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Marketing of *Gnetum Africanum* (Salad Leaf) in Boki Local Government Area of Cross River State

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ABSTRACT

This study was carried out to analyse the marketing of *gnetum africanum* in Boki local government area of Cross River State. Data were obtained from 30 respondents with the assistance of six enumerators. The findings revealed that 60 percent of the traders involved in the business were females in the prime of their lifetime engaged in the trade for at most 15 years. The males constituted 40 percent of the business and were relatively new entrants into the trade. The average quantity of *gnetum* traded was 5,184kg and 4,4317kg for females and males respondents respectively. There were no stringent barriers to entry into the trade as evidenced by the four-firm concentration index (0.154). The student t-test showed a significant difference. The marketing margin in absolute terms per kilogramme of *gnetum* was N25.58. The study recommends that traders should be encouraged to form themselves into stronger associations like cooperatives so as to maximize returns from the trade. More traders (both male and female) should be encouraged to join the trade as a means of employment and a ready source of income through provision of incentives.

KEYWORDS: Marketing, Market structure, conduct, Performance.

INTRODUCTION

Marketing involves "finding out what the customer wants and helping to set up the production/marketing systems that meets demand and maximizes income"(Koppell,1995). This implies that marketing is not particularly concerned with location or place but it is a mechanism for decision-making.

Marketing of products from the forest is one of the major sources of income to the rural people who live around the forest. The forests form an integral part of the rural economy providing subsistent goods and services as well as items of trade. The forest product industries constitute an important part of Nigeria's economy and are particularly strategic because they are decentralized and are the principal industries in hundreds of Nigeria's metropolitan communities (Stoddard & Stoddard, 1987).

Forests constitute about 360,000sq km of Nigerian land mass (Olayide *et al* 1981).The forest of Cross River State (located in the South East of Nigeria and lying entirely within the humid tropics) has remained a major source of income and employment to rural women and children who are involved in the various marketing chains (Abang and Ele.1997).

The dependency on wild economic plants and animals is obvious for indigenous communities that do not cultivate many crops or raise livestock. Even for communities that cultivate other crops in reasonable quantities, edible wild plants such as *Gnetum Africanum* are usually as important as seasonal supplements during the growing season when cultivated food is in short supply and also as dietary supplement all year round and as emergency supplies during wars and famines.

However, the magnitude of the income derived is not well known due to a lack of systematic and rigorous data collection at country level.

The forest of Boki Local Government Area is endowed with *Gnetum africanum,* which is a food delicacy for the people of Cross River State. A large percentage of men, women and children are engaged in the harvesting and marketing though no data is available about the production volume especially in terms of sex differentiation, and the specific or predominant market structure, conduct and performance. This study, therefore, seeks to;

1) Identify and describe the participants in the marketing of *Gnetum* in Cross River State, using Boki L.G.A. as a case study.
2) Ascertain the quantity of *Gnetum* harvested and traded by various respondents and determine the value of trade by sex.
3) Analyse the market structure, conduct, and performance.

It is hoped that the study will contribute to future policy making and investment planning, specifically with respect to potential opportunities and constraints for improving the productivity and sustainability of wild resources use and their contribution to poverty reduction in Cross River State.

METHODOLOGY

Sources of data

Both primary and secondary data were used in the survey. An interview schedule was used to obtained relevant information from the respondents. Also, direct

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observation was used to generate some data.

Secondary data was obtained from the state Ministry of Natural Resources, the State Forestry Commission, the Cross River National Park and some Non-Governmental organizations (DIN and Sankwala Global 2000).

Development of instrument

A reconnaissance survey was first undertaken through personal visit to the study area. This was aimed at acquainting the researcher with the socio-economic activities of the study area and the relationship with *Gnetum africanum*.

An interview schedule was then designed for the respondents. A pre-test of this instrument was carried out. An analysis of the pre-test data led to the removal of some questions that were ambiguous while other questions were re-structured. The final instrument was then used for the final survey.

Procedure for data collection

Six enumerators were employed and trained on how to administer the interview schedule. Experienced enumerators with the Cross River State Agricultural Development Project (CRADP) assisted in the training. This was done for a day. Some aspects of the training included the re-structuring of the interview schedule in Boki language, the technique in developing rapport with the respondents and reading of facial expressions. The evaluation officers judged the enumerators competent at the training before they were assigned the duties of administering the schedule.

Sampling technique

Multi stage stratified random sampling and purposive sampling were used to select respondents for the study. A list of all markets in the Local Government Area was obtained from the state Ministry of Agriculture. A total of 30 markets were found in all the districts of Boki Local Government Area. Three of these markets were identified as urban markets, namely: Okundi, Iruan, Betriko. One corresponding rural market feeding urban market was then collected, using simple random sampling, giving a total of 6 markets. From these markets, 30 *Gnetum* harvesters were selected purposely on the basis of their willingness to cooperate with the enumerators, as shown below.

Measurements of Variables

Age of respondents was measured in terms of their date of birth. This was difficult in some cases but a good estimate was obtained on the basis of important historical events such as the first and Second World Wars.

A scale was used to measure weight of the *Gnetum africanum* ready for sale. No consideration was given to the water content.

Data Analysis Technique

Frequency tables were used to present some socio-economic characteristics of respondents. Also, a correlation analysis was conducted to determine the relationship existing between selected socio-economic variables in the study.

The sellers' concentration index was used to confirm the market structure. This was given as:

Concentration Index (C.I.) = $\frac{Q_i}{Q_T}$ (I=1,2,3...n)

Where Q_i = Volume of Afang going to the largest four(4) Traders.

Q_T = Total quantity of Afang purchase/bought/harvested by all the traders.

$$C.I. = \left[\sum_{i=1}^{n} \frac{Q_i}{Q_T}\right] = 1.0$$

The nearer the index is to 1.0, the higher the C.I., implying that there are few large firms controlling the market.

Marketing margin (mm) analysis was used to measure market performance. This was measured by the formula.

M.M = USP – UPP where

USP = Unit selling price

TABLE 1: Sample Size of Respondents.

Urban Markets	Respondents		Total
	Men	Women	
1. Okundi	2	3	5
2. Iruan	2	3	5
3. Betriko	2	3	5
Rural markets			
4. Bodje	2	3	5
5. Akwagum			
6. Bekem	2	3	5
TOTAL	**12**	**18**	**30**

Data were obtained from each of the respondents on the eve of each market day for a period of 13 months.

UPP = Unit purchase price
MM = Absolute Marketing margin.

OR
MM = RP – FP
Where
RP = Retail price
FP = Farm gate price
Therefore, % MM = $\frac{\text{Absolute MM x 100}}{\text{Purchase price x 1}}$

RESULTS AND DISCUSSION

Socio-economic characteristics of trade participants

The study reveals that 60 percent of traders involved in the trade were females while 40 percent were males. This confirms the study of Omuluabi and Abang (1994) that *Gnetum* trade in Cross River State is dominated by women. In terms of age, 36.7% of the harvesters were between the ages of 21 and 30 years, 53.3 percent were 31-40 years and 10 percent were above 40 years old. This implies that the trade is chosen by men and women who are still strong and at the prime of their life time. This may be due to the fact that harvesting and selling is a very rigorous exercise.

On marital status, 26.7 percent of the traders were single, 73.3 percent were married and 3.3 were widowed. *Gnetum* trade is predominated by married men and women who contribute significant income to their households assisted by family labour. One third (33.3 percent) of the traders had family sizes of not more than 5 persons, 50 percent had between 6 and 10 persons, while 16.7 percent had a family size above 10. This may be due to the fact that the traders rely on the use of family labour to maximize returns. 46.7 percent of traders had been engaged in the trade for 5-10 years, 43.3 percent for about 11-15 years while 10 percent had been in the trade for 16-20 years (Table 2). A personal interview with some traders revealed that the number of years spent in trade is an advantage of old traders over new entrants.

Relationship between sex, age, number of years in trade and the total quantity of Gnetum harvested and traded.

The correlation analysis conducted showed a significant positive relationship between sex and output (r=0.565), at the one percent level of significance. This implies that the more the number of people involved in harvesting, the more the quantity produced. The output has an inverse relationship with age implying that as the harvesters get biologically older, their productivity decreases. The younger ones are relatively more productive. There exists a positive relationship between years in trade and output (r=0.335). An harvester explained that, though the trade is for the young and agile, longer years of experience could be an added advantage since one must have been able to discover more hidden plantations of Gnetum_over the years. From this study, women have more years of experience than their male counterparts.

Quantity of *Gnetum africanum* harvested traded

The study reveals that the quantity of *Gnetum* harvested for the period (April 2000 to April 2001) by the female respondent was 93,338kg and 53.174kg by the male respondents. On the average, each female had harvested 5,184.4kg (SD=491.86) while their male counterparts harvested 4,431.17kg (SD=648.53). The student t-test showed a significant difference between the two means at the 5 percent level.

Table 2: Distribution of respondents by socio-economic characteristic

Sex distribution	Frequency	Percentage
Male	12	40
Female	18	60
Total	30	100
Age		
21-30	11	36.7
31-40	16	53.3
41-50	3	10.0
Total	30	100
Marital status		
Single	8	26.7
Married	22	73.3
Total	30	100
Family size		
1-5	10	33.3
6-10	15	50.0
10 and above	5	16.7
Total	30	100

Source: **Field survey data 2000/2001**

Table 3: Monthly marketing margin (Naira per kg) of *Gnetum* for the period (April 2000-April 2001.

Month	Average Selling price	Average purchase price	Absolute margin	Percent margin
April	46.16	18.14	23.02	126.90
May	42.31	18.40	23.91	129.95
June	45.40	20.48	24.29	121.68
July	45.38	20.20	25.18	124.65
August	45.78	22.21	23.57	106.12
September	47.30	20.29	27.01	133.12
October	50.60	20.00	30.60	153.00
November	44.99	17.37	27.60	158.71
December	45.10	17.12	27.98	163.43
January	39.91	15.28	24.63	161.19
February	40.33	15.18	25.15	165.58
March	40.53	17.15	23.38	136.33
April	40.32	17.73	25.59	127.41
Averages			2258	139.09

Source: Field survey data 2000/2001.

TABLE 4: QUANTITY OF GNETUM TRADED BY HARVERSTERS

Quantity	Sex	Age	Years in trade
4600	Male	40	10
4500	Male	40	8
4518	Male	36	7
4550	Male	35	6
4526	Male	35	7
4500	Male	25	10
3000	Male	40	9
4266	Male	39	8
3507	Male	36	13
5507	Male	25	14
4550	Male	35	12
5100	Male	25	12
5621	Female	50	20
5660	Female	30	10
5579	Female	30	16
4591	Female	35	12
5600	Female	32	7
5000	Female	45	15
4598	Female	45	13
4602	Female	25	8
5575	Female	25	9
5625	Female	35	15
4671	Female	25	12
5649	Female	30	13
5621	Female	35	14
4620	Female	33	17
5540	Female	31	10
4595	Female	37	12
5582	Female	25	12
4609	Female	23	5

Market structure, conduct and performance

There are naturally few entry barriers into the trade of *Gnetum*. One noticeable barrier seems to be the registration fees required annually for harvesting in forestry reserves. The market structure was found to be near perfect competition. The concentration index was 0.154 suggesting that four largest buyers in the market do not exercise control on or influence the marketing of *Gnetum*. However, though there are many buyers and sellers, relatively free entry and exit, sale of homogenous products as well as access to information there exist small cartels or groups of sellers who based on their experience in the trade have become more resistant to new entrants.

The pattern of behaviour followed by traders in adapting to the market they buy and sell was cordial as opposed to industries with high concentration ratios with collusive conduct (Taylor, 1995). The market performance of *Gnetum* trade as determined by the structure (near perfect competition) and conduct (cordial) was efficient, the average marketing margin in absolute terms for the period was N25.58. This implies that *Gnetum* harvesters make N25.58 per kilogramme of *Gnetum* sold.

CONCLUSIONS

The following conclusions may be drawn from the analyses and discussions of the data:

a) The marke ting of *Gnetum* in the study area was dominated by women.

b) The younger the harvesters of the *Gnetum*, the more the quantity harvested.

c) Experience in the harvesting and marketing of the *Gnetum* was important in the business.

d) There were no barriers to the entry into or exit from the business, and the market structure was found to be near perfect competition as indicated by the concentration index (0.154) that buyers and sellers do not influence or exercise control on the market. There is no one firm taking enough of the product (gnetum) to be able to influence its price.

RECOMMENDATIONS

The following recommendations are made with a view to improving the marketing of *Gnetum*

a) More people should be encouraged to

participate in the business because it is profitable and would help to ease unemployment problems.

b) The traders should be encouraged to form marketing cooperatives and given adequate incentives as this will enhance the business.

c) Payment of registration fees by the harvesters to the ministry of Natural Resources should be stopped as a way of encouraging new entrants to the business.

d) Infrastructural facilities such as motorable roads should be constructed to ease the transport of the *Gnetum* to markets.

REFERENCES

Abang, S O and Ele, I., 1997. Profitability and Gross Margin in the production and marketing of Capilobia in Cross River State, Nigeria.

Koppell, C., 19950. Community Forestry Field Manual Six, FAO Rome.

Olayide, S. O., Ogunfowora, O., Essang, S. M. and Idachaba, F. S., 1981. Elements of Rural Economics" Ibadan University press Publishing House. FAO (2000)

Stoddard, C. H. and Stoddard, G. M., 1987. Essentials of Forestry Practice". John Wiley and Sons, New York.

Taylor, J. B., 1995. Economics, Houghon Mifflin Company, Boston.