculture alone can no longer provide a reliable livelihood for the growing populations in these countries (Mhazo, et al, 2003). Alternative or additional income generating opportunities are needed to support the millions of poor families who can no longer support their livelihoods from the land alone (Simalenga, 1996). In Nigeria, incomes and productivity in rural areas is low hence rural population remain poor.

Crop production in Nigeria is predominantly rain-fed although supplemented with irrigation in the dry season. One way to harness the agricultural potential of the country is by exploiting the

fadama which is small-scale, farmer based, privatized irrigation system for crop production especially during the dry season. It is an alternative to large scale irrigation, which failed to meet the food self-sufficiency and food security of the country (Baba, 1993). The importance of fadama cropping system arises from the fact that fadama activity afforded people some opportunities at a time they would have been idle, besides, the surplus labour during dry seasons is utilized unlike in the rainy season when labour is a constraint (Sanda and Ayo, 1994).

The importance of fadama lands stem from their high level of residual moisture even during dry season as well as during drought conditions. The fadamas are also generally higher in organic matter and nutrients than adjacent upland soils (Kyuma, 2001). Until recently, little attention has been given to fadama lands. The National Fadama II was established with the main thrust to sustainably increase the incomes of all inclusive fadama users namely: farmers, pastoralists, fisher folks, hunters, gatherers and service providers, through empowering communities to take charge of their own development agenda and by reducing conflicts among users. The project is being implemented in 12 States of the federation namely: Adamawa, Bauchi, Gombe, Imo, Kaduna, Kebbi, Lagos, Niger, Ogun, Oyo, Taraba and FCT with US \$100m World Bank credit (Nigeria National Report, 2006).

Adamawa State is blessed with significant hectarage of fadama lands suitable for irrigation using both surface and underground water resource. It is estimated that that such fadama land occupied a land area of about 350,000 ha (Adamawa State Baseline Report, 2004). These fadama lands lie along the basins of major rivers and lakes which are located in the state. About 25% (260,000 ha) could be exploited using shallow aquifer located within the basins of both the perennial and seasonal rivers.

Despite agriculture's importance to rural development which transcends its direct impact on farmers' incomes most farmers depends largely on the traditional methods of farming which is labour intensive. It has become necessary to evolve various and sustainable ways that would speed up the engagement of more farmers all year round. One of the ways to achieve this is the sustainable development of the viable Fadama lands that will ensure increase productivity and increase income generating activities. Alternative or additional income generating opportunities are needed to support the millions of poor families who can no longer support their livelihoods from the land alone (Simalenga, 1996). Evidence has shown that agricultural growth has benefited millions through higher incomes, more plentiful and cheaper food, and by generating patterns of development that are employment-intensive and benefit both rural and urban areas (NFDO, 2005). World Bank, (2003) in its effort on poverty reduction in Nigeria focuses on raising rural agricultural productivity and incomes through provision of support for the implementation of Fadama II project with the objective of 20% increase in the income of at least 50% fadama resource user through increase productivity.

To exploit the dry season farm income potential, Nigerian government in collaboration with donor agencies such as the World Bank, African Development bank, Food and Agricultural Organization, International Food for Agricultural Development initiated the small-scale, low cost farmer-managed irrigation scheme to develop fadama lands. It has been realized that the incremental production necessary to make food production surpass average population growth rate and guarantee national food security cannot be attained without recourse to supplementary irrigation for major food production areas of the country.

Consequently, the study was structured to provide answers to the following questions:

- i. What were the socio- economic characteristics of fadama II participants in Adamawa State?
- ii. Did Fadama II project have impact on crop farmers beneficiaries' socio-economic characteristics in the study area?

Hypotheses

- i). The socio- economic characteristics of fadama II participants does not affect food crop production in the study area.
- ii). There was no significant relationship between socio-economic characteristics of fadama II participants and non Fadama II participants in the study area.

METHODOLOGY

The study was carried out in Adamawa State Nigeria. The local governments used for the study fell within the 3 senatorial zones of the state (Central, Southern and Northern).

Multistage stratified random sampling and purposive sampling techniques were used in the selection of respondents. In the first stage, the state was stratified into four according to the Adamawa Agricultural Development Programme (ADADP) zones. In each of the zone, participating local government areas in fadama crop production was purposively selected in proportion to the existing number of Fadama User Associations (FUA). In line with this, four local government areas in Zone II and one each in Zones I, III and IV were selected. In all, a total of seven local government areas were sampled. One hundred and sixty (160) food crop farmers were randomly selected in the FUA groups in the seven selected local government areas in proportion to their number in each local government. The membership of each FUA ranges from 10 – 30.

Descriptive and inferential statistics were employed in the analysis of the generated data. Descriptive statistics involved the use of means, frequency distributions and percentages were employed in analyzing the socioeconomic characteristics of fadama crop farmers

RESULTS AND DISCUSSION

Socio-economic Characteristics of Respondents

Socioeconomic status is an economic and sociological combination of the total measure of a person's work experience and of an individual or family's economic and social position relative to others, based on income, education and occupation. The household income, education and occupation were examined as well as other characteristics such as age of the household members. Age has been found to be an important variable in agricultural productivity (Coelli and Battese, 1996). The age distribution of respondents is presented in Table 1 and it shows that, majority (50.63 percent) of the respondents fall within the age range of 21- 40 years, about 48 percent of the respondents aged between 41 to 60 years while only few (two percent) were above 61 years of age with a mean age of 40 years. The younger respondents formed the cream of the work force and in their active and productive ages implying the capability and willingness to adopt and practice new innovations and therefore utilize it effectively to its fullest opportunity hence, participated in the fadama farming resulting to high increase in the utilization of the fadama lands and availability of agricultural produce. Building and/or strengthening the knowledge and capacity of these youths to contribute to agricultural policy development, training them in the value chain approach and its application for the development of selected agricultural products and creating awareness among stakeholders of the potential contribution of youth to agriculture, economy and poverty reduction is a key concern to Fadama II project, Second National Fadama Development Project, (NFDP –II, 2003). This result is in consonance with the findings of Nwalieji and Ajayi (2009) which reported a higher proportion of young people in adoption of improved production practices.

Table 1: Distribution of Respondents by Age

Age(years)	Frequency	Percentage
21-40	81	50.63
41-60	76	47.50
61 and above	3	1.87
Total	160	100.00

Source: Field survey, 2011

Marital status distribution as indicated in Table 2 shows that married respondents accounted for 81.87 percent, 13.13 percent are single and only about 2 percent are widowed. The study revealed that most families (about 82 percent) that are married with families suggest that they engaged in fadama production as a sustainable means for the family livelihood. The study lends credence to the works of some researchers which showed that 90 percent of food produced in this country comes from the rural sector who are mostly married (Nwachukwu, 2007; Afolabi, 2010).

Table 2: Distribution of Respondents by Marital Status

Marital status	Frequency	Percentage
Single	21	13.13
Married	131	81.87
Widow	3	1.87
Divorce	5	3.13
Total	160	100

Source: Field survey, 2011

Education has been identified as a catalyst in agricultural and other productive activities (Weir and Knight, 2000). Table 3 shows the distribution of respondents based on educational level. The result has revealed a high preponderance of the educated respondents as about 86 percent had one form of formal education or the other. Tertiary education accounted for 35 percent, followed by secondary education (26.25 percent) and primary education (24.37 percent), while only 14.38 percent had no formal education. This is evident from the findings by Simonyan et al. (2010) on socio-economic determinants of farmers' participation in Fadama II project which indicates that educational status of farmers was highly significant in determining the level of participation of farmers in Fadama II project. Nkonya, et al., (2008) also revealed the significance of educational level of project beneficiary to their technical efficiency which may be due to the fact that some aspect of Fadama II project requires a certain level of education as criteria for participation. However, the dominance of 35 percent in tertiary education is accorded to the fact that the appraisal considered all forms of post- secondary education as tertiary ranging from knowledge or skills acquired from agricultural farm centers, agricultural skills acquisition centers, colleges of agriculture, polytechnics and universities.

The preponderance of the educated respondents in fadama farming is an incentive towards the adoption of improved farm practices thereby resulting to increased productivity among the farmers. As they are educated they can manage their resources in an efficient manner. This study is in line with the findings by Lawal *et al.* (2010) who reported the involvement of educated farmers in the fadama farming in the guinea savanna belt of Nigeria. Lawal *et al.* therefore stress that, education has been found to be a catalyst in the adoption of innovations for fadama production in the area. The more educated a farmer is, the more he is receptive to changes and has the ability to adopt improved agricultural practices.

Table 3: Distribution of Respondents by Educational Level

Education	Frequency	Percentage
No formal education	23	14.38
Primary education	39	24.37
Secondary education	42	26.25
Tertiary education	56	35.00
Total	160	100

Source: Field survey, 2011.

Table 4 shows the distribution of respondents based on gender of the respondents. The result reveals that male gender were more in fadama crop production (50.62 percent), while the female gender accounted for 49.38 percent, however, the small variation was observed between male and female participation in fadama activities. To establish dominance in the gender participation the result was further subjected to t-test analysis in Table 5 by comparing the mean output of the male and female (12401 and 8177) with a mean difference of 4224 and was statistically significant at 5% probability level. This confirms male dominating fadama farming. This study is in line with previous studies that showed the dominance of men in production activities unlike their female counterparts that are constrained by socio- cultural barriers. Fakoya *et al.* (2010) reported high involvement of women in many agricultural activities like land clearing, planting and processing of agricultural produce. Low participation of women was not as a result of managerial incapability as observed by Adebayo *et al.* (2010) but that women are often neglected in many extension activities and has no title to land which is a vital component in agricultural production.

Table 4: Distribution of respondents by Gender

Gender	Frequency	Percentage
Male	81	50.62
Female	79	49.38
Total	160	100

Source: Field survey, 2011

Table 5: Result of T- test Analysis comparing the mean output of the male and female

Gender	Output (Mean)	Mean difference	Standard error	T. value
Male	12401		13899(1544)	
Female	8177	4224	11548(1299)	2.09**

Source: Data analysis, 2011. Significant at 5% probability level

Figures in parentheses are standard errors of the mean.

Table 6 shows the distribution of respondents by household size. The result reveals that 30.63 percent have household size of not more than five people, majority (51.25 percent) have household size of 6 - 10 people. Respondents with large family size who are gainfully employed and have adequate income can support production activities of their family members thereby resulting to increased output and overall wellbeing. Respondents with household size of above 11 people accounted for 18.12 percent. The mean household size is 9. However, the large household size does not usually translate to availability of family labour to cater for production activities. This minimizes the employment of hired labour and this reduces the expenditure on hired labour. The study is in line with the works of Nwalieji *et al* (2009) who reported that large household