

EVALUATION OF EFFECT OF THE THIRD NATIONAL FADAMA DEVELOPMENT PROJECT (FADAMA 111) ON FOOD PRODUCTION AMONG FARMERS IN KWANDE LOCAL GOVERNMENT AREA OF BENUE STATE, NIGERIA

Agbarevo, M.N. Benjamin

Department of Rural Sociology and Extension
Michael Okpara University of Agriculture, Umudike, Umuahia, Abia State, NIGERIA

&

Okwoche, Ada Victoria

Department of Agricultural Extension and Communication
University of Agriculture, Makurdi, Benue State, NIGERIA

ABSTRACT

The study was conducted to find out the effect of Fadama 111 project on crop yield among the farmers participating in the project in Kwande Local Government of Benue State, Nigeria. Fadama 111 is the third phase of the Fadama Project in Nigeria, and is essentially an agricultural diversification project. The project which is demand-driven is funded by the World Bank, Federal Government, State and Local Governments in Nigeria. In conducting the study, 100 participants in the project were selected from Kwande Local Government of Benue State. To obtain a random sample, the stratified random sampling technique was used. The study area was stratified into four, namely: Nanev, Turan, Shangev-ya and Kyurav-ya clans. Twenty-five participants were selected from each stratum, giving a sample size of 100 farmers. Data for the study was collected with the use of a 5-point likert rating scale to enable the farmers rate the extent of increase in their crop yield. The data collected was analyzed using the mean and population t-test to test the significance of difference between sample and population means at 95 % confidence level ($P \leq 0.05$). The difference between the sample mean of 4.2909 and population mean of 4.2920 was found to be insignificant. Therefore, the farmers were unanimous that their participation in Fadama 111 project has significantly increased their crop yield. The null hypothesis that there is no significant difference between the sample and population mean responses of the participants regarding how their participation has affected their crop yield was accepted, while the alternative hypothesis was rejected. Some recommendations were made.

Keywords: Effect, farmers, fadama111, project, crop, yield.

INTRODUCTION

The greatest problem of developing countries, such as Nigeria is poverty. Although the country may have favourable balance of trade and huge foreign exchange reserve, the income per capita remains very low with many people living below the poverty line of one USD per day. Poverty has persisted in Nigeria especially, among rural dwellers, who are predominantly farmers because of neglect even though 70 per cent of Nigerians are rural dwellers. Hence, they constitute the neglected majority. Various government agricultural and rural development programmes and projects have been undertaken to boost food production and incomes of rural dwellers, and consequently their standard of living but with little results. The rural farmers still live in abject poverty without access to basic infrastructure. Poor yields are obtained from crops, and when good yields are obtained, spoilage due to lack of storage facilities tends to maintain the vicious cycle of poverty.

A lot of countries within the sub-Saharan Africa region, including Nigeria, have many millions of people living on less than \$370.00 USD a year (World Bank, 1990). Over the years, government has embarked on programmes and projects aimed at increasing food production as well as alleviating rural poverty and bringing about rural development. Some of these programmes and projects are still on-going, while many have gone into extinction. They include: National Accelerated Food Production Programme; Directorate of Food, Roads and Rural Infrastructure; Operation Feed the Nation; Green Revolution; School to Land Programme, National Accelerated Food Production Programme (NAFPP) ; Agricultural Development Programme; which was (sponsored by World Bank) River Basin Development Authority; Rural Banking Scheme; Better Life for Rural Women; Peoples Bank of Nigeria; Community Banking; National Agricultural Land Development Authority; Special Programme for Food Security.

Rural poverty and under development have persisted, apparently because it has been difficult for Nigeria to dismantle all structures which have tended to prevent rural dwellers from complete realization of their full potentials. The greatest impediment to rural development and alleviation of rural poverty appears to be poor access to production resources, poor or absence of infrastructure and poor/lack of entrepreneurial and technical skills.

Fadama project is a World Bank development programme in Nigeria, which collaborates with the Nigerian Government. The National Fadama Development Project is executed in phases – Fadama 1, 11 and 111 projects so far. The current Fadama 111 project is designed to increase the production efficiency of Fadama users (farmers, pastoralists, hunters, etc.), and consequently their incomes. The Fadama1 project, which was the first phase of the project focused on supplementary water supply for irrigation and other uses. According to Ingawa [1998], the objectives of the Fadama1 project were:

- construction of about 50,000 shallow tube wells in fadama land for small scale irrigation;
- simplifying drilling technology for shallow tube wells;
- construction of Fadama infrastructure such as roads, culverts, storage sheds, etc.;
- organization of Fadama farmers for irrigation management, cost recovery and easy management of credit, marketing products, etc.;
- carrying out aquifer studies;
- monitoring and upgrading of irrigation technologies; and
- completion of environmental assessment of future Fadama development activities.

The second phase of the project known as Fadama11 was initiated to address some of the pitfalls of Fadama1, which prevented the full realization of the potential benefits of agricultural production activities. The pitfalls included poor development of rural infrastructure, storage, processing and marketing activities, low investment in irrigation technology, poor organization of Fadama farmers as well as lack of adequate techniques for greater productivity in particular. Fadama1 and Fadama11 focused basically on provision of irrigation facilities for crop production although non-farmers were among Fadama resource users, such as pastoralists, hunters, vulnerable and marginalized groups.

The Fadama111 project is a follow-up to Fadama11. The area of study, Kwande Local Government Area is located in Benue State, which is one of the 19 states in country that did

not participate in Fadama11 but are participating in Fadama111. Fadama111 is more like an agricultural diversification programme, which is a paradigm shift under the Fadama project. Its target beneficiaries are the private economic units/small holders, who earn their living directly or indirectly from exploitation of natural resources in a given area. It empowers Fadama communities with resources and needed technical training and support to properly manage and control their resources for their own benefit in particular and community development in general. The approach used in Fadama111 is Community Development Approach /Community Driven Approach (CDA), which is bottom-up as against top-bottom. Participating community associations are empowered to develop participatory and socially inclusive Local Development Plans (LDPs).

Under the Fadama project, participants collectively identify their development priorities and agree on their investment activities. Funding is by World Bank contributing 55.6%, Federal Government of Nigeria, 5.1%; State Governments, 17.1% and Local Governments 8.9%. The World Bank has decided to extend its funding of Fadama Project in Nigeria. It has provided the sum of \$200m US Dollars for Nigeria in August 2013 (World Bank, 2013).

Agbarevo and Obinne (2010) observed that Community Development assumes that rural development would be better achieved by assisting people to identify, define and limit their problems and needs, and then plan and implement selected action to arrive at a solution. It takes the form of problem-solving approach by the community or group facilitated by government/NGOs. The model has the advantage of active participation of people in projects of which they are the beneficiaries. Previous government efforts aimed at reducing rural poverty and hunger were not very impressive. They largely used top-down approach in implementing programmes designed to increase food production, income and standard of living of rural people (Baldwin cited in Agbarevo, 2005). Fadama project on the other hand is demand-driven in which the beneficiaries or participants determine their priorities, analyze their problems, plan how to solve them, choose between alternative courses of action, and implement the chosen course of action with government officials acting as facilitators in a very participatory manner.

This paradigm shift, it is believed, would succeed where previous programmes have failed in increasing food production, rural income, and consequently reduce rural poverty. But the extent of success or otherwise of the project in increasing crop yield / food production is apparently not known in the study area, and this constitutes the problem of the study. The study, therefore, hypothesizes that there is no significant difference between the mean yields of the sample and population of the study.

MATERIALS AND METHODS

In conducting the study, 100 farmers participating in the Fadama111 project in Kwande Local Government of Benue State were randomly selected through the stratified random sampling technique, namely: Nanev, Turan, Shangev-ya and Kyuran-ya clans. The data used for the study was collected through the use of a 5-point likert questionnaire to which the literate farmers responded, while the illiterate farmers were interviewed using the questionnaire as an interview schedule. The ADP staff assisted the researchers in collecting the data.

The response options on farmers' regarding crop yield were assigned numerical scores 1 to 5. The farmers were expected to indicate the extent to which their yields have been increased

through their participation in the Fadama111 by indicating strongly agree, agree, undecided, disagree and strongly disagree, with strongly agree taking a numerical score of 5 followed by other options in a descending order. 5, 4, 3, 2, and 1 add up to 15 which gives a mean of 3.00 when divided 5 (the number of options). The upper class limit of 3, which is 3.05 was used as a cut-off point for a response to be adjudged positive in increasing farmers' yield.

The instrument was validated through a test-retest technique. The data collected was analyzed using both descriptive and inferential statistics, which were the mean and population t-test of significance respectively. The significance of difference between sample and population means was determined by population t-test of significance at 95 per cent confidence level, that is, $P \leq 0.05$. The population t- test is given by the formula:

$$t = \frac{\bar{X} - U}{\frac{s}{\sqrt{n-1}}}$$

where:

\bar{x} = sample mean

s = standard deviation of sample

u = population mean estimate: alpha – level (0.05) $\frac{(s)}{\sqrt{n}} + \bar{X}$

n = size of sample

RESULTS

Table1 is a t-test of significance of difference between the population and sample means regarding the extent Fadama111 has increased farmers' crop yield in the study area. The sample mean was 4.2909. This was very high on a 5 point likert rating scale. It implies that Fadama111 project has highly increased the crop yield of participating farmers. The result of the analysis of data showed no significant difference between the sample and population means of 4.2909 and 4.2920 respectively at 0.05 level of significance. The null hypothesis that no significant difference existed between the sample and population means was accepted, while the alternative hypothesis was rejected. Hence, the farmers were unanimous that their participation in Fadama111 project has significantly increased their crop yield.

DISCUSSION

The finding of study that crop yield of the farmers increased significantly as a result of their participation in the Fadama111 project is heart-warming because it shows that the Fadama Fadama111 project is succeeding in empowering rural dwellers through increased crop yield. Increase in yield translates into increase in income. Hence, helping farmers to meet their financial needs since finance appears to be the greatest limiting factor in rural agriculture as the farmers are no longer conservative but lack mainly financial resources. The increase in farmers' yield as found by the study arising from better application of technology and management skills by the farmers is in line with the findings of Nwosu (2005), Okunade, Olaniyi and Ogunleye (2005), who reported increase in farmers' yield leading to increased income as a result of adoption of improved agricultural practices. Increase in farmers' yield, or income as a result of application of better technologies can be used to measure the success

of an agricultural development programme, or project because increase in yield translates to increased income, which further translates into improved standard of living (Agbarevo, 2010). The significant increase in farmers' crop yield as reported by the study means that the Fadama111 project is so far a success in the study area. This does not, however, vitiate the fact that there are other indicators used to assess the success of an agricultural development programme, or project.

The success of Fadama111 project is largely attributed so far to the paradigm shift in its implementation, which uses Community Development Approach as against top-down approach. This is because Community Development Approach puts the participants in - charge as the project is demand-driven instead of supply-driven. Hence, the participants take their destiny in their own hands, and this ensures the highest level of commitment and dedication to achieve success because they are the ultimate beneficiaries of the expected dividends. In this regard, Roth (2001) succinctly observed that greater success in agricultural development programmes were achieved by using participatory approaches rather than top-down bureaucratic approach, which has been criticized for being responsible for the failure of many agricultural projects / programmes. This view is equally supported by Haggmann et al. in Agbarevo (2003), who concluded that participatory approaches such as Community Development Approach involved farmers/participants as equal partners in generating and testing new ideas, technologies and practices, leading to a more dynamic development and commitment, with better results achieved at community level.

CONCLUSION

The study has shown that the Fadama111 project is succeeding in alleviating rural poverty arising from recorded significant increase in the crop yield of the participating farmers. Increase in farmers' yield leads to higher income, which is expected to be accompanied by improved standard of living of farmers' households. Previous government programmes aimed at reducing rural poverty were not very successful although some results were achieved. The success of the Fadama111 project is largely attributed to the Community Development Approach, which puts the participants in-charge of the implementation with government agents acting as facilitators, providing the needed technical and logistic support. This paradigm shift from top-down to bottom-up approach exemplified by the Community Development Approach, which is demand - driven should be the model for agricultural and rural development programmes if better results were expected.

Table1: t-Test Analysis of Significance of the Difference Between the Sample and Population Means of Farmers' Responses on crop yield.

Groups	\bar{X}	SD	$P \leq 0.05$	t-cal	Result
Sample	4.2909	0.7501	1.96	0.0256	Not significant
Population	4.2920	0.7488			

Decision: HO accepted

Table1 is a t-test analysis of significance of difference between the sample and population means regarding Fadama111 farmers' opinion on how their participation in the project has increased their crop yield. The table shows that the sample mean was 4.46 on a 5-point scale, which implied that the farmers were unanimous that the project had increased their income tremendously. The population mean was 4.47, while the difference between sample and the

population means was 0.01. The standard deviation of the sample was 0.9152, which meant that there was very little scatter of the distribution.

The t-test showed that the difference between the sample and the population means was not significant at 95% confidence level ($P \leq 0.05$) at 98% degrees of freedom. This is because the calculated t-value of 0.19 was less the table t-value of 1.96. Therefore, the null hypothesis which stated that there was no significant difference between the sample and population means was accepted, while the alternative hypothesis was rejected.

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