Socio-Economic Impact of Ogun River on Food Security at Opeji Village, Nigeria


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Abstract
This study was carried out in Opeji village, Odeda local government, Ogun state with the aim of determining the socio-economic impact of Ogun River on food security using well structured questionnaires, oral interviews and personal observations to collect data from fifty respondents. The objectives of study were to determine the net income profitability and marketing efficiency index and determination of the cost components of fish marketing. The results revealed that 32% earn between N10,000 ($47.62) and N100,000 ($476.19) and 34% earn between N101,000 ($480.95) and N200,000 ($956.38). Bivariate correlation result revealed that sufficient quality but not the type of food wanted was significantly (P<0.05) related to the type of food wanted and the quality of food available. Food bought with available money and the inability to get to the market had a significant (P<0.05) relationship on hunger but didn't have money to secure food for the household. Sufficient quality of various kind of food had a negative significant (P<0.05) relationship on type of food wanted. Also income from fishing activity had no impact on food security of the house thereby making the impact of Ogun River not significant to the food security of the people in Opeji village because very few are fishers. The water body (Ogun River) however had significant (P<0.05) relationship on the source of water for the village as 92% of the respondents solely depend on it as their water source.

Keywords: Fishing Activities, Income Generation, Health Issues, Food Security and Ogun River

INTRODUCTION
Fishing settlements represent one of the oldest forms of community living known to mankind. In these settlements, fishers including children, men and women have evolved over time, different crafts, skills and technologies for fishing and for day to day survival (Williams, 1987). There is often very little precise information about the real contribution of small-scale fisheries to livelihoods and economies in developing countries, and although many small-scale fishing communities are poor and vulnerable, it is now widely acknowledged that small-scale fisheries can generate significant profits, prove resilient to shocks and crises, and make meaningful contributions to poverty alleviation and food security (FAO, 2005)

The problems of hunger and food insecurity have global dimensions and are likely to persist and even increase dramatically in some regions, unless urgent, determined and concerted action is taken, given the anticipated increase in the world’s population and the stress on natural resources (FAO, 1996). The persistence of hunger in the developing world means that ensuring adequate and nutritious food for the population will remain the principal challenge facing policy makers in many developing countries in the years to come (Stamoulis et al., 2004).

Focus on food security ensures that the basic needs of the poorest and most vulnerable groups are not neglected in policy formulation (Ajibola, 2000). This is because food security is one of the several necessary conditions for a population to be healthy and well nourished (Nord et al., 2001). Low average per capita food intake, as well as energy, constitutes perhaps the greatest obstacles to human and national development in Nigeria (Igene et al., 1997).

Fish protein comprise all the ten essential amino acids in desirable strength for human consumption. Nigeria is endowed with inland water bodies being used by small scale fish holders here in, we have fish (renewable natural resource) which should be exploited rationally on sustainable basis. The contribution of the fisheries sector to the National economy is largely positive but there is the need to further determine the contribution of artisanal fishing activity to food security. Therefore, this study aims to understand the contribution of Ogun River on the food security of the people living in Opeji village. The specific objectives of the study are:
1. Determination of the net income profitability and marketing efficiency index.
2. Determination of the cost components of fish marketing.

MATERIALS AND METHODS

Study Area
The study was conducted at Opeji village located in Ogun State of Nigeria. It lies on the extreme corner of the Northern part of Odeda Local Government Area. It is surrounded by a rural community of about 250 villages and hamlets located scantily over an area of approximately 105,322sq kilometres. Lot of the people living in the area are farmers due to the vegetation of the area which is more of Savannah type while few are fishers. Ogun State is situated within the tropic region and covers an area of about 16,369,378 square kilometers, and it occupies approximately 1.78% of the Country’s total land area which is 923,778 square kilometers. It is one of the eight coastal (maritime states of the country, with a 15kilometers coastline on its South-Eastern part in the Ogun water side Local Government Area Ogun State is bordered on the South by Lagos State, on the East by Ondo State, in the North by Oyo and Osun States, and on the West by the Republic of Benin.

Data Collection
The data was collected through field survey. Questionnaire was designed to collect a comprehensive profile of socioeconomic profile of the people living in Opeji village. 50 structured questionnaires and personal interviews were used to collect data. The role of Ogun River on food security and income generation of people living in the village was extensively covered. The questionnaire also covered demographic characteristics.

Data Analysis
The study was carried out in Opeji village in Ogun river in Odeda Local Government Area of Ogun State, Nigeria. The sampling technique employed for this study were primary data collected from fifty (50) respondents through field survey with structured questionnaires, oral interviews and personal observations were fit for analysis. Questionnaire was designed to collect a comprehensive profile of socioeconomic profile of the people living in Opeji village. The role of Ogun River on food security and income generation of people living in the village was extensively covered as well as demographic characteristics.

Data collected were subjected to descriptive statistical analysis using frequency and percentage distribution to analyse the responses gotten from the respondents. The data was also subjected to bivariate correlation and ANOVA analysis to determine the relationship between food security and fishing.

RESULTS

Figure 1 shows that 92% of the respondents depended solely on Ogun River as their water source. 4% of the respondents rarely had sufficient quality of various kinds of food wanted, 36% sometimes have enough quality of food wanted and 60% of the respondents often had sufficient quality of various kinds of food (Figure 2).

Figure 3 shows that 66% of the respondents sometimes had enough quality of food but not the type of food they wanted while 18% rarely had sufficient quality of various kinds of food but not the type of food wanted. The percentage distribution of household according to the availability of sufficient quantity but not the type of food wanted is shown in Figure 4. 26% of the respondents rarely had the type of food wanted but not enough quality, 46% sometimes had the type of food wanted but not enough quality, 18% of the respondents often had the type of food wanted and insufficient quality and 38% sometimes do not have the type of food wanted and sufficient quality (Figure 5).

Figure 6 illustrate the percentage distribution of the respondents according to inadequate time for shopping. 40% of the respondents rarely had the enough time for shopping, 38% of the respondents sometimes did enough time for shopping.42.0% of the respondents often had problems with cooking facility while 28% are indifferent, figure 7. Figure 8 shows that 48% of the respondents could not often cook due to health problems.
Figure 2: Household food security (sufficient quality of various types of food wanted)

Figure 3: Household food security (sufficient quality but not the type wanted)

Figure 4: Household food security (Type of food wanted but not enough quality)

Figure 5: Household food security (Not type of food wanted and not enough quantity)
Source: Field survey, 2012

Figure 6: Household food security (Not enough time for shopping)

Figure 7: Household food security (Had a problem with cooking facility)
From the correlation result (Table 3), household income have no significant ($P>0.05$) impact on sufficient quality of various type of food wanted, type of food wanted but not enough quality, sufficient quality of food but not the type wanted and not the type of food wanted and not enough quantity. It also has no significance ($P>0.05$) impact on various reason such as the inability to secure fund, the inability to get to market, cooking facility problem, inability to cook due to health problem and inability to secure food that would last the house hold.

It further revealed that income from fishing has no significant ($P>0.05$) relationship on house hold size, house hold income, sufficient quantity of food of various type wanted, type of food wanted but not enough quality, sufficient quality of food but not the type wanted and not the type of food wanted and not enough quantity.

Sufficient quality of various kind of food wanted also have no significant ($P>0.05$) impact on house hold income, type of food wanted but not enough quality and sufficient quality of food but not the type wanted. It also has no significance ($P>0.05$) impact on various reason such as the inability to secure fund, the inability to get to market, cooking facility problem, inability to cook due to health problem and inability to secure for that would last the house hold. Sufficient quality of various kind of food wanted however have a negative significant ($P<0.05$) impact on type of food wanted but not enough quality.

Sufficient quality but not the type of food wanted have no significant ($P>0.05$) impact on house hold income, sufficient quality of various type of food want, type of food wanted but not enough quality and not the type of food wanted and not enough quantity. It also has no significance ($P>0.05$) impact on various reason such as the inability to secure fund, the inability to get to market, cooking facility problem, inability to cook due to health problem and inability to secure for that would last the house hold. From table 2, Sufficient quality but not the type wanted however had a significant ($P<0.05$) on Not type of food wanted nor enough quality of other.

From the correlation result (Table 3), not type of food wanted nor enough quality of other food available had no significant ($P>0.05$) impact on house hold income, sufficient quality of various type of food want, type of food wanted but not enough quality and sufficient quality of food but not the type wanted. It also has no significance ($P>0.05$) impact on various reason such as the inability to secure fund and inability to secure for that would last the house hold. This variable however had a significant ($P<0.05$) impact on not enough money for quantity food that is needed. It also had a significant ($P<0.01$) impact on the inability to get to market, cooking facility problem, inability to cook due to health problem.

The correlation result revealed that, not enough money for required quantity of food needed had no significant ($P>0.05$) impact on house hold income, sufficient quality of various type of food want, type of food wanted but not enough quality, sufficient quality of food but not the type wanted and not the type of food wanted and not enough quantity. It also has no significance ($P>0.05$) impact on various reason such as the inability to secure fund for that would last the house hold. It however had a significant impact on the inability to get to market, cooking facility problem, inability to cook due to health problem.

Table 3 shows that the inability to get to market however had a significant ($P<0.05$) impact on hungry but didn’t eat because of not been able to afford food. It also had a significant ($P<0.01$) impact on cooking facility problem, inability to cook due to health problem. The inability to get to market however had a significant ($P<0.05$) impact on hungry but didn’t eat because of not been able to afford food. It also had a significant ($P<0.01$) impact on cooking facility problem, inability to cook due to health problem.

Too hard to get to the store market to get required quantity of food needed have no significant ($P>0.05$) impact on house hold income, sufficient quality of various type of food want, type of food wanted but not enough quality, sufficient quality of food but not the type wanted and not the type of food wanted and not enough quantity. It also has no significance ($P>0.05$) impact on various reason such as the inability to secure fund and inability to secure for that would last the house hold.

Had a problem with cooking facility have no significant ($P>0.05$) impact on house hold income,
sufficient quality of various type of food want, type of food wanted but not enough quality, sufficient quality of food but not the type wanted and not the type of food wanted and not enough quantity. It also has no significance (P>0.05) impact on various reason such as the inability to secure fund, the inability to get to market, inability to cook due to health problem and inability to secure for that would last the house hold. It however had a significant (P<0.01) impact on the inability to cook due to health problem

Not able to cook due to health problems have no significant (P>0.05) impact on house hold income, sufficient quality of various type of food want, type of food wanted but not enough quality, sufficient quality of food but not the type wanted and not the type of food wanted and not enough quantity. It also has no significance (P>0.05) impact on various reason such as the inability to secure fund, the inability to get to market, cooking facility problem and inability to secure for that would last the house hold.

The correlation result revealed that food bought just didn't last and we didn't have money to get more had no significant (P>0.05) impact on house hold income, sufficient quality of various type of food want, type of food wanted but not enough quality, sufficient quality of food but not the type wanted and not the type of food wanted and not enough quantity. It also has no significance (P>0.05) impact on various reason such as the inability to secure fund, the inability to get to market, cooking facility problem and inability to secure for that would last the house hold. It however had a significant (P<0.01) impact on inability to cook due to health problem.

Hungry but didn't eat because of not been able to afford food have no significant (P>0.05) impact on house hold income, sufficient quality of various type of food want, type of food wanted but not enough quality, sufficient quality of food but not the type wanted and not the type of food wanted and not enough quantity. It also has no significance (P>0.05) impact on various reason such as the inability to secure fund, the inability to get to market, cooking facility problem and inability to secure for that would last the house hold. It however had a significant (P<0.01) impact on inability to cook due to health problem.

HYPOTESIS TESTING

HO1: There is significant relationship between income from fishing activities and food security

HO2: There is no significant relationship between income from fishing and food security

DECISION RULE: Reject Ho if p - value is < 0.05 asymp. Sig (2 sided); otherwise accept Ho and reject H1. This hypothesis was tested using the Pearson chi-squared statistical instrument whose formula was given as

\[ \chi^2 = \sum \frac{(O-E)^2}{E} \]  

(Lowry 2000)

Table 3 shows that there is no significant (P> 0.05) impact of income from fishing on : Household income, Sufficient quality of various kind wanted, Type of food wanted but not enough quality, Type of food wanted but not enough quality of other, Not type of food wanted nor enough quality of other, Not enough money for required quantity needed, Too hard to get to the market, Had a problem with cooking facility, Not able to cook due to health problems, Food bought just didn't last and didn't have money to get more and Hungry but didn't eat because of not been able to afford food.
TABLE 4: Pearson chi-square Test for effect of Income from fishing on household food security

<table>
<thead>
<tr>
<th></th>
<th>Df</th>
<th>Asymp.sig.(2-sided)</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household income</td>
<td>12</td>
<td>0.241</td>
<td>Reject HO</td>
</tr>
<tr>
<td>Sufficient quality of various kind wanted</td>
<td>4</td>
<td>0.559</td>
<td>Reject HO</td>
</tr>
<tr>
<td>Type of food wanted but not enough quality</td>
<td>8</td>
<td>0.466</td>
<td>Reject HO</td>
</tr>
<tr>
<td>Sufficient quality but not the type wanted</td>
<td>6</td>
<td>0.380</td>
<td>Reject HO</td>
</tr>
<tr>
<td>Not type of food wanted nor enough quality of other</td>
<td>4</td>
<td>0.148</td>
<td>Reject HO</td>
</tr>
<tr>
<td>Not enough money for required quantity needed</td>
<td>5</td>
<td>0.735</td>
<td>Reject HO</td>
</tr>
<tr>
<td>Too hard to get to the market</td>
<td>6</td>
<td>0.109</td>
<td>Reject HO</td>
</tr>
<tr>
<td>Had a problem with cooking facility</td>
<td>6</td>
<td>0.863</td>
<td>Reject HO</td>
</tr>
<tr>
<td>Not able to cook due to health problems</td>
<td>6</td>
<td>0.899</td>
<td>Reject HO</td>
</tr>
<tr>
<td>Food bought just didn't last and didn't have money to get more</td>
<td>6</td>
<td>0.629</td>
<td>Reject HO</td>
</tr>
<tr>
<td>Hungry but didn't eat because of not being able to afford food</td>
<td>6</td>
<td>0.377</td>
<td>Reject HO</td>
</tr>
</tbody>
</table>

Decision criterion is to reject null hypothesis when P<0.05 of a degree of freedom.

DISCUSSION
The study assessed the socio-economic impact of Ogun River on food security at Opeji village, Abeokuta, Nigeria. Most of the respondents in the study area were males (66%) and within the age range of < 20 – 40 representing 50% of the fraction of the population, an age in which they are considered highly productive and active to undertake strenuous task associated to the fishing enterprise which is in accordance with Bello, (2000) who ascertain that age has positive correlation with acceptance of innovation and risk taking. The female had a population of 11% with 2% participating in fishing activity which agrees with Williams, (2002) who ascertain that a number of socio-cultural factors, restricted access to water resources, low technical know-how and lack of credit facilities limit women full participation in the small-scale fisheries sector.

Most of respondent (54%) falls within the household range between 1 and 5, 38% falls within a household range between 6 and 10, 6 % falls within a range between 11 and 15. This finding at Opeji village is at variance with the findings of Eboh (1995) who observed that there is a preponderance of large family sizes among the poor in rural areas.

From the result it was observed that 92% of the population solely depends on OgunRiver as a source of water while the water body partially serve 8% of the population. This is in accordance with a research that concluded the evaluation of sustainable water demand in a coastal environment using WEAP model that “River Ogun, Opeki and Oyan are vital source of freshwater for economic activities that include agricultural, industrial and commercial purposes” by Ojekunle et al. (2011).

The correlation result reveals that the following variables had either positive or negative and had a significant (P< 0.05) impact on food security:

Sufficient quality but not the type wanted had a significant (P<0.05) on Not type of food wanted nor enough quality of other, this is in accordance with a model proposed by Craig and David et. al., (2005) that food hardships should be negatively associated with food consumption and positively associated with food needs. It however had no significant (P>0.05) impact on household income which is in accordance with Bicke et. al., (2000), “who stated that traditional income and poverty measures do not provide clear information about food security” “although food insecurity is closely linked with poverty” (Nord et al., 1999), sufficient quality of various type of food want, type of food wanted but not enough quality, sufficient quality of food but not the type wanted and not the type of food wanted and not enough quantity. This variable had a positive coefficient that had a significant impact on not enough money for quantity food that is needed at 5%.

Food bought just didn't last and we didn't have money to get more had a positive significant (P< 0.05) impact on hungry but didn't eat because of not been able to afford food for the household. This was in line with the findings of Craig and David (2005) that there are higher incidence of food problems among poor and near-poor households due to lower resources available for food purchases. It however had no significant impact on other variables. The inability to get to market had a significant (P<0.05) impact on hungry but didn't eat because of not been able to afford food but had no significant (P>0.05) impact on house hold income. This is in line with the sturdy carried out by Economic Research Service (ERS), the Food and Nutrition Service (FNS), the Cooperative State Research, Education,
and Extension Service (CSREES) of the U.S. Department of Agriculture under the direction of Michele VerPloeg of ERS on Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences (2009).

Sufficient quality of various type of food want, type of food wanted but not enough quality, sufficient quality of food but not the type wanted and not the type of food wanted and not enough quantity. Sufficient quality of various kind of food wanted however have a negative significant (P<0.05) impact on type of food wanted but not enough quality meaning that it is not possible for this two variable to coexist in one household.

Pearson chi-square Test reveals that there is no significant (P > 0.05) impact of Income from fishing activity on : Household income, Sufficient quality of various kind wanted, Type of food wanted but not enough quality, Sufficient quality but not the type wanted, Not type of food wanted nor enough quality of other, Not enough money for required quantity needed, Too hard to get to the market, Had a problem with cooking facility, Not able to cook due to health problems, Food bought just didn't last and didn't have money to get more and Hungry but didn't eat because of not been able to afford food. This means that income from fishing activity had no significant impact on factors determining household security.

LIMITATION
During the study period we had some financial constrains that caused some limitation.

CONCLUSION
Despite the significant contribution of Ogun River on the livelihood of the respondents, it had no significant impact (P>0.05) on the security of food for people in this village since a small proportion (6%) of the respondent are involved in fishing. Sufficient quality but not the type of food wanted had an effect on not type of food wanted nor enough quality of other. Not type of food wanted nor enough quality of other food available also had an effect coefficient that had a significant impact on not enough money for quantity food that is needed. Food bought just didn't last and we didn't have money to get more also had an effect on hungry but didn't eat because of not being able to afford money to secure food for the household. The inability to get to market however had also an effect on hungry but didn't eat because of not been able to afford food Sufficient quality of various kind of food wanted however have a negative effect impact on type of food wanted but not enough quality.

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