Socio-Economics and Food Security of Farming Families in South East Nigeria

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Abstract
Farming families in Nigeria have to cope with food supply shortages, price fluctuation and pressure to get ‘more’ out of thinned out resources especially land. Some of the reasons for this situation include poverty, near absence or inadequate infrastructure, population explosion and unstable macro-economic environment. The south east Nigeria is generally densely populated with an average of 480 people per square kilometre. However, there exist in some areas an imbalance of the population distribution even within the same locality which has implications for resource availability and capacity. This study examines families’ ownership and access to resources such as land, labour and capital; the impact to these on family living standard and household food security (supply and access). To achieve this, the Farming systems approach is used. The farm-family-household system is considered as a whole which ensures that the overlaps between the sub units are considered. 105 randomly selected families were interviewed. These were eventually clustered into two main groups-The Resource Rich and Resource Poor. Descriptive, comparative and econometric analyses were carried out. Result show that income of the two groups differ significantly, in both cases off-farm income plays an important role. The farming systems in highly populated areas have relatively smaller resources and capacity base, are crop oriented and have a lower living standard. They sell more of their outputs but purchase less to meet household food supply. The farming systems located in low/medium populated areas expend more on market supply purchases though they have more land resources. Both groups show desire for more food in terms of increased meals per day, quantity of food eaten; and a need for better quality. There is clear indication that access to food either through own supply or market purchase is not a guarantee of food security for both groups.

1. Introduction
Rural families continue to face poor economic conditions which impact on their living standards and food security situation. The returns to land in terms of output have been on the decrease especially where increased population and non agricultural uses compete for land. This further creates gaps in resource availability among the poor. The impact of this is far reaching in that the food situation gets worse; farms are being abandoned to the elderly or for off-farm jobs. Yet the income from off-farm activities is not enough to meet families’ needs. Thus the situation calls for a guided change. This requires that the current socio-economic conditions be known, and that particular factors which affect the families differently be understood. More importantly, the people concerned need to express their views. The aim of this paper is to present the similarities or differences in the conditions of people who face the same economic situation, their perceptions and make policy recommendations that will direct the development positively.
2. RESEARCH METHODOLOGY

2.1 Data Collection
Imo state was purposely chosen based on knowledge of the prevailing situation. A Random sampling of local governments areas was carried out from which four out of 27 were chosen. From the four local governments, a total of 8 villages were chosen. Finally the 105 families interviewed were randomly selected based on the lists provided by village heads and leaders. Primary data were obtained with use of structured Questionnaire. The respondents were further divided into two groups using a hierarchical clustering method. The two groups are:

**Resource Rich Families:** These are located in villages which are close to urban areas. They have proximity to the capital cities Owerri and Umuahia. There are also major access roads to these villages. The population density is low compared with the other regions.

**Resource Poor Families:** These are located in more remote areas and are densely populated.

2.2 Econometric Analysis
In addition to descriptive and comparative analyses, econometric analysis was carried out to examine the effects of factors on food supply. The general linear model was used to quantify these effects because it provides regression analysis and analysis of variance for multiple dependent variables by one or more factor variables or covariates. It tests the null hypotheses about:
* Effects of factor variables on the means of various groupings of a joint distribution of dependent variables; and
* Investigate interactions between factors as well as the effects of individual factors; in addition the effects of covariates and covariate interactions with factors can be included.

In the model subsistent supply and overall food supply are expressed in caloric terms. The functional form is given below:

\[
YM = Xb + e 
\]

(i)

Here \( Y, X, b, \) and \( e \) are as described for the multivariate regression model and \( M \) is an \( m \times s \) matrix of coefficients defining \( s \) linear transformation of the dependent variable.

3 The Study Area
Imo State was chosen from the region then four local government areas were selected based on its former geographical structure. Orlu is situated at the north west of Imo State or north of Owerri; Umuahia /Ndoro is situated in the southeast of Imo State and southeast of Owerri. Ehime Mbano is northeast or northcentral of the state. But it is northeast of Owerri. Abob Mbaise is central in Imo and east of Owerri. The total area of Imo is 12,689 square kilometers. The major cities are Owerri, Aba, Umuahia and Orlu. Rainfall has a significant impact on agricultural activities. Excess rain in the region leads to high runoff, soil erosion, nutrient losses through leaching and water logging. Too little rainfall limits agricultural activities to 2 or 3 months without supplementary irrigation.
4 Results and Discussion

4.1 Socio-Economic Description of Farm Families

Human resources available to the farm family determine the minimum subsistence and cash requirement level. The educational level is low in the area which limits opportunities for taking advantage of better off-farm activities. Often family labour resources are used on and off-farm; the off-farm wage rate is higher than the current returns to labour use on farm. As a result more labour is allocated off-farm and the families depend more on off-farm activities. Efficiency of land resource is limited by erosion, soil infertility and land degradation. These are endemic problems in the area as a result of increasing population density, deforestation, inherent nature of the soil, improper cultivation practices like slash and burn and inadequate use of mineral fertiliser. Land is obtained mainly by inheritance. Other sources include renting and purchasing. Rented land limits investment and type of crops cultivated. It also makes the renter dependent on the good will of the resource owner; he may have to carry out special services for the land owner. Own capital resource is derived from savings, assets and land. The value is relatively little and confirms that families depend on external sources like cooperatives. Informal credit is the main source of credit; often the conditions in terms of interest rates and payment period are flexible. The dearth of formal banking services in the rural areas is based on the fact that they are often expensive and unprofitable to process. Respondents who have made attempts at securing loans were turned down for reasons such as lack of collateral. This makes involvement in cooperatives more attractive especially among the Resource Poor. Crop production is the major source of farm income. Further analysis shows that land is more efficiently used among the Resource Poor who are located in the more densely populated area. Livestock equally holds a high potential for income generation but space and cash requirement limits its production. The health situation for both groups is poor due to inadequate infrastructural facilities, personnel and families’ habits of self medication. The families’ living standard confirm dependence on resource owners especially land water, credit.

4.2 Perception of Food Security

It can be deduced from the responses that, less severe food insecurity is characterised by qualitative compromises in food selection and consumption and possibly anxiety related to food sufficiency. A quantitative compromise in food intake and the attendant sensation of hunger occur as resources become increasingly depleted. The most severe stage, of not eating at all is not reported by any of the families (see figure 1). A clear fact noticed from this continuum of severity, is that food security situation also has defined psychological and social manifestations. It is important to consider the dimensions and the severity of what is most important in each cluster or farming system.
4.3 Results of the Econometric Analysis

Among the Resource Rich total output and days lost to illness have effects on both subsistence supply over all food supply. But the effects of output are higher in both cases. This could be traced through the productivity chain. Days lost to illness affect productivity which in turn affects output or returns to labour in terms of yield (Table 1). Though total output has a positive impact on caloric supply as expected among the Resource Poor, the household food expenses have a negative impact. This could be interpreted to mean that cash is scarce and does not bring equitable values in food purchases. It actually also reflects the market situation that they face. Days lost to illness are not significant in this case (Table 2).

Table 1: Estimates of the effects of factors influencing the quantity of calories available to rural families—Resource Rich—Imo state, South east Nigeria, 2003

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<thead>
<tr>
<th></th>
<th>Estimates</th>
<th>Eta²</th>
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<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Intercept</td>
<td>-12577.7**</td>
<td>61662.4***</td>
</tr>
<tr>
<td>Total Output</td>
<td>284.32**</td>
<td>279.67***</td>
</tr>
<tr>
<td>Days of illness</td>
<td>-11943**</td>
<td>-13224.5***</td>
</tr>
</tbody>
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Notes: *Significant at 90% confidence interval ** Significant at both 95% and 90% confidence interval.
Subsistence SS (A) $R^2 = 0.94$ Adjusted $R^2 = 0.94$ Total Food Supply (B) $R^2 = 0.94$ Adjusted $R^2 = 0.93$.

Table 2: Estimates of the effects of factors influencing the quantity of calories available to rural families in Imo state, south east Nigeria, 2003

<table>
<thead>
<tr>
<th></th>
<th>Estimates</th>
<th>Eta²</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Total Output</td>
<td>4805.5**</td>
<td>4904**</td>
</tr>
<tr>
<td>Household Expenses Food</td>
<td>-2.94**</td>
<td>-3.375**</td>
</tr>
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Notes: *Significant at 90% confidence interval ** Significant at both 95% and 90% confidence interval.
Subsistence SS (A) $R^2 = 0.644$, Adjusted $R^2 = 0.63$; Total food supply(B) $R^2 = 0.654$, Adjusted $R^2 = 0.64$

5. Conclusion

The results clearly show that the families’ living standard differs and is related to the returns to family’s own resource. The food situation is worse for the Resource Poor who show that they eat less and depend more on staples produced. Caloric intake is affected by the overall out put in both groups. Health situation and household expense on food are important factors that limit caloric
availability. The empirical results suggest that food security situation can be improved significantly by creating better economic environment for farm families. The Resource Poor need credit assistance. Improvement in the available health facilities will lead to increased productivity in the long run.

References

