



Assessment of Contributions of Agricultural Development Programme to Poverty Alleviation among Rural Farmers in Aniocha Local Government Area of Anambra State, Nigeria

Onumadu, F. N.* and Olatunji, S.O.**

*Department of Rural Sociology and Extension
Michael Okpara University of Agriculture, Umudike
P.M.B 7267, Umuahia, Abia State, Nigeria

**Department of Agricultural Economics and Extension
University of Port-Harcourt
Rivers State, Nigeria

ABSTRACT

The study assessed the contributions of Agricultural Development Programme to poverty alleviation among rural farmers in Aniocha Local Government Area of Anambra State, Nigeria. Data were collected from 120 farmers using multi-stage sampling techniques. Data generated were analysed using descriptive and inferential statistics such as frequency count, percentages, mean and regression analysis. The results showed that 45% of the farmers were in the age bracket of 41 – 50 years while 28% were between 51 – 60 years and a mean age of 55 years. Majority (55%) of the male farmers participated in the ADP poverty alleviation programme. Also, majority (71.67%) of the farmers were married with a sizeable household. Over 60% were educated and as many as 76% of the farmers were not members of Cooperative Society. Majority (53%) of the farmers fell under the category of small – scale farmers and generated income of ₦10,000 to ₦100,000 annually. Sixty-five percent of the farmers were poor while 35% were not before the inception of ADP poverty alleviation programmes in the study areas. Dry season vegetable production, yam minnisset techniques, planting improved crops and crop spacing respectively had adoption score above the mean score value of ($x = 3.50$). Frequency of extension agent contact with the farmers was inadequate. The major constraints the farmers had in the adoption of ADP poverty alleviation innovations included lack of access to land, inadequate farm inputs, lack of funds and none membership of Cooperative Society. The test of the hypothesis of the study showed that the significant factors influencing the poverty status of the farmers were age of the farmer, gender, years of formal education, household size, and membership of Cooperative Society among others. It was therefore recommended that those constraints that impeded the adoption of ADP innovations such as lack of access to land, inadequate farm inputs, and extension agents and lack of funds should be urgently addressed by both the government and ADP.

Keywords: *Assessment. Contributions. Agricultural Development Programmes. Poverty Alleviation*

1. INTRODUCTION

Nigerian government has over the years embarked in a number of agricultural development programmes such as Operation Feed the Nation (OFN), Green Revolution (GR), River Basin Development Authorities (RBDA) among others in order to improve agricultural production in Nigeria. The establishment of Agricultural Development Programme (ADP) is the boldest attempt by the Federal Government of Nigeria to tackle multi-faceted problems of agriculture in Nigeria. The ADP assists rural farmers to improve their productivity with the help of Extension Agents thereby improving the living standard of the small-scale farmers who provide over 90% of Gross Domestic Food Supplies (Gbadomosi, 2001).

The ADP is the implementation organ of the States' Ministry of Agriculture and Natural Resources. It is semi-autonomous and focuses on the small-scale farmer. It adopts the Integrated Rural Development Strategy in its operations. ADP programmes consist of Adaptive Research, Extension or technology transfer, input supply and rural infrastructure. In adaptive research, diagnostic surveys are carried out to identify problems inhibiting technology transfer, before conducting research under local conditions to evolve appropriate technology packages for adoption by farmers. The extension programme transfers improved packages to farmers and brings

problems of farmers back to research. The Training and Visit (T&V) approach is adopted in Extension Teaching Method. It involves Monthly Technology Review Meeting (MTRM) during which researches from Research Institutes train Subject – Matter Specialists (SMSs) who in turn train farmers on improved agricultural practices (Jibowo, 2005).

Poverty, fundamentally is a denial of choices and opportunities, a violation of human dignity. It is also defined as a lack of essential items, such as food, clothing, water and shelter needed for proper living (United Nations systems in Nigeria, 2001). Poverty is further defined as a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, education and information (Abumere, 2004). In other words, when people are unable to eat balanced diet, send their children to school or have no access to health care, they can be considered to be in poverty, regardless of their income.

Conversely, poverty alleviation is any process which seeks to reduce the level of poverty in a community or among a group of people or countries. Poverty alleviation programmes may be aimed at economic or non-economic poverty. Some of the popular methods employed to alleviate poverty are education, economic development and income redistribution. Poverty alleviation efforts may also be aimed at removing social and



legal barriers to income growth among the poor. Alleviating poverty and ensuring improved farm income injecting funds directly to the stakeholders that are in need of it, namely the rural farmers (Njoku, 2000).

Farmers in Aniocha L.G.A., Anambra State Nigeria have not been able to increase their agricultural production and thereby stemming poverty due to hindrances of land tenure system, dearth of extension agents, inadequate farm inputs, wide – spread attack of insects and pest in decades. These have worsened their food production problem and farm income. Consequently, the ADP employed an integrated strategy in the development of agriculture and rural infrastructures with a view to raising the productivity and income of the small-scaled farmers as well as improving their standard of living generally. It is against this backdrop that this study focused on the assessment of contributions of ADP in alleviating poverty among rural farmers in Aniocha L.G.A of Anambra State, Nigeria. The specific objectives of the study were to:

- i. describe the demographic characteristics of the farmers in the study area
- ii. determine the poverty status of the farmers
- iii. identify the level of adoption of innovations provided by the ADP in the study area
- iv. identify the factors militating against the adoption of ADP innovations by the farmers.

2. METHODOLOGY

The study area was Aniocha L.G.A of Anambra State, Nigeria. The L.G.A lies between longitude $6^{\circ}45'$ and $7^{\circ}25'$ and latitude $6^{\circ}21'$ and $6^{\circ}65'$ at altitude 2.3 meters above sea level. The climatic condition of the area can generally be described as tropical with two clear identifiable seasons: the wet and dry seasons. It has five months of dry season (November to March) and an annual rainfall of 1,700 mm to 1952 mm. The annual average temperature is 20°C to 28°C and 18°C in coldest months (ADP, 2006).

The area was selected for the study because of its agricultural potential and high population of farmers. The cropping system is mixed cropping as a result of land scarcity. Crops grown include cassava, yam, maize, melon, cocoyam, vegetable, sweet potato and oil palm tree. Poultry, sheep and goat are the major livestock produced.

3. RESULTS AND DISCUSSIONS

Table 1: Demographic characteristics of the respondents (n = 120)

| Variables | Frequency | Percentage |
|-------------|-----------|------------|
| Age: | | |
| 20 – 30 | 6 | 5.00 |
| 31 – 40 | 17 | 14.17 |
| 41 – 50 | 54 | 45.00 |
| 51 – 60 | 34 | 28.33 |

The study area is made up of ten (10) autonomous communities. These include Ichida, Nri, Nneni, Akwaeze, Agulu – Uzoigbo, Agulu, Obeledu, Adazi – Ani, Adazi – Enu and Adazi – Nnukwu. Multi – stage random sampling technique was employed to select five (5) out of the ten (10) autonomous communities. The communities selected were Ichida, Nneni, Agulu – Uzoigbo, Obeledu and Adazi – Enu. Furthermore, twenty four (24) farmers were selected by simple random technique from each of the five (5) autonomous communities giving a sample size of 120 farmers who took part in the study.

Data for the study were collected through pre-tested structured questionnaire and the data so generated were analyzed using descriptive statistics, such as frequency table count, percentages and means. While multiple regression was employed to test the hypothesis of the study which model was specified as follows:

$$P = f(X_1, X_2, X_3, \dots, X_n)$$

Where

X_1 = Age of respondents

X_2 = Gender

X_3 = Marital status

X_4 = Years of formal education attainment

X_5 = Household size

X_6 = Membership of cooperative society

X_7 = Credit access

X_8 = Farm size (ha)

X_9 = Farming experience

X_{10} = Depending ratio

X_{11} = Value of assets in Naira

X_{12} = Labour employed



| | | |
|-----------------------------------|-----|-------|
| 61 – 70 | 7 | 5.83 |
| 71 – 80 | 2 | 1.67 |
| Gender: | | |
| Male | 66 | 55.00 |
| Female | 54 | 45.00 |
| Marital Status: | | |
| Single | 12 | 10.00 |
| Married | 86 | 71.67 |
| Widow/Widower | 16 | 13.33 |
| Divorced /Separated | 6 | 5.00 |
| Households | | |
| 1 – 5 | 52 | 43.33 |
| 6 – 10 | 60 | 50.00 |
| 11 – 15 | 8 | 6.67 |
| Education attainment: | | |
| No formal education | 16 | 13.33 |
| Primary education | 24 | 20.00 |
| Secondary education | 42 | 35.00 |
| Tertiary education | 38 | 31.67 |
| Membership of Cooperative | | |
| Yes | 29 | 24.00 |
| No | 91 | 76.00 |
| Farming Experience (years) | | |
| 1 – 5 | 39 | 32.50 |
| 6 – 10 | 49 | 40.83 |
| 11 – 15 | 20 | 16.67 |
| 16 – 20 | 12 | 10.00 |
| Farm Size (ha) | | |
| 0.5 – 1.5 | 35 | 29.17 |
| 1.1 – 2.5 | 63 | 52.50 |
| 2.6 – 3.5 | 15 | 12.50 |
| 3.6 – 4.5 | 7 | 5.83 |
| Income (annually) | | |
| ₦10,000 – ₦100,000 | 106 | 88.33 |
| ₦101,000 – ₦200,000 | 12 | 10.00 |
| ₦201,000 – ₦300,000 | 2 | 1.67 |

Source: Field Survey, 2011

Analysis of the demographic profile of the farmers is presented in Table I. The result shows that 45% of the farmers fell within the age bracket of the 41 – 50 years while 28. 33% of the farmers were between the age bracket of 51 – 60 years and a mean age of 55 years. This indicated that the farmers were largely young and aging in the study area. This of course contradicted Oluwasanmi *et. al.* (2005) observation, that young men and women migrated to urban areas leaving only the aged. The results also showed that the experience and skill devoted to food production and income generation were as a result of adoption of ADP innovations.

Male farmers (55%) participated in the contribution of ADP on poverty alleviation. Majority (71.67%) of the farmers were married. It can then be deduced that they could work together to improve their standard of living, income and production level with adoption of ADP innovations. Fifty percent of the farmers had household size of 6 to 10 persons. This showed that the two categories of respondents had enhanced family labour to help in their farm operations. Most of the farmers had secondary (35%) and tertiary education (32%) respectively.

The implication is that responsible and learned farmers participated in the execution of ADP on poverty alleviation. Education and training have been viewed as a necessity to enhance the ability of farmers in accessing credit and adopting modern technologies to improve yield and income (Gbadamosi, 2001).

Majority (76%) of the farmers were not members of Cooperative Society while 24% were members. The low percentage of farmers who were not in cooperative Society indicated that extension agents had not achieved much in terms of organizing farmers into cooperatives. This is necessary because as cooperative members, it might enable the farmers to access farm inputs, credits and subsidies collectively instead of individually.

As many as over 40% of the farmers had 6 to 10 years of farming experience. The implication here is that farmers accumulate experience in farming through continuous practice in the field have lots on increased productivity and income (Nwaru, 2004). Asiabaka (2002) also observed that farming



experience is one of the factors which motivate farmers to accept new ideas and practices.

Majority of the farmers had farm size of 1.1 – 2.5 hectares of farm land. The hectareage of farmers' farms showed that they were small-scale farmers. This is in tandem with Onumadu and Ukanwolu (2011) classification of farm land hectareage of

farmers into small scale, medium and large scale farmers. Majority (88%) of the farmers had annual income ranging from ₦10,000 – ₦100,000 and a mean of ₦5,000 from sales of farm crops. The implications were that the farmers had small-holdings, inadequate funds, inadequate inputs and lack of encouragement from the government. This was observed during oral discussion with the clientele.

Table 2: Distribution of Respondents According to their Poverty Status before ADP Intervention

| Poverty status | Frequency | Percentage |
|----------------|------------|------------|
| Not – poor | 42 | 35.00 |
| Poor | 55 | 45.83 |
| Extremely poor | 23 | 19.17 |
| Total | 120 | 100 |

Source: Field Survey, 2011

Table 2 presents poverty status of the farmers before ADP intervention. The table shows that as many as 45.83% of the farmers were poor, 35% were not poor while 19.17% were extremely poor. The implication of this result is that farmers

who were poor and extremely poor had not been exposed to new technologies before inception of ADP in the study area. While the farmers that were not poor might be cosmopolites who adopted innovations in the course of their travels.

Table 3: Distribution of Respondents According to ADP Innovations Adopted by Farmers in Aniocha L.G.A of Anambra State, Nigeria

| Innovation | Not Aware | Aware | Developing | Evaluating it | / | | | | Total no. of Respondents | Total Respondents | Mean score |
|-----------------------------------|-----------|-------|------------|---------------|--------------------|----------|----------|---------------|--------------------------|-------------------|------------|
| | | | | | Trying small using | Adopting | Rejected | Discontinuous | | | |
| Dry season vegetable production | 16 | 174 | 16 | 12 | 148 | 110 | 12 | - | 488 | 120 | 4.07 |
| Upland rice production | 74 | 24 | 16 | 24 | 16 | - | 12 | - | 166 | 120 | 1.38 |
| Yam minniset technique | 10 | 184 | 12 | 30 | 116 | 110 | 24 | - | 486 | 120 | 4.05 |
| Fish preservation by salting | 34 | 64 | - | 6 | 40 | 20 | 24 | 14 | 202 | 120 | 1.68 |
| Processing of plantain into flour | 58 | 34 | 8 | 6 | 16 | 70 | 12 | 14 | 218 | 120 | 1.82 |
| Rabbitary | 34 | 58 | 24 | - | 8 | 30 | 36 | - | 190 | 120 | 1.58 |
| Snailry | 34 | 54 | 4 | 12 | 40 | 50 | 24 | - | 218 | 120 | 1.82 |
| Homestead fish production | 64 | 30 | 4 | 24 | 8 | 30 | 36 | - | 196 | 120 | 1.62 |
| Crop spacing | 6 | 182 | 20 | 6 | 26 | 170 | 12 | - | 422 | 120 | 3.53 |
| Planting of improved crop | 2 | 172 | 16 | 24 | 34 | 190 | - | - | 444 | 120 | 3.70 |
| Alley cropping | 11 | 16 | 12 | 24 | 16 | 10 | 60 | 14 | 222 | 120 | 1.85 |

Source: Field survey, 2011

Entries in Table 3 shows the innovations adopted and mean scores. Dry season vegetable production ($x = 4.07$); yam minniset technique ($x = 4.05$); planting improved crops ($x = 3.70$) and crop spacing ($x = 3.53$) respectively. The result showed that the adoption score above the mean score value of 3.50 of the innovations were adopted while innovations less

than 3.50 adoption score were not adopted. This implied that the knowledge gained during training and awareness programme of ADP led to better application of the innovations which invariably led to improved productivity and the corresponding alleviation of poverty in the study area.

**Table 4: Distribution of Respondents by Frequency of Contact with Extension Agents Visits**

| Frequency of Extension Contact | Frequency | Percentage |
|--------------------------------|------------|------------|
| No contact | 39 | 32.50 |
| Once a week | 11 | 9.17 |
| Once in two weeks | 35 | 20.17 |
| Once in a month | 23 | 19.17 |
| Once in two months | 7 | 5.83 |
| Once in three to five months | 5 | 4.17 |
| Total | 120 | 100 |

Source: Field Survey, 2011

Table 4 shows frequency of contacts, farmers had with extension agents. Over 32% had no contact with extension agents while 20.17% of the farmers had once in two weeks. This is in tandem with Training and Visit (T&V) specification (Unanma, 2004). Nineteen percent had contact with the agents once in a month while 9%, 6% and 4% had contacts with agents

once a week, once in two months and once between three to five months respectively. The contact scenario implied that the extension agents did not make sufficient contact with the farmers in the study area and this might have had effect on the adoption attitude of the farmers.

Table 5: Distribution of Respondents According to Constraints in the Adoption of ADP Innovations

| Constraints | Frequency | Percentage |
|--|-----------|------------|
| Lack of funds | 101 | 25.6 |
| Poor farm management | 67 | 17.0 |
| None membership of cooperative society | 82 | 20.8 |
| Inadequate Extension Agents | 35 | 8.9 |
| Lack of access to land | 110 | 27.8 |
| Inadequate farm inputs | 110 | 27.8 |

Source: Field survey, 2011

***Multiple choice responses**

Table 5 indicates certain constraints that hindered the adoption of ADP new farm technologies to alleviate poverty in the study area. Twenty eight percent of the farmers mentioned lack of access to land and inadequate farm inputs respectively; lack of funds (25.6%) as well as none membership of cooperative society (20.8%) were the major constraints to adoption of ADP

innovations in the study area. Other constraints were poor farm management (17%) and inadequate contact of farmers with extension agents (8.9%). These findings were in line with farmers' major constraints to the adoption of new farm technologies as highlighted by Alabi (2008) which includes lack of funds, inadequate extension agents and lack of access to land among others.

Table 6: Regression Analysis of Demographic Determinants of Poverty Status among Farmers in Aniocha L.G.A of Anambra State, Nigeria

| Variable | Coefficient | Standard Error | Z Value |
|---|-------------|----------------|----------|
| Intercept | 4.194 | 1.341 | 3.13*** |
| Age (X ₁) | -0.029 | 0.014 | -2.16** |
| Gender (X ₂) | -0.070 | 0.021 | -3.34*** |
| Marital Status (X ₃) | 0.017 | 0.102 | 0.16 |
| Years of Formal Education (X ₄) | 1.001 | 0.375 | 2.67*** |
| Household Size (X ₅) | -0.029 | 0.013 | -2.16 |
| Membership of Cooperative Society (X ₆) | 0.047 | 0.024 | 1.94* |
| Credit Access (X ₇) | 1.336 | 0.455 | 2.94*** |
| Farm Size (ha) (X ₈) | 0.200 | 0.175 | 1.14 |
| Farming Experience (X ₉) | 0.746 | 0.374 | 2.00** |



| | | | |
|-------------------------------------|--------|-------|----------|
| Dependency Ratio (X ₁₀) | -0.416 | 0.11 | -3.61*** |
| Value of Assets (X ₁₁) | 0.864 | 0.051 | 1.65* |
| Labour (X ₁₂) | 0.659 | 0.510 | 1.29 |

Source: Field Survey, 2011

Likelihood Ratio $X^2 = 102.06^{***}$

Pseudo $R^2 = 0.8683$

Key = ***significant at 1%,

**significant at 5%,

*significant at 10%

The regression estimates of the factors influencing the poverty status of the respondents were presented in table 6. The coefficient of determination was 0.8683 which implies that 86.83 percent of the variations in the poverty status of the respondents were explained by the variable included in the model. The likelihood ratio (X^2) was significant at one percent indicating the goodness of fit of the model. The significant factors influencing the poverty status were: Age of farmer (X₁); Gender (X₂); Years of formal education (X₄); Household size (X₅); Membership of Co-operative Society (X₆); Credit Access (X₇); Farming experience (X₉); Dependency ratio (X₁₀); Value of Assets (X₁₁).

The coefficient of Age and Household size were negative and significant at 5 percent level of probability. This indicates that any increase in the variables will lead to an increase in poverty. The coefficient for membership of Cooperative Society and Value of assets were positive and significant at 10 percent level of probability. This implies that any increase in any variable will lead to corresponding decrease in poverty. The coefficient for years of formal education and access to credit were also positive and is one percent which means that any increase in these variables will reduce poverty. The coefficient for farming experience was 5% and it is positive. This means that when the variable increases there will be a decrease in poverty.

4. CONCLUSION

The study assessed the contribution of Agricultural Development Programmes (ADP) to poverty alleviation among rural farmers in Aniocha Local Government Area of Anambra State, Nigeria. The findings showed that the farmers were largely young and ageing in the study area. Experience and skill devoted to food production and income generation were as a result of adoption of ADP innovations. Majority of male farmers were involved in the poverty alleviation programme. Majority of the farmers were married with sizeable household. Most had secondary and tertiary education while majority did not belong to any Cooperative Society. Most of the farmers had 6 – 10 years of farming experience and were small – scale farmers while majority generated income ranging from ₦10, 000 – N100, 000 annually. Many of the farmers were poor before ADP intervention. Also, ADP training and awareness programmes led to better application of the innovations which improved productivity and the

corresponding poverty alleviation in the study area. The extension agents did not make sufficient contact with the farmers. Lack of access to land inadequate farm inputs and inadequate extension agents were the greatest constraints that impeded adoption of ADP innovations in the study area. The test of the hypothesis of the study showed that the significant factors influencing the poverty status of the farmers were age of the farmers, gender, years of formal education, household size, and membership of Cooperative Society among others. It was recommended that those constraints that impede adoption of ADP innovations such as lack of access to land, inadequate farm inputs and extension agents should be addressed by both government and ADP.

REFERENCES

- [1]. Abumere, S. T. (2004). Space and Poverty in Cross River State of Nigeria. Seminar Paper Presented to the Department of Geography University of Ibadan. Friday 10th September, 2004.
- [2]. Agricultural Development Programmes (2006). Production Year Book. Anambra State, Nigeria. P. 20
- [3]. Alabi, K. M. (2008). Farmers Access to Public Tractor Hiring Services in Osun State, Nigeria. Nigerian Journal of Rural Sociology. Vol. 8 (1): 71 – 78.
- [4]. Asiabaka, T. A. (2002). A Brief Review of Nigeria's Agricultural Extension in Harare, Zambab Technical Centre for Agricultural and Rural Cooperation, ACE – EEC. Pp. 32 – 45
- [5]. Gbadamosi, I. K.T. (2001). Rural Agricultural Data Base for Industrial Development in Nigeria. A Case Study of Ogun State. Proceedings of 44th Agricultural Conference, Ibadan.
- [6]. Jibowo, A. A. (2005). History of Agricultural Extension in Nigeria. In: Adedoyin, S. F. (ed). Agricultural Extension in Nigeria. Ilorin: Agricultural Extension Society of Nigeria. Pp. 5
- [7]. Njoku, J. E. (2000). Government Management and Partnership Imperatives for Sustainable Agricultural Research, Food Security, Poverty Alleviation and Rural



- Development in Nigeria. Paper Presented at the National Workshop Held at National Root Crop Research Institute, Umudike. 22 – 26th May, 2000.
- [8]. Nwaru, J. C. (2004). Rural Credit Markets and Resource Use in Arable Crop Production in Imo State, Nigeria. Ph. D Thesis Submitted to Department of Agricultural Economics, Michael Okpara University of Agriculture, Umudike.
- [9]. Oluwasanmi, E. O. A., Okuneye, P. A. and Sokoya, G. O. (2005). Micro Credit for Agricultural Development. a study of Women Groups in Ogun State, Nigeria.
- [10]. Onumadu, F. N. and Ukanwaolu, G. K. (2011). Utilization of Cocoyam Value Added Technology in Umuahia North Local Government Area, Abia State, Nigeria. International Journal of Applied Research and Technology. Vol.1, No. 5, September, 2012: 20 – 25.
- [11]. Unamma, R. P. A. (2004). The Role of Research and Extension in the sustainability of the Production of the Agricultural Development Programme.
- [12]. United Nations System in Nigeria (2001). Nigeria Common Country Assessment, U.S.A: United Nations Development Group. Pp. 222.