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*Full Length Research Paper*

# Assessment of production and consumption levels of staple foods among rural households in Odeda, Ogun state.

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**This study assessed production and consumption levels of staple foods with emphasis on cassava and maize among rural households in Odeda Local Government Area of Ogun State, Nigeria. Interview guide was used to elicit information from 80 rural households that were purposively selected. The data were analysed using descriptive and inferential statistics. Some of the findings showed that majority of the respondents were within the age range of 40-60 years. Most (70%) of the respondents were male, majority (75%) were married, 60% had household size of 6-10 persons, and a large proportion (86.25%) had small farm size (1-2 hectares). Only a few (38.75%) had adult education while 36.25% had no formal education. Highest production level of maize was obtained by respondent that intercropped cassava and maize and they are mainly made up of those with highest consumption level of maize=60% and cassava=77.5%.The prevalent coping strategy adopted during "off-peak" period was skipping of meal within a day while the least strategy adopted is mortgaging and sales of domestic assets. The major constraint faced by the respondents was lack of adequate credit facilities. Correlation analysis shows that there was no significant relationship between socio-economic characteristics of the respondents and their cassava and maize production level. Correlation analysis for consumption level of cassava and socio-economic revealed that there was no significant relationship between the variables except for income which significantly correlated with cassava consumption level ($p < 0.0\ 5$). It is therefore recommended that adequate credit facilities (capital), good policies, adequate inputs by the Government should be made available to rural households so as to enhance increase in food production level.**

**Keywords:** Consumption, Household production and staple food.

## INTRODUCTION

Food is an essential need of man both to grow and perform well as a living being in all sphere of life. Pimentel (2000) opined that One of the most basic and essential need of man and nature as whole is adequate food supply The early man probably did not have any problem feeding himself as there was enough food in the jungle to feed his sparse population. However, the situation has changed considerably and in many countries today, food shortage is common and human beings had consequently been striving towards exploiting and fully tapping natural resources to satisfy their needs. A larger proportion of people all over the World are still underfed and malnourished, because appropriate solutions have not been found to the problem of inadequate food supply.(Lupien and Menza, 2004).A modern man is therefore facing an acute shortage of food supply even though the economically advanced countries of the world have evolved better ways of producing and supplying food at a rate far above their population growth rate. The problem of food scarcity in modern time is widespread in developing nations particularly in Africa, Asia and some war-ridden countries. Ironically these are the area of the world with the largest population and land space. The recurrent risks associated with fluctuating rainfall and unstable market has led many farmers to diversify their food procurement in order to secure a wide food base and sufficient supply. For the analysis of food production and consumption at the household level, it is essential to take into consideration household roles as

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well as the effect of an increase in income on workload and who is in control of this additional income (Derica, 2003).No nation can achieve any greatness, and indeed a self sustaining development without being able to feed her population. Current effort of Nigeria to defend her national interest and pursue a pan Africa foreign policy in international arena could be inhibited, due to inability of the country to feed her population. During the last few decades, concern has been increasing, expressed about population growth in Nigeria which has not been equally matched by the level of food production. There has been a distinct lack of continuity in Nigeria agriculture policies and this lead to continuous decline in the growth of staple food production. There is a need to undertake an intensive study on food production and consumption pattern of households, and coping strategies employed towards foods availability in order to suggest policy options that could help solve the problems of food unavailability in Nigeria. The objectives of the study were to: **1**. Assess the level of food production in rural households. **2**. Assess the level of food consumption in rural households. **3**. Examine the coping strategies adopted by rural households for sustainable food availability. **4**. Identify constraints affecting production level of the staple food. It was hypothesized that the there was no significant relationship between socio-economics characteristics and production and consumption level.

## MATERIALS AND METHODS

The study was carried out in Odeda Local Government area of Ogun State. The local government has a land area of 1547.29km square with a population of 109,494 (National Bureau of Statistics, NBS, 2006).The climate favours the cultivation of a wide range of food crops such as rice, maize, cassava, yam, coco yam, oil palm, vegetables and fruits.

**Sampling procedure and sample size:** simple random sampling technique was used to select of five wards out of eleven, while 16 households were purposively sampled from each of the wards. A total of 80 households were sampled. An interview guide was designed to obtain information on the farmers about demographic and non-demographic characteristics.

### Measurement of variables

The important variables measured were:

- Levels of cassava and maize production were measured in bags.
- Consumption levels of cassava and maize were measured in bags.
- Coping strategies adopted were measured using five-point scale ranging from 1= Always used, 2= Frequency used, 3= occasionally used, 4= rarely used, 5= Never used.
- Constraints affecting production of staple food were listed and measured using 3 point scale ranging from major = 3point, minor = 2 point, not constraint = 1point. Frequencies and percentages were employed in data analysis. (Correlation analysis was used to test the significant relationship between socio-economics characteristics and production and consumption level.)

## RESULTS AND DISCUSSION

### Socio economic characteristics of the respondents

The respondents were within the ages of 40-50 years with a mean age of 49 years. Most (70%) of the respondents were male, while only (30%) were female. Majority (75%) of the respondents were married, and 12.5% were widowed. However, further information obtained shows that 45percent of the respondents were polygamous and household size ranged between 6-10 persons. Of the total respondents, 38.75% had adult education and 86.3% of respondents have the farm size range between 1-2 hectares while the mean farm size was 1.8 hectares.

### Level of staple food produced by rural households

Table 2 revealed that most (65.0%) of the respondents produced the lowest quantity of maize (1-100 bags), while very few of them (2.5%) produced the largest quantity (300-400 bags) of maize. Also 28.75 percent produced between 101-200 bags of cassava and only 6.25 % of respondents produced a quantity of cassava between 401-500 bags. Cassava production is higher than maize probably because more food such as gari, fufu and lafun can be produced from cassava which can meet food need of the households and also generate more income this is in line with Dixon et al.( 2003) who opined that simple agro-processing of crops such as cassava can double or even triple incomes.

### Level of staple food consumed by rural households

Most (88.75%) of the respondents consumed 1-50 bags of maize and 11.25 percent consumed between 51-100 bags of maize. However, 77.5 percent consumed 1-50 bags of cassava, while 21.25 percent consumed 51-100 bags. More cassava is consumed than maize and this indicates reason why cassava production is higher than maize production. This finding confirms Nweke et al. (2002) reported that cassava cultivars represent an important contribution to Africa's food security, especially among the poor. It derives its importance from the fact that it is starchy, thickened and its tuberous roots are a valuable source of cheap calories especially in developing countries where calorie deficiency and malnutrition are widely spread. Also Harriet etal (2003) reports that household expenditure on nonrice foods increased with the frequency with which households consumed nonrice foods and with the diversity of the diet.

**Table 1.** Socio economic characteristics of respondents

| Variables | Mean | Mode |
|---|---|---|
| Age (years) | 49 | **(38.8%)** 40 – 50 |
| Marital status | | **(75%)** Married |
| Sex | | **(70%)** Male |
| Educational status | | **(38.7%)** Adult education |
| Farm size (hectares) | 1.8 | **(86.3%)** 1-2 |
| Household size (persons) | 10 | **(60%)** 6 – 10 |

**Table 2.** Production level of maize and cassava in rural households

| | Maize | | Cassava | |
|---|---|---|---|---|
| Quantity (bags) | Freq. | Percent | Freq. | Percent |
| 1-100 | 52 | 65.00 | 22 | 27.50 |
| 101- 200 | 16 | 20.00 | 23 | 28.75 |
| 201-300 | 10 | 12.25 | 16 | 20.00 |
| 301- 400 | 2 | 2.50 | 14 | 17.50 |
| 401-500 | - | - | 5 | 6.25 |

**Table 3.** Consumption level of maize and cassava in rural households.

| | Maize | | Cassava | |
|---|---|---|---|---|
| Quantity (bags) | Freq. | Percent | Freq. | Percent |
| 1- 50 | 71 | 88.75 | 62 | 77.50 |
| 51- 100 | 9 | 11.25 | 17 | 21.25 |
| 101-150 | - | - | 1 | 1.25 |
| 151- 200 | - | - | - | - |

**Table 4.** Rank Score of Prevailing Coping Strategies Adopted During 'Off-peak' Period.

| Coping Strategies Adopted | 1 | 2 | 3 | 4 | 5 | Total Score |
|---|---|---|---|---|---|---|
| Skipping of meals within a day | 25(32%) | 24(30.0%) | 22 (27.5%) | 7(8.8%) | 2 (2.5%) | **303 1st** |
| Skipping of meals for a whole day | 2 (2.5%) | 38(47.5%) | 25 (32%) | 10 (12.5%) | 5(6.3%) | **262 2nd** |
| Reduction of food ration | 1(1.3%) | 12(15.0%) | 50(64%) | 13(16.3%) | 4(5.0%) | **233 4th** |
| Borrowing of food | 0 | 2(2.5%) | 2 (2.5%) | 19 (23.8%) | 57(71.3%) | **109 7th** |
| Borrowing of money to buy food | 0 | 1 (1.3%) | 10(12.5%) | 7(8.8%) | 62(77.5%) | **110 6th** |
| Maternal Buffering | 1(1.3%) | 3 (3.8%) | 26(32.5%) | 12(15.0%) | 38 (47.5%) | **157 5th** |
| Eating of less preferred food | 6 ( 7.5%) | 33 ( 41.3%) | 20 (25.0%) | 12(15.0%) | 7 (8.8%) | **261 3rd** |
| Mortgaging and sales of domestic assets | 1 (1.3%) | 1 (1.3%) | 3(3.8%) | 4(5.0%) | 70(87.5%) | **99 8th** |

**Table 5:** Constraints affecting production level of cassava and maize by rural household

| Constraint | Major Frequency (%) | Minor Frequency (%) | Non Constraint (%) |
|---|---|---|---|
| Capital Unavailability | 65 (81.25%) | 12 (15%) | 3 (3.75%) |
| Land | 61 (76.25%) | 17 (21.25%) | 2 (2.5%) |
| Inputs | 43 (53.75%) | 25 (31.5%) | 12 (13.75%) |
| Market Price | 34 (42.5%) | 40 (48.75%) | 6 (7.5%) |
| Climate | 29 (36.25%) | 36 (45%) | 15 (18.75%) |

**Table 6.** Correlation relationship between Cassava and Maize Production Level and Socio-economic characteristics

| | Cassava | | | Maize | | |
|---|---|---|---|---|---|---|
| Variables | P- Value | Significance | Decision | P- Value | Significance | Decision |
| Household size | 0.047 | 0.677 | NS | 0.023 | 0.838 | NS |
| Farm size | 0.124 | 0.413 | NS | -0.016 | 0.918 | NS |
| Age | 0.415** | 0.000 | S | 0.362** | 0.001 | S |
| Income | 0.309** | 0.005 | S | 0.242* | 0.030 | S |

** Correlation is significant at the 0.01 level (2-tailed).*Correlation is significant at0.05 level (2-tailed)

**Prevailing Coping strategies Adopted by Rural Households**

Rural household adopted various coping strategies to survive during insufficient supply of their most consumed staple food due to decrease in production of such food. According to the rank score which indicates that number of household using these strategies, the most prevailing coping strategy in the study area was skipping of meal within a day. This strategy had a total score of 303.The second strategy in ranking was skipping of meal for a day with total of 262. These coping strategies were in line with the results of Roncoli et al.(2001) who opines that reducing the amount of grain used in preparing daily meals were just enough with no provision for leftovers and reducing the number of meals served, by eliminating the morning or midday meal. Other succeeding prevalent strategies in descending order on the aggregates are: Eating of less preferred food, reduction of food consumption, maternal buffering, and borrowing of money to buy food, borrowing of food and mortgaging and sales of domestic assets.

**Constraints to arable crops production**

Capital unavailability (81.25%) was the major constraints affecting production level of rural households, followed by land (76.25%).It implies that availability of credit facilities to provide capital and access to land for rural households could boost the production of staple foods especially those the fed on most and problem of hunger and food insecurity will reduced. This is also in line Fakoya *etal* (2006) also opines that insufficient money in form of credit facilities, pest and disease attack, high cost of inputs and lack of processing facilities ranked highest as constraints to arable crops production. Other constraints in descending other of importance were inputs unavailability, unstable market price and unfavourable climatic condition. Hartmann (2004) argues for local production because it is the most stable way to improve livelihoods, increase food security and contribute to long-term and broad based.

**Relationship between Socio-economic characteristic-cs and staples food production and consumption of rural households**

Correlation of respondents' age and maize quantity produced was 0.362.This indicates a linear association between the two variables. The significance value was .001which implies that the age of farmers and maize quantity produced are significantly positively correlated. The correlation coefficient between maize quantity produced and total annual income of respondents was 0.242. The significance value was 0.030 and this indicates a positive significant relationship between the two variables. A positive correlation between the age of respondents and cassava quantity produced (r = 0.415). The significance value was 0.000 which indicates that the two variables are linearly correlated. There was a positive correlation between total annual income and cassava quantity produced (r = 0.309).The significance value was 0.005 indicates that the two variables were linearly correlated. It implies that age of the respondents could affect the quantities of staple food produced and the more produces the respondents could produced, the more income they can earned. Table 7 shows that there was no significant relationship between selected

**Table 7.** Correlation Relationship between Cassava and maize Consumption Level and Socio-economic Characteristics

| Variables | Cassava P- Value | Significance | Decision | Maize P- Value | Significance | Decision |
|---|---|---|---|---|---|---|
| Household size | -0.179 | 0.111 | NS | 0.202 | 0.703 | NS |
| Farm size | -0.122 | 0.418 | NS | -0.007 | 0.966 | NS |
| Age | 0.148 | 0.191 | NS | 0.011 | 0.924 | NS |
| Income | 0.252* | 0.024 | S | 0.171 | 0.129 | NS |

** Correlation is significant at the 0.01 level (2-tailed).*Correlation is significant at0.05 level (2-tailed)

socio-economic characteristics of the respondents and consumption level of both cassava and maize expect that there was a significant relationship between income and cassava consumption level at 0.05 level (2-tailed). The income was significant probably because with more income in the household, they can afford to consume more of cassava which were more produced in the study area.

## CONCLUSION

The study revealed that quantity of cassava produced by the rural households was more than maize produced and the quantity of cassava consumed by the rural household was more than maize consumed. Despite the efforts of the government by adopting different relief programs, in recent years to increase agricultural production to prevent food insecurity. Rural households faced insufficient production of staple food (cassava and maize) they consumed; thereby they adopted coping strategies for survival during off-peak period. Skipping of meals within a day was ranked 1st by the respondents among coping strategies adopted while mortgaging and sales of domestics assets was ranked last. The study also identified constraints which if resolved would further improve the production level of staple food (cassava and maize). Socio-economic characteristics of the respondents (Age, Marital Status, Gender, Household size and Income) have a significant relationship with both production and consumption levels of staple foods. Consumption level of cassava affected the production level of cassava. Finally, in order to achieve adequate food supply in the rural households, there should be adequate credit facilities provision, Good policy formulation regarding land tenure system, produce marketing and pricing should be made. Inputs should be made available at subsidised rate to rural household farmers. A joint effort by the government and extension agents is required to make adequate information available to rural household farmers which will improve their production and consumption level.

## REFERENCE


Derica KA (2003). “Roles of women on the household economy, food production and food security” outlook on Agriculture. Vol. 32, No 2, 2003, p 111-121

Dixon AGO, Bandyopadhyay R, Coyne D, Ferguson M, Ferris RSB, Hanna R, Hughes J, Ingelbrecht I, Legg J, Mahungu M, Manyong V, Mowbray D, Neuenschwander P, Whyte J, Hartmann P, Ortiz R (2003). Cassava: from poor farmer’s crop to pacesetter of African rural development. *Chronica Horticulturae* 43 (4), 8-15.

Fakoya EO, Apantaku SO, Adereti FO (2006). Gender Involvement in Arable Crop Cultivation and its Contributions to Household Food Security in Ogun State, Nigeria. *Research* J. Soc. Sci. Vol. 1 No. 1 pp 1-4.

Harriet T, Lynnda K, Martin WB (2003),Association of Household Rice Expenditure with Child Nutritional Status Indicates a Role for Macroeconomic Food Policy in Combating Malnutrition The American Society for Nutritional Sciences. J. Nutri. 133:1320-1325, May 2003. Helen Keller International, World Headquarters, New York, *NY 10010*

Hartmann P (2004) An Approach to Hunger and Poverty Reduction for Sub-Saharan Africa. International Institute of Tropical Agriculture, Ibadan, Nigeria. Pp. 1-17

Lupien JR, V Menza (2004). “Assessing Prospects for Improving Food Security and Nutrition”.FNA/ANA, 25. Pp. 5-9.

National Bureau of Statistics (2006),Nigeria census population 2006.

Nweke FI, Spencer DSC, Lynam JK (2002) *The Cassava Transformation*: *Africa’s Best-kept Secret*. East Lansing, Michigan State University Press.

Pimentel DM(2000). Food Energy and Society Resources and Environment Science Series. Pp. 24-28.

Roncoli C, Keith I, Paul K(2001), The costs and risks of coping with drought: livelihood impacts and farmers’ responses in Burkina Faso, Climate Research, Boston, Massachusetts 02155, USA Vol. 19: 119–132, 2001