EFFECT OF SELECTED COMMUNITY-BASED PROGRAMMES ON THE POVERTY PROFILES OF FARMERS IN ABIA STATE, NIGERIA

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ABSTRACT
The Agricultural Transformation Agenda of the Federal Government of Nigeria aimed at boosting agricultural production and thus reducing rural poverty have been achieved through donor-sponsored programme intervention. In line with this initiative, this study analyzed effect of IFAD/FGN/NDDC/Community-Based Natural Resource Management Programme on the poverty profiles of participating and non-participating farmers in Abia State, Nigeria. Purposive and multistage random sampling techniques were used in the selection of Local Government Areas, participating communities, farmer groups and participating farmers. The sample size was 240 farmers (120 participating and 120 non-participating IFAD farmers). Data were collected with two sets of structured questionnaire and analyzed with descriptive statistics, paired t-test and poverty gap analysis. The result indicates that mean ages of IFAD farmers was 47.80 years while that of non IFAD farmers was 49.56 years. The IFAD farmers had (\( \bar{X} = 14.4 \)) years of farming experience as against (\( \bar{X} = 15.6 \)) years for the non IFAD farmers. The IFAD farmers had (\( \bar{X} = 2.5 \)) hectares while non IFAD farmers farmed on (\( \bar{X} = 2.1 \)) hectares. The mean annual farm income of IFAD farmers was N201, 441.00, while non IFAD farmers had N187, 432.00. The results of the Paired t-test analysis show that farm size and farm income of IFAD participating farmers were significantly higher than the non IFAD farmers at 1% levels of probability while, variable inputs and farm output where significant at 10% levels of probability. The results of poverty gap analysis showed that 33.33% and 45.21% of the IFAD and non IFAD farmers were poor, respectively, and will require 21.87% and 32.59% to get out of their poverty. Policies aimed at timely supply of farm inputs (since farming is time bound), replication of the programme in other communities and prompt payment of counterpart funds by federal, state and local governments were advocated for sustainable poverty reduction in the study areas.

Keywords: IFAD, Community-based, Poverty - profiles

INTRODUCTION
Poverty in Nigeria has been seen as a rural and agriculture oriented phenomenon. Agriculture still forms the mainstay of Nigeria’s economy employing more than 70 percent of the active labour force and contributed about 42 percent to the GDP in 2010. However, the rural sector that supports agricultural production is home to more than 60 percent of the over 140 million people; and houses more than 73 percent of the poorest of the poor families (NBS, 2012a). People who do not have sufficient food intake to ensure active and healthy lives are among the poorest in the world (FAO, 2012). Poverty is a global menace that threatens the standard of living of the people across various countries of the world and it is an endemic phenomenon that is on the increase in Nigeria (Olorunsanya, Falola and Ogundeji, 2011). Poverty in Nigeria is pervasive although the country is rich in human and material resources that should translate into better living standards (Omonona, 2009). Widespread poverty with daily
consumption expenditures of below the equivalent of USD 1 per day, illiteracy, diseases and human misery still remain conspicuous features of the rural areas (World Bank, 2013). Despite the various efforts of government to reduce the incidence of poverty through different poverty alleviation programmes and strategies and the quest to be one of the 20 largest economies by the year 2020, Nigeria continues to be one of the poorest countries in the world (Adepoju, 2012). Its incidence rose from 27.20% in 1980 to 42.7% in 1992 and 69% in 2010(NBS, 2012a). In a developing country like Nigeria, the consumption pattern of its populace is skewed towards food, that is, food accounts for a higher proportion of the total expenditure (NBS, 2012b). A rising share of food expenditure reflects the hardship that poor families face when trying to maintain food consumption when either food prices rise or incomes fall, by sacrificing other household spending, whether for consumption or investment (FAO, 2012). The absence of donor sponsored development institutions and the weakness of existing ones largely disenfranchised the poor from participating in the decision making process of interventions and issues that affect their welfare. Some recent studies (Balogun, and Yusuf 2011; Akpabio, 2008) do indicate that local institutional strengthening through the active participation of the poor in project design and implementation is necessary factor in poverty reduction in Nigeria. However, evidence suggest that the key to alleviating poverty in many parts of the world is a more productive and profitable agricultural sector. This is because agriculture paves the way for economic growth in poorer nations, through income distribution and building of a sustained economic growth (Fritschel and Mohan, 2006; World Bank, 2012).

According to World Bank (2007) most government rural development programmes were imposed on the people by faceless bureaucrats, hence the woeful failure of these programmes. However, these agricultural policies failed to address the issues they were meant to, because of lack of stakeholders (farmers) involvement in the agricultural policies. Many issues cannot be addressed or resolved by a single set of government or other decision-makers, but required cooperation between many different actors and stakeholders (Nwaobiala, 2013). In fact, it is widely believed that the successive failure of most rural development programmes in Nigeria, especially government and donor sponsored programmes stem from the inability of rural development planners and agencies to effectively involve the local people in the planning, conceptual and implementation stages. This has perpetuated a vicious cycle of underdevelopment in rural communities with the attendant cycle of poverty, malnutrition, low productivity and food shortage (Ogbonna and Nwaobiala, 2014).

In order to fill this research gap the World Bank is promoting International Fund for Agricultural Development in conjunction with Federal Government of Nigeria and Niger Delta Development Commission – Community Based Natural Resource Management Programme (IFAD/FGN/NDDC/CBNRMP). The programme is designed at reducing poverty in the Niger Delta regions, transfer of agricultural technologies in the areas of crops, livestock, agro forestry (Non - Timber Forest Products) and fisheries to benefiting farmers, ensuring adoption of these technologies, formation of viable cooperative associations, disbursement of funds for community and rural development, meeting the changing needs of vulnerable groups including men and youths, involving communities in sustaining natural resources endowed in their areas and sensitization of all sectors of the community for development
In view of the above stated facts, this study was designed to assess the effect of IFAD/FGN/NDDC/Community-Based Programme on the poverty profiles of participating and non-participating farmers in Abia State, Nigeria. Specific objectives were to:

1. describe selected socio-economic characteristics of participating and non-participating farmers in the study area.
2. determine effect of the programme on participating farmers farm size, variable inputs, farm output and farm income in the study area and;
3. determine the poverty levels of IFAD and non-IFAD farmers in the study area.

**Hypotheses**

H$_0$1: There is no significant difference in the farm size, variable inputs, farm output and farm income of IFAD and non-IFAD farmers in the study area.

H$_0$2: There is no significant difference in the poverty profiles of IFAD and non-IFAD farmers in the study area

**METHODOLOGY**

This study was conducted in Abia State which is one of the beneficiary states of IFAD/FGN/NDDC/Community-Based Natural Resource Management programme. Abia State lies between longitudes 7° 23.5 and 8° 21.5 east of the equator and latitudes 4° 47.5 and 6° 12.5 north of the Greenwich Meridian. The State is located east of Imo State and shares common boundaries with Anambra, Enugu and Ebonyi states in the north-west and north-east respectively. On the east and south-east, it is bounded by Cross River and Akwa Ibom States and by Rivers State on the south Abia State is made up of 17 local government areas and most of the people especially, the rural dwellers are engaged mainly in subsistence farming. The major crops grown include yam, cassava, maize, banana, plantain, among others (ABSPC, 2006). Multistage random sampling technique was used in the selection of local government areas (programme areas), participating communities, farmer groups and participating farmers. First, three (3) local government areas were randomly selected from the state namely; Umuahia North, Arochukwu and Ugwunagbo. Second, two (2) participating communities each were randomly selected from the three (3) LGA’s to give a total of six (6) communities. Furthermore, from the selected participating communities, two (2) farmer groups each were randomly selected, which gave a total of twelve (12) farmer groups. Finally, ten (10) participating farmers each were randomly selected from the selected farmer groups to give a sample size of one hundred and twenty (120) participating farmers. Also 120 non IFAD farmers were randomly selected from the areas were the IFAD farmers were chosen to give a grand sample size of 240 farmers. Objective 1 was analyzed with descriptive statistics such as frequency counts, mean scores, percentages while objectives 2 and 3 were realized with paired sample “t” test and poverty gap analysis respectively.

**Model Specifications**

i. The paired treatment test was used to determine the impact (effect) of the programme on the beneficiary farmers was adopted by Nwaobiala and Ezeh (2008)

\[
t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}
\]

Where “t” = Student “t” statistic

degrees of freedom = $n_1 + n_2 - 2$

$\bar{X}_1$ = sample mean for participating farmers

$\bar{X}_2$ = sample mean for non-participating farmers

$S_1^2$ = sample variance for participating farmers

$S_2^2$ = sample variance for non-participating farmers

$n_1$ = sample size for participating farmers
ii. In estimating the levels of poverty among the participating farmers, the Poverty Gap model was used in accordance with Ezeh (2007) as well as Poverty Line as follows;

\[ H = \frac{q}{n} - \quad - \quad - \quad - \quad (i) \]

Where

\[ H = \text{head count ratio} \]
\[ q = \text{number of poor participating farmers} \]
\[ n = \text{total number of participating farmers} \]
\[ l = \frac{[z - y]}{z} - \quad - \quad - \quad - \quad (ii) \]

Where,

\[ l = \text{poverty gap} \]
\[ Z = \text{poverty line} \quad \text{estimated using the mean household expenditure} \]
\[ Y = \text{average income of the poor participating farmers} \]

iii. The poverty Line used in determining poverty among participating farmers is expressed thus;

\[ Z = \frac{2}{3} (Y) \]

Where,

\[ Z = \text{poverty line measures in Naira (N)} \]
\[ Y = \text{mean of per capita household expenditure measured in Naira (N)} \]

Given that;

**Mean capita household expenditure**

\[ \frac{\text{Total per capita household expenditure}}{\text{Total number of households}} \]

**Per capita expenditure**

\[ = \frac{\text{Total monthly household expenditure}}{\text{Household size}} \]

**RESULTS AND DISCUSSION**

The socio-economic characteristics of respondents are shown in Table 1. The result reveals that 57.7% of IFAD and 54.3% of and non IFAD farmers were females. This result agrees with the findings of (Nwaobiala, Akele, Onumadu and Okoronkwo, 2009) who identified women farmers as major producers of arable crops in Rivers State, Nigeria. The table also shows that the mean age of IFAD farmers was 47.80 years while that of non IFAD farmers was 49.56 years. This implies that the farmers are in their productive ages. The mean farm size of respondents showed that IFAD farmers cultivate 2.5 hectares and non IFAD farmers cultivate 2.1. The IFAD farmers’ had 14.4 years farming experience while their counterpart had 15.6 years of experience. Farming experience has been shown to enhance participation and adoption of technologies by farmers especially in donor sponsored programmes in Nigeria (Nwaobiala, Ezeh and Unamna, 2012). Farmers realized a mean annual farm income of N201, 441.00 (IFAD farmers) and N187, 432 (non IFAD farmers), which translates to a monthly farm income of N16,786.75 (IFAD farmers) and N15,619.33 (non IFAD farmers).

<table>
<thead>
<tr>
<th>Variables</th>
<th>IFAD Participating Farmers</th>
<th>Non IFAD Participating Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (%)</td>
<td>57.7</td>
<td>54.3</td>
</tr>
<tr>
<td>Female (%)</td>
<td>42.3</td>
<td>45.6</td>
</tr>
<tr>
<td>Age (years)</td>
<td>47.8</td>
<td>49.5</td>
</tr>
<tr>
<td>Farm Size (hectares)</td>
<td>2.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Farming Experience (years)</td>
<td>14.4</td>
<td>15.6</td>
</tr>
<tr>
<td>Annual Farm income (N)</td>
<td>201,441.00</td>
<td>187,432.00</td>
</tr>
</tbody>
</table>

**Source:** Field Survey Data, 2012
Effect of IFAD/FGN/NDDC/Community-Based Natural Resource Management Programme on Beneficiaries in Abia State, Nigeria

The result of difference in farm sizes, variable inputs, farm output and farm income of Abia State IFAD and non-IFAD farmers is presented in Table 2.

Farm Sizes of Farmers

Farm sizes includes all plots or parcels of land used for arable crop production in the study area. The table reveals that the mean farm size for the participating farmers was 1.171 hectares, while that of the non-participating farmers was 0.751 hectares. The difference in mean farm size between the two groups of farmers was 0.42 hectares, while the standard deviation was 0.2602891. The result shows that the calculated “t” is 5.81 which is greater than the tabulated “t” of 2.58 and is highly significant at 1.0% level of probability. This result is not surprising, because the IFAD participating farmers were able to expand their crop based enterprise by using improved varieties. Anyanwu (2009) asserted that large farm size is as a result of increased farm outputs that were ploughed back during the next farming season.

Variable inputs of Farmers

The result of a difference in variable inputs (improved maize, okra, yam, melon, Teferia seeds, cassava cuttings, fertilizers and herbicides) used by both categories of farmers in the State were statistically compared. The result shows that the mean variable input used by participating farmers was 4244.058kg, while the non-participating farmers had a mean of 3023.844kg. The difference in mean variable input of the two groups of farmers was 1220.214kg and standard deviation of 17409.057. The result shows that the calculated “t” is 1.86, which was greater than the tabulated “t” of 1.64 which is significant at 10.0% level of probability. The result is significant at 10% level of probability. This shows that the participating farmers used variable inputs such as fertilizers, improved seeds and herbicides among others in their production process than the non-participating farmers. Ezeh (2006) asserted that the size of any farm is determined by the quantity of inputs used.

Farm Output of Farmers

The mean farm output from the participating farmers was 35388.5kg while that of the non-participating farmers was 20597.4kg. The difference in mean farm output between the two farmer groups was 14791.1kg, while the standard deviation was 395823.8. The result shows that the calculated “t” is 1.82 and was greater than the tabulated “t” of 1.64 which is significant at 10.0% level of probability. This result implies that the participating farmers had access to yield enhancing technologies than their counterparts. This result is in agreement with the findings of Nwaobiala (2010) where Agip Green River Project farmers farm output were significantly higher than the non-GRP farmers in Rivers State, Nigeria.

Annual Farm Income of Farmers

Incomes generated from the sales of farm produce from both groups of farmers indicates that the mean annual farm income of participating farmers was N308, 400.00, while that of non-participating farmers was N232, 015.80. The mean difference between the farm incomes of the two farmer groups is N76, 384.19 with a standard deviation of 47178.47. The result shows that the calculated “t” was 6.66 which is greater than the tabulated “t” of 2.58 and was highly significant at 1.0% level of probability. This implies that the participating farmers had more farm income than the non-participating farmers. This result compares favourably with Emerole, Onuoha and Nwachukwu, (2009) where farm income of livestock participating farmers under Special Programme on Food Security in Ohafia zone of
Abia State, were significantly higher than the non-participating farmers.

Table 2: Result of Paired T-test for the Difference in Farm Size, Variable Input, Farm Output and Farm Income of IFAD Participating and Non-Participating Farmers in Abia State, Nigeria

<table>
<thead>
<tr>
<th>Group Pairs</th>
<th>Group Mean</th>
<th>Standard Deviation</th>
<th>T-calculated</th>
<th>T-tabulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFADPFS</td>
<td>1.171</td>
<td>0.7875271</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIFADPFS</td>
<td>0.751</td>
<td>0.527238</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1: IFADPFS – NAFADPFS</td>
<td>0.42</td>
<td>0.2602891</td>
<td>5.81***</td>
<td>2.58</td>
</tr>
<tr>
<td>IFADPFI</td>
<td>4244.058</td>
<td>15268.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIFADPFI</td>
<td>3023.844</td>
<td>2140.957</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 2: IFADPFI – NIFADPFI</td>
<td>1220.214</td>
<td>17409.05</td>
<td>1.86*</td>
<td>1.64</td>
</tr>
<tr>
<td>IFADPFO</td>
<td>35388.5</td>
<td>822898.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIFADPFO</td>
<td>20597.4</td>
<td>427074.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 3: IFADPFO – NIFADPFO</td>
<td>14791.1</td>
<td>395823.8</td>
<td>1.82*</td>
<td>1.64</td>
</tr>
<tr>
<td>IFADFIN</td>
<td>308400</td>
<td>12496.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIFADPFIN</td>
<td>232015.8</td>
<td>77618.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 4: IFADPFIN – NIFADPFIN</td>
<td>76384.19</td>
<td>47178.47</td>
<td>6.66***</td>
<td>2.58</td>
</tr>
</tbody>
</table>

Source: Computed From Field Survey Data, 2012.

* and *** is significant at 10.00% and 1.00% levels of probability respectively.

Where;

IFADPFS = IFAD participating farmers farm size
NIFADPFS = Non-IFAD participating farm size
IFADPFI = IFAD participating farmers variable inputs
NIFADPFI = Non-IFAD participating farmers variable inputs.
IFADPFO = IFAD participating farmers farm output
NIFADPFO = Non-IFAD participating farmers farm output.
IFADFFIN = IFAD participating farmers farm income.
NIFADFFIN = Non-IFAD participating farmers farm income.

Determination of Poverty Levels among IFAD and non IFAD Participating Farmers in Abia State, Nigeria

The poverty indicators of IFAD participating and non participating farmers in Abia state is shown in Table 3. The result shows that the poverty line (mean monthly household expenditure) of IFAD farmers was N269, 733.24 per annum, with average annual income was N464,600.04, while poverty line for non IFAD farmers was N239,421.57 with average income of N375,964.01. The result also indicated that, the incidence of poverty otherwise known as the head count ratio (Ezeh, 2007) was 0.3333% for Abia IFAD farmers and 0.4521 for non IFAD farmers. This implies that 33.33 % and 45.21 % of IFAD and non IFAD farmers respectively were poor because their incomes fell short of the mean household expenditure used as the poverty line. The poverty gap also known as the income shortfall allows for the assessment of the depth of poverty among IFAD participating farmers, showing that the poverty gap of IFAD farmers was 0.2187 percent and 0.3259, meaning that IFAD and non IFAD farmers require 21.87% and 32.59% respectively of poverty lines to get out of poverty. This amounts to N 210,750.12 per annum for poor IFAD farmers and N265,674.33 for non IFAD farmers. Omonona (2010) obtained a similar result on household poverty of migrants in Nigeria.
Table 3: Poverty Gap of IFAD and Non IFAD Farmers in Abia State, Nigeria

<table>
<thead>
<tr>
<th>Items</th>
<th>IFAD Farmers</th>
<th>Non IFAD Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Household Expenditure (N)</td>
<td>269,733.24</td>
<td>239,421.57</td>
</tr>
<tr>
<td>Average Income (N)</td>
<td>464,600.04</td>
<td>375,964.01</td>
</tr>
<tr>
<td>Poverty Incidence (%)</td>
<td>33.33</td>
<td>45.21</td>
</tr>
<tr>
<td>Poverty Gap (%)</td>
<td>21.87</td>
<td>32.59</td>
</tr>
<tr>
<td>Poverty Line (N)</td>
<td>210,750.12</td>
<td>265,674.33</td>
</tr>
</tbody>
</table>

Source: Field Survey Data, 2012

CONCLUSION AND RECOMMENDATIONS

The study has shown that the programme have impacted positively on the participating farmers in relation to their farm size, variable inputs, farm output and farm income relative to non-beneficiaries. It also reveals that the poverty levels of beneficiary farmers were relatively lower than the non-participating farmers, indicating that the programme has an effect on their livelihoods.

The study therefore recommends that:
1. The programme needs to be sustained since the poverty incidence was low. In order to achieve this, stakeholders in the programme at federal, state and Local Government levels should pay their counterpart funds as and when due.
2. The programme should be replicated in other communities in the state to achieve poverty reduction in the rural areas of the state.
3. Since farm size, variable inputs, farm output and farm income were significantly different, government should review the Land Use Act of 1990 and timely supply of farm inputs to beneficiary farmers, since farming is time bound.

REFERENCES


