ANALYSIS OF GINGER FARMERS POVERTY STATUS IN KADUNA STATE, NIGERIA

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Abstract
The study assessed the poverty status among ginger rural farming households in Kaduna State, Nigeria. Specifically the study determined the poverty status of the farmers and the effects of gender access to resources on poverty status of farmers. Random sampling was used to select 250 farming households. Foster, Greer, and Thorbecke (FGT) Model was used to determine the poverty status of farmers while the logit regression was used to examine the effect of accessibility to resources on the poverty status of ginger farmers in the study area. The incidence of poverty among the sampled households was found to be high and the result of the study also revealed there were more poor households among the female farmers compared to the male farmers. The result of the study showed that increase access to resources such as land, seed and agrochemical (among male farming households) while labour, seed and fertilizer (among female farming households) reduces poverty (p<0.01). The study therefore recommends the need for policy makers and managers of poverty alleviation programmes to identify the poor at community levels so as to direct poverty alleviation project towards them. There is need for investment in agriculture so as to improve farmers’ welfare, especially the women farmers.

Key words: analysis; farmers; ginger; Kaduna state; poverty

Introduction
Poverty defies objective definition because of its multi-dimensional nature. There is no universally accepted definition of poverty but the World Bank defined Poverty as the inability to attain a minimum standard of living (Bankole et al., 2008). According to Yusuf (2000) poverty cannot be defined simply in terms of lacking access to sufficient food. It is also closely associated with a person’s lack of access to productive assets, services and markets. Without access to these, it is unlikely that production and income earning capacities can be improved on a sustainable basis. Thus, poverty refers to forms of economic, social and psychological deprivation among people.

Poverty is related to food insecurity, access to assets, services and markets: income-earning opportunities; and the organizational and institutional means for achieving those ends (Ahmed, 2004). According to Sen (2001) poverty is a complex, multifaceted concept that requires a clear analysis in all its many dimensions. The poor generally lack a number of elements such as access to land, health, justice, credit and other productive resources such as a voice in institutions and access to opportunities. Sen (2001) further explores the social, political and economic factors relating to economic inequality and poverty and concluded that a redistribution of resources, wealth, assets, and the ownership of the means of production can significantly reduce the incidence of poverty.

The incidence of poverty in Nigeria has always been high, however the
severity varies over time. Among the apparent implication of poverty is a stagnant agricultural activities and unemployment; these combined increased the incidence and depth of poverty in the country (Yusuf, 2000). On a global level, Nigeria is ranked as one of the world’s poorest countries by the Human Development Index. The incidence of poverty is still pervasive and significantly high. That people are still poor today despite the global efforts, which started in 1948 to eradicate poverty, is an indication that there are obstacles which need tackling (Yusuf, 2000).

Poverty alleviation in rural areas is significantly related to increased access to productive resources. Improved gender equality in access to productive resources not only improve nutrition, health and education outcomes, but can also have a long-lasting impact on economic growth by raising the level of human capital in societies (Adereti, 2005). Productive resources such as credit enable farmers to acquire more efficient productive assets and hence contributes to the increase in productivity and incomes, thereby contributes to poverty alleviation (Khalid, 2003). According to Iheke (2010), over 80% of the Nigerian population is classified as poor; hunger characterizes the majority of the population. Due to these challenges, smallholder farmers in Nigeria are poverty stricken. The effect of poverty in rural households are disturbing as they are easily predisposed to negative changes in environmental, socio-cultural, political and economic conditions (Msoo and Goodness, 2014).

Nigeria produces and export good quality ginger and contains less fibre which is generally preferred by Western countries. The production of ginger is basically done in southern areas of Kaduna state and the importance of ginger to the economy of Nigeria cannot be overemphasized. Apart from the local consumption of ginger, it supplies raw materials for industries internationally. Hence, the poverty situation among ginger farmers is of high importance to the economy of Nigeria. Since, a reduction in their poverty level could translate into a higher output of ginger through the availability of productive resources. Ginger is a cash crop that can alleviate poverty among the farmers in Kaduna State if they are provided with the necessary productive resources.

It was reported by Phillip et al. (2005) that, in general, reference to incidence of poverty in Kaduna State was pegged at 70%, however there is no further disaggregation of this information along sex lines. Result of this study will fill the gap of dearth of information on accessibility to productive resources and its effects on poverty status of ginger farmers in the study area. Against this backdrop, this study determined the poverty status of the farmers; effects of gender access to resources on poverty status of farmers and the assets acquired from ginger farming. Hence, the study’s hypothesis of interest is that gender accessibility to productive resources has no significant effects on the poverty status of ginger farmers.

Methodology
The study was conducted in Kaduna State which shares boundaries with Niger State to the West, Zamfara, Katsina and Kano States to the North, Bauchi and Plateau States to the East, FCT Abuja and Nassarawa State to the South. Kaduna State occupies 68,000 square kilometres
(about 7 per cent of the total land mass of Nigeria) and it is the fourth largest State by area after Niger, Borno and Taraba States (http://www.kadunastate.gov.ng/kad.html).

The State has 23 Local Government Areas namely; Birni-Gwari, Chikun, Giwa, Igabi, Ikara, Jaba, Jem'a'a, Kachia, Kaduna North, Kaduna South, Kagarko, Kajuru, Kaura, Kauru, Kubau, Kudan, Lere, Makarfi, Sabon-Gari, Sanga, Soba, Zango-Kataf and Zaria. Kaduna State is the home of Nok which gave its name to the oldest culture of Nigeria—the Nok culture (http://www.kadunastate.gov.ng/kad.html).

For this study Kachia, Kagarko and Jaba LGAs were purposively selected, due to the high level of ginger production in these places. Three villages were randomly selected from Kachia, Kagarko and Jaba LGAs. Based on the population of ginger famers in the selected villages, random sampling method was used to select 129 males and 121 female farmers.

**Foster, Greer, and Thorbecke (FGT) Model**

FGT weighted poverty index (Foster *et al.*, 1984) was used to determine the poverty status of the farmers. The *P-alpha* measures; \( P_0 \), \( P_1 \), and \( P_2 \), were used for head count, depth, and severity of poverty respectively. The three measures are all based on a single formula, but each index puts different weights on the degree to which a household or individual falls below the poverty line. The model is specified as:

\[
p_{\alpha} = \frac{1}{n} \sum_{i=1}^{q} \left( \frac{z - y_i}{z} \right)^{\alpha}
\]

Where;

- \( p_{\alpha} \) = FGT parameter, and takes on value 0, 1, 2
- \( n \) = total number of households
- \( q \) = the number of poor households whose expenditure are below poverty line
- \( z \) = denotes the poverty line
- \( y_i \) = the per expenditure of the household

If \( \alpha = 0 \), it indicates the Headcount Ratio (Poverty incidence) describing the proportion of the population that falls below the poverty line.

If \( \alpha =1 \) it gives the normalized poverty gap. This index gives a good measure of the extent or intensity of poverty as it reflects the distance the poor are from the poverty line.

When \( \alpha =2 \) in FGT, it gives the Poverty Severity Index. This index has the advantage of reflecting the degree of inequality among the poor, in the sense that the greater the inequality of distribution among the poor, the higher is \( P_2 \).

**Poverty line**

The poverty line defines the minimum level of income required for living. This study used per capita expenditure of the respondent. The poverty line that was used in this study is two-third of mean expenditure per adult equivalent. Household expenditure is considered as an adequate measure of household welfare in developing countries due to frequent fluctuation in exchange rate (Bogale *et al.*, 2005). There are several options of adult equivalent scales and different scales are used in different countries. The most commonly used is that of the organization for Economic Cooperation and Development (Glewwe, 1990; Grooteart and Braithwaite, 1998).
The adult equivalent scale is as follows:

$$EXP_n = EXP \times (0.7)^n$$

Where;
EXP = Total household expenditure
N = Household size
0.7 = exponential formation representing adults in a particular household.

Respondents whose mean per capita expenditure is equal or greater than 2/3 are non-poor, while the respondent whose per capita expenditure is less than 2/3 is considered to be poor.

**Logit Model**

Logit was used to examine the effect of accessibility to resources on the poverty status of ginger farmers in the study area.

$$Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + U$$

Where:
Y = Poverty status of the farmers; 1 = poor and 0 = non poor
X1 = Labour availability (number of people)
X2 = Land (ownership of land; 1 = yes and 0 = no)
X3 = Seeds (access to seeds; 1 = yes and 0 = no)
X4 = Fertilizer (access to fertilizer; 1 = yes and 0 = no)
X5 = Agrochemicals (access to agrochemicals; 1 = yes and 0 = no)
U = Error term
\(\alpha_0\) = Constant term
\(\beta_1-5\) = Regression coefficients.

**Results and Discussions**

**Poverty Status of the Ginger Farmers**

Poverty line in this study was determined by using two thirds of the mean expenditure of the respondents to establish a poverty line of ₦1308.48 and ₦1187.93 for male headed households and female headed households respectively. Sixty percent (60%) of the male households and 32% of the female households were non-poor, 40% male and 68% of the female headed households were poor. This result is consistent with the findings of UNDP (2004) and IFAD (2001), that 70 percent of the world’s poorest people are women. The result is similar to Ume and Ochiaka (2016) findings; that female households are more likely to be poverty incapacitated than the male counterpart. This is because the male household is often more energetic to strive for livelihood sustenance as well has more access to factors of production such as land in order to improve on his family income (Babatunde, 2007).

Figures 1 and 2 depicts the poverty incidence, depth and severity to be 40, 24 and 16%; respectively among the male farmers and 68, 51 and 17% respectively among the female farmers in the study area. In terms of depth of poverty, the poor male farmers will need 24% increase in their per capita expenditure to reach the poverty line of ₦1308 while the poor female farmers will require about 51% increase in their per capita expenditure to reach the poverty line of ₦1187.

The result of this study revealed there were more poor households among the female farmers compared to the male farmers. This finding may be attributed to reasons such as; women are more vulnerable to poverty because of gender inequalities in the distribution of income, access to productive inputs such as credit; control.
over earned income, as well as gender bias in labour markets. The result of this study is in consonance with Valentine, (2005) that gendered dimensions of structural poverty are often rooted in a legal and cultural framework which denies women access to productive resources. However, study of Adekoya (2014) revealed incidence of poverty to be higher among male headed households (60%) relative to female headed households (58.3%). The reason based on the fact that majority of the female headed households were engaged in secondary occupation such as trading which tend to generate additional income for the households.

The effect of gender accessibility to resources on the poverty status of ginger farmers

The Logit results as shown in Table 1 indicate the effect of accessibility to productive resources on the poverty status of the farmers. Coefficients of land (-366.90) seed (-8.712) and agrochemical (-9.872) of the male ginger farmers were found to be statistically significant at 1% level of probability with a negative sign. The negative sign of the significant variables implied; the more male farmers have access to these resources, the less exposure of the farmers to poverty. This is attributed to the fact that accessibility to these resources would likely increase the productivity of the farmers thereby alleviating their poverty status. Resources are the key considerations for rural livelihoods. Rural households negotiate their livelihoods by obtaining access to land, labour, capital, knowledge and market, which leads to enhanced and sustained family well-being (Valdivia and Gilles, 2001).
Table 1: Effect of gender accessibility to resources on the poverty status of male farmers

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-4.371</td>
<td>0.141</td>
<td>-31.001***</td>
</tr>
<tr>
<td>Labour</td>
<td>-32.865</td>
<td>43.853</td>
<td>-0.749</td>
</tr>
<tr>
<td>Land Size</td>
<td>-366.90</td>
<td>119.540</td>
<td>-3.069***</td>
</tr>
<tr>
<td>Seed</td>
<td>-8.712</td>
<td>0.295</td>
<td>-29.532***</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>2.253</td>
<td>4.906</td>
<td>-0.459</td>
</tr>
<tr>
<td>Agrochemical</td>
<td>-9.872</td>
<td>3.135</td>
<td>-3.149***</td>
</tr>
</tbody>
</table>

Numbers of observation = 129
Log likelihood ratio test = 63.259
F-distribution = 71.224
R-square = 0.58

*** = Significant at P<0.01

Table 2: Effect of gender accessibility to resources on the poverty status of female farmers

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-5.282</td>
<td>0.138</td>
<td>-38.275***</td>
</tr>
<tr>
<td>Labour</td>
<td>-1.265</td>
<td>0.251</td>
<td>-5.040***</td>
</tr>
<tr>
<td>Land Size</td>
<td>1.447</td>
<td>0.350</td>
<td>4.134***</td>
</tr>
<tr>
<td>Seed</td>
<td>-8.712</td>
<td>4.107</td>
<td>-2.121**</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>-0.226</td>
<td>4.906</td>
<td>-0.046</td>
</tr>
<tr>
<td>Agrochemical</td>
<td>2.203</td>
<td>1.713</td>
<td>1.286</td>
</tr>
</tbody>
</table>

Numbers of observation = 121
Log likelihood ratio test = 81.003
F-distribution = 91.412
R-square = 0.64

*** = P<0.01

Table 2 indicate coefficients of land (-473.94) labour (-1.265) and seed (-8.712) of the female farmers was found to be statistically significant with a negative sign. The negative sign of land (-473.94) labour (-1.265) and seed (-8.712) indicates; the more female ginger farmers have access to these resources, the less exposure to poverty. This is attributed to the fact that accessibility to these resources would likely increase the productivity of the women, consequently leading to a decrease in the poverty status of the women. This finding corroborates with Adereti (2005) that Poverty alleviation in rural areas is significantly related to increased access to productive resources. The hypothesis that gender accessibility to productive resources has no significant effects on the poverty status of ginger farmers was rejected at P<0.01 and P<0.05 level of significance. Based on the logit result on Tables 1 and 2, accessibility to productive resources has effect on the poverty status of the farmers significantly.

Farmers’ Acquired Assets

IFAD (2001), states that increasing access to assets is crucial for growth and poverty reduction. Results in Table 3 showed the farmers owned one assets or the other as a result of ginger production. More than half of the male (64%) and female (56%)
ginger farmers had source of lightening. In the case of sources of cooking fuel, virtually all the farmers used firewood. The reliance on forest tree for fuel could further compound the problem of desertification and deforestation which could be hazardous to agricultural production in terms of erosion and lose of soil fertility with a negative implication on farmers output and income. Ninety-three percent (93%) of the male and 91% of the female ginger farmers possessed mobile phone. The large number of farmers with mobile phone is an advantage to their activities in ginger production because it will enhance their accessibility to information on ginger production and marketing. Possession of land was higher (64%) among the male ginger farmers while low percentage (7%) of the female farmers had land. This could be associated to the fact that these women are widows and could not save much to acquire land. FAO (2011) had similarly reported that in Africa, under customary law women were given access to communal or family land (although women often would be deprived of this access through divorce or widowhood). Similarly, it was observed that large number of male farmers (98.45) possessed furniture. Possessions of household items such as kitchen utensils, detergents, pomade, toothpaste, kerosene were significantly noticed among the farmers. This revealed that ginger production among the two groups of farmers enhances their ability to purchase these items which revealed the status of their living condition, except for the non-possession of cars and houses among the farmers. This implied that, if farmers cultivate more land, have access to inputs, there is the likelihood of generating more income from ginger production; thus, improving the farmers living condition. Amoke et al. (2011) were also of the view that, in rural areas of developing countries (Nigeria inclusive), nearly 75% of the populations live in rural areas; characterised with a state of human deprivation of many social needs especially incomes, clothing, housing, health care, education and sanitary facilities.

Conclusion and Recommendations
The reduction of poverty globally has been a major agenda since September, 2000 when the United Nations’ member countries signed the Millennium declaration and set their commitments to achieve the Millennium Development Goals (MDGs). The 1st of the eight MDGs is to eradicate poverty and hunger with a target to halve the number of people living on less than one dollar a day. The production of ginger is basically done in southern areas of Kaduna state and the importance of ginger to the economy of Nigeria cannot be overemphasized. Hence, poverty alleviation among ginger farmers is of high importance to the economy of Nigeria. Since, a reduction in their poverty level could translate into a higher output of ginger through the availability of productive resources. In this study, it was found that about 40% of the male and 68% of the female farmers lived below the poverty line. There is need for policy makers and managers of poverty alleviation programmes to identify the poor at community levels so as to direct poverty alleviation project towards them. There is need for investment in agriculture so as to improve farmers’ welfare, especially women.
Table 3: Distribution of ginger farmers based on assets acquired

<table>
<thead>
<tr>
<th>Assets</th>
<th>Male Frequency*</th>
<th>Percentage</th>
<th>Female Frequency*</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firewood cooking</td>
<td>127</td>
<td>98.45</td>
<td>121</td>
<td>100</td>
</tr>
<tr>
<td>Source of lighting</td>
<td>83</td>
<td>64.34</td>
<td>68</td>
<td>56.2</td>
</tr>
<tr>
<td>Mobile phone</td>
<td>120</td>
<td>93.02</td>
<td>111</td>
<td>91.74</td>
</tr>
<tr>
<td>Possession of land</td>
<td>83</td>
<td>64.34</td>
<td>9</td>
<td>7.43</td>
</tr>
<tr>
<td>Bicycle</td>
<td>17</td>
<td>13.18</td>
<td>5</td>
<td>4.13</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>87</td>
<td>67.44</td>
<td>60</td>
<td>49.59</td>
</tr>
<tr>
<td>Radio</td>
<td>87</td>
<td>67.44</td>
<td>27</td>
<td>22.31</td>
</tr>
<tr>
<td>Kitchen utensils</td>
<td>125</td>
<td>96.89</td>
<td>117</td>
<td>96.69</td>
</tr>
<tr>
<td>Furniture</td>
<td>127</td>
<td>98.45</td>
<td>6</td>
<td>4.95</td>
</tr>
<tr>
<td>Kerosene</td>
<td>121</td>
<td>93.79</td>
<td>115</td>
<td>95.04</td>
</tr>
<tr>
<td>Detergent</td>
<td>127</td>
<td>98.45</td>
<td>116</td>
<td>95.88</td>
</tr>
<tr>
<td>Pomades</td>
<td>127</td>
<td>98.45</td>
<td>116</td>
<td>95.88</td>
</tr>
<tr>
<td>Toothpaste</td>
<td>128</td>
<td>99.22</td>
<td>118</td>
<td>97.52</td>
</tr>
<tr>
<td>Transportation</td>
<td>127</td>
<td>98.45</td>
<td>116</td>
<td>95.88</td>
</tr>
</tbody>
</table>

* Multiple response

References


Kaduna State Government www.kadunastate.gov.ng/kad.html


