



Short Research Communication

Evaluation of gum arabic marketing and the propensity to save among gum arabic marketers in Nigeria

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¹Haliru, Y. U.;
²Ibitoye, S.J.
and
¹Ebenuwa, C.I

¹Rubber Research Institute of Nigeria, PMB 1049, Benin City, Edo State Nigeria.

²Department of Agricultural Economics and Extension, Faculty of Agriculture, Kogi State University, Anyigba, Nigeria.

*Corresponding Author's
E-mail: haliru.umar@gmail.com

The problem of low income and poverty is endemic in northern Nigeria. The study was thus carried out to evaluate the effects of gum arabic marketing on the income status of the marketers in North-Eastern Nigeria. Data were collected through the use of structured questionnaire orally administered on 150 respondents in Yobe, Adamawa and Taraba states of Nigeria. The data were analysed using both descriptive and inferential statistics. The results indicated that a total of 626,465.00 kg was sold among the respondents which generated total revenue of ₦ 2, 618,197.533. The Gross Margin (GM) and Net Profit (NP) per kilogram calculated were ₦ 3.74 each. These imply that gum arabic marketing was profitable in the area. The study also revealed that 64% of the respondents were extremely poor could neither earn nor save up to \$ 1.00 per day before engaging in the gum arabic business; but this dropped to only 6% after engaging in the gum arabic marketing. Invariably also, the study indicated that 79.33% of the respondents couldn't spend up \$ 1.00 per day before engaging in the gum arabic business which also dropped to only 7.33% after engaging in the gum arabic marketing. These imply that gum arabic marketing has enhanced their income status which alleviated the poverty situation of most of the respondents. This was more glaring in result of the marketers' propensity to save which revealed that 74% of the respondent couldn't save, rather were indebted of the consumption before engaging in the business of gum arabic of total of ₦ 3,399.00 (\$ 22.66), and this was improved as 75.33% saved up to ₦7,200.00 (\$48.00) of their total income. The study thus recommended the encouragement of gum arabic marketing in the area as it is profitable.

Key words: Gum arabic, income status, profitability, North-Eastern Nigeria.

INTRODUCTION

In an economic term, the international definition of poverty is any condition that makes one to live on less than US \$1.00 per day. It is physically noted on its victims' daily mode of activities as it deters the victims from observing most of their economic, social and even spiritual activities (Victor, 2002). This is more serious in developing countries like Nigeria which has about 70% of her population lives in poverty (Nsikabasi, Etim and Ukoha, 2010).

Federal Government of Nigeria, in an attempt to arrest the menace of poverty situation in the country, introduced a number of programmes and policies to revitalize

agriculture being the highest employer of labour in the country. These were aimed to promote and diversify production and marketing of agricultural products. The programmes among others include Projects Crops of 1971, Forestry II in 1987, National Seed Multiplication in 1990, Tree, Environmental Management and National Agricultural Technical Support Project (NATSP) in 1993, and the recent programmes tagged "Vision 20 2020", the "7 Points Agenda" as well as the National Economic Empowerment and Development Strategies (NEEDS) were all targeted to revitalize agriculture for food security and

poverty alleviation in Nigeria. One of the cardinal principles was identification of crops with high economic potentials to improve their production and marketing status that will stimulate increase in income per capita of farmers and marketers in the country.

Acacia species known as gum arabic is one of the tree crops selected for its development and improvement in the country. There are over 1000 species of *Acacia* grown in Nigeria, out of which *Acacia senegal* (grade 1), *Acacia sayel* (grade 2) and *Acacia saberina* (grade 3) were found to be of higher economic value and are demanded worldwide for industrial uses (Abdullahi, 1998, Abdul – Gasim, 2002, Umar, 2006 and Abdel, 2007). The tree is a perennial plant, abundantly grows wild with only few domesticated (established Gum arabic farms) in northern Nigeria. It takes 4-5 years to mature after planting (Nigeria Export Promotion Council, 1999 and Aghughu, 2004). The high demand for the products necessitated the Federal Government of Nigeria emphasized for the development of the gum arabic especially grade 1 and 2 (Giroh, Moses, Joyce and Umar, 2007). Rubber Research Institute of Nigeria (RRIN) has been given the mandate by the Federal Government of Nigeria to develop the *Acacia species* to enhance its production and marketing in the country so as to compete with the other gum arabic producing nations in the world.

Nigeria is second to Sudan in the world production and marketing of gum arabic with a current production figure of about 7000-8000 metric tonnes per annum (Didier, 2004, Gum Arabic Market News Bulletin, 2008). This accounted for 10% of the world supply. In 1998, Nigeria earned total revenue of \$121 million US dollars from the export of gum arabic (Aliyu, 2008). This made many northern states in Nigeria to embark on elaborate production schemes of gum arabic, being the 'gold of the desert' as sometimes called. Available data indicated that Borno State has established 6,393.5 hectares of gum arabic plantation, Yobe State has 1, 700 ha and Jigawa State has 800 hectares. This is followed by Zamfara (300 hectares), Kano (160 hectares), Kebbi (130 hectares), Sokoto (120 hectares), Bauchi (50 hectares) Taraba (30 hectares) and Adamawa (20 hectares) (Bello, 1998, Baseline Survey, 2002). Ligali (2005) reported that the attractive increase in price of gum arabic (₦24, 000/50 kg or ₦480/kg) in Yobe State triggered farmers to put more efforts in gum arabic production. This is expected to enhance the socio-economic status of the farmers and marketers of gum arabic in the area ; as Zencillo (2008), opined that in every case where a poor nation has significantly overcome its poverty, has achieved so while engaging in production for export market and opening up itself to the influx of foreign goods. This implies that trade plays an important role in the development processes of nations' economy. In the same vein, Joachim (2003) stated that the stunted growth of the less developed countries was a consequent of export instability. In other words, income which refers to the total financial earning of an individual

or group of persons is an important factor in well being of individuals/nation (Emma, 2008). This is because the income level of people influences their consumption and expenditures that translate to their type of live.

The study thus examined the effect of gum arabic marketing on the income status of the respondents in North-Eastern Nigeria.

METHODOLOGY

The study area

The study was carried out in Adamawa, Taraba and Yobe States of North-Eastern Nigeria. Geographically, the states are in Semi-Arid zone with a mean annual rain fall of 160.2 mm, and temperature fluctuating between 14°C to about 44°C (Yobe State Diary, 2000). These conditions promote the production of gum arabic (Aghughu, 2004). There are diverse ethnic groups well over 50 different tribes found in these states with major languages spoken as Hausa, Fulfulde and Kanuri. Other languages include Kilba, Margi, Bura Bachama, Chamba and Fali among others.

Sampling techniques

A multistage sampling technique was used for the study. The area of study was first stratified into a unit, that is, Adamawa, Taraba and Yobe states.

The first stage of sampling involved the purposive selection of one Local Government Area from each of the three states making a total of 3 Local Governments. The second stage involved random selection of 3 communities/villages from each of the Local Governments making a total of 9 communities. Finally, 20 Gum arabic marketers were randomly selected from each of the 9 communities making a total of 180 respondents (marketers). The list of the total gum arabic marketers from the three states were obtained and compiled from the Ministries of Agriculture and Environment of each state, totaling Adamawa = 47, Taraba = 50 and Yobe = 55 which is the sampling frame of this study. It is from this sampling frame that the sample size was drawn taking cognizance of the marketers from the selected Local Governments.

Data source and collection

Primary data were used for the study. The data were collected through the use of questionnaire administered orally on gum arabic marketers in the study area. The questionnaire was designed to solicit information on the benefits (income) generated by the respondents from the sales of gum arabic, value of assets before and after engaging in gum arabic marketing which were used to evaluate the degree income status among the respondents.

Table 1: Gross Margin and Profitability Analysis of Gum arabic Marketing

Variables (Items/Activities)	Total Value (₦)/Marketer
(A) Depreciated Fixed cost:	
(i) Scales	3312.34
(ii) Head pans	1216.33
(iii) Mudus (Measures)	233.34
Total fixed cost	4,762.0
(B) Variable cost:	
(i) Labour cost	5962.89
(ii) Operating cost	3910.17
(iii) Purchasing cost	261,863.67
Total variable cost:	271,736.73
(C) Total cost	276,498.73
(D) Total revenue (TR)	2,618,197.533
(E) Gross margin (GM) (D - B)	2,346,461.00
Gm/Kg (E/H)	3.74
(F) Net profit (NP) (D - C)	2,341,698.8
NP/Kg (F/H)	3.74
(G) Total respondents	150
(H) Total Quantity of gum arabic sold	626,465.00 Kg

Source: Calculated from Data collected on field survey, 2012.

Analytical tools

Both descriptive and inferential statistics were used in analyzing the data collected.

Determination of revenue

Gross margin and regression models were used to determine the profitability of Gum arabic marketing among the respondents in the study area. The gross margin formula is expressed as follows:

$$GM = TR - TVC \text{ ----- (1)}$$

$$GM_{fk} = (TR - TVC)/N \text{ ----- (2)}$$

$$GM_{kg} = (TR - TVC)/kg \text{ ----- (3)}$$

$$NP = GM - TFC \text{ ----- (4)}$$

Where:

GM = Gross margin for gum arabic marketing (₦)

TR = total revenue realized from gum arabic marketing (₦)

TVC = total variable cost incurred in gum arabic marketing (₦)

GM_{fk} = gross margin per marketers of gum arabic (₦)

GM_{kg} = gross margin per kilogramme of gum arabic sold in the study area (₦)

Kg = total quantity of gum arabic sold in the study area

N = total number of respondents

NP = net profit for gum arabic marketing of the respondents (₦)

TFC = total fixed cost incurred during gum arabic marketing (₦)

Depreciation on fixed cost items were computed using straight line method for easy computation and accurate

values for the items used.

Determination of saving

Mathematically, the model is: $S = Y - C$.

Where S = saving, C = consumption and Y = income.

RESULT AND DISCUSSIONS

Profitability analysis of gum arabic marketing

Table 1 depicts the profitability analysis of gum arabic marketing in the study area using Gross Margin model (GM). The result indicates a total of 626,465 Kg of gum arabic was sold by the 150 respondents; and generated a total revenue of ₦ 392,729,630.00. The total gross margin was ₦ 2,346,461.00; and the gross margin per marketer was ₦ 15,643.07; while the GM per kilogramme of gum arabic sold was calculated as ₦ 3.74.

On the other hand, the total net profit calculated was ₦ 2,341,698.8, and the net profit per marketer was ₦ 15,611.33. This implies that gum arabic marketing was highly profitable in the study area as the respondents made a total net profit of ₦ 2,341,698.8, giving a profit per kilogramme of gum arabic sold of ₦ 3.74. This conformed to the earlier studies conducted by Umar; Abolagba; Giroh and Lalabe (2011).

Income status of respondents before and after engaging in gum arabic marketing

Table 2 revealed that before engaging in gum arabic marketing, 64% of the respondents were below poverty line as they could not earn up to \$1.00 per day. There were only 17% of the respondents that earned above \$2.00 and were considered rich.

This confirms to the findings of Ajayi (2004) who reported that 58.15% of North – Eastern Nigeria population live in extreme poverty, 27.03% moderately poor, and only 15% were rich. On the other hand, the Table shows a drastic change in the income status of the respondents after engaging in the gum Arabic marketing which indicates only 6% of the respondents that were below poverty line, 22% moderately poor and majority (69.3%) earn above \$2.00. The percentage change in income status among the respondents was 173.3%. This implies that gum arabic marketing in the area had positive impact on poverty alleviation. This is in line with the study of Giroh, *et al.* (2007) on the analysis of farmers' awareness on gum arabic production in selected Local Government of Jigawa state, Nigeria.

Expenditures status of respondents before and after engaging in gum arabic marketing

Table 3 revealed the expenditures range of the respondents.

Table 2. Income status of respondents before and after engaging in gum arabic marketing

Income Status \$/day (₦)	Before		After	
	Freq.	%	Freq.	%
0.1 - 0.999 (15 - 149.9)*	96	64.00	9	6.00
1.00 - 1.999 (150 - 299.9)	15	10.00	33	22.00
2.00 - 2.99 (300 - 449.9)	13	8.67	4	2.67
3.00 and above	26	17.13	104	69.30
Total	150	100.00	150	100.00
Mean (\$):	7.630		20.85	

Source: Calculated from field survey, 2012

* Figures in parentheses are naira value equivalent

Table 3: Expenditures status of respondents before and during engaging in gum arabic marketing

Expenditures Status \$/day (₦)	Before		After	
	Freq.	%	Freq.	%
0.1 - 0.999 (15 - 149.9)*	119	79.33	11	7.33
1.00 - 1.999 (150 - 299.9)	27	18.00	79	52.67
2.00 - 2.99 (300 - 449.9)	3	2.00	38	25.33
3.00 and above	1	0.67	22	14.67
Total	150	100.00	150	100.00
Mean (\$):	0.85		2.44	

Source: Calculated from field survey data, 2012.

* Figures in parentheses are naira value equivalent

Due to the poverty situation of the respondents, the result indicated about 79% of the marketers spend less than \$1.00 per day and less than 1% spent above \$3.00 a day before engagement in the gum Arabic marketing. But engagement in the gum Arabic marketing, their income status improved and hence their expenditures increased as indicated in Table 3.

There were about 53% of the respondents that were moderately poor leaving only about 7% still spending less than \$1.00 a day. The percentage change in the purchasing power of the respondents as calculated in this study was 187%. This implies that the gum arabic marketing has increased the purchasing power of the respondents greatly. This is an indication of poverty alleviation among the respondents. The result lays credence to the work of Zendillo (2008) who found out that agricultural marketing is an important means of poverty reduction especially in developing countries.

The propensity to save among gum arabic marketers in the study area

Table 4 depicts that 74% of the respondents (64 + 10)

couldn't save from their income, rather lived indebted of a total percentage of \$ 22.66 (-\$14.66 + - \$8.00) of their consumption before engagement in gum Arabic marketing. It was only 26% of the respondents that saved just 22.66% of their total income from gum arabic marketing. On the other hand, Table 5 shows that 75.33% of the respondents saved a total sum of \$ 48.00 out of their total income from sales of gum arabic; while the remaining 24.67% still living indebted of their consumption, totaling 47.99% of the expenditures.

From Table 4 and 5, we deduced that there was sharp improvement in the income status of the gum Arabic marketers in the study area. It thus indicates socio-economic enhancement and well being of the respondents. This corroborates with Zendillo (2008) who opined that a poor nation/individual can overcome the poverty through engagement in production for export marketing and also opening up for the influx of foreign goods.

SUMMARY AND CONCLUSION

The study analysed the effects of gum arabic marketing on

Table4: Propensity to save before engaging in gum arabic marketing

Category (\$)	Proportion Income (\$)	Expenditures (\$)	Percentage Saving (\$)
≤ (\$) 1.00	64.00	78.66	-14.66
(\$)1.00 - (\$)1.99	10.00	18.00	-8.00
(\$) 2.00 – 2.59	8.67	2.67	6.00
≥(\$) 2.59	17.33	0.67	16.66

Source: Calculated from field survey data, 2012

Table 5: Propensity to save after engaging in gum arabic marketing

Category (\$)	Proportion Income (\$)	Expenditures (\$)	Percentage Saving (\$)
≤ (\$) 1.00	6.00	5.33	0.67
(\$)1.00 - (\$)1.99	22.00	55.33	-33.33
(\$) 2.00 – 2.59	2.67	17.33	-14.66
≥(\$) 2.59	69.33	22.00	47.33

Source: Calculated from field survey data, 2012

the income status of the respondents in North-Eastern Nigeria. *Acacia*, otherwise called Gum arabic, with over 1000 different species is found grown wild in about 11 states in northern Nigeria. Out of these *Acacia senegal*, *Acacia seyal* and *Acacia seberina* known as grade 1, grade 2 and grade 3 respectively are of high economic importance and demanded worldwide for the manufacture of many industrial goods such as drugs, confectionaries, beverages, paints, textiles, papers, ink among others.

The study revealed that gum arabic marketing in the study area was profitable as a total of 626,465.00 Kg was marketed among the 150 respondents that generated total revenue of ₦ 2,618,197.533. This gave GM/Kg and NP/Kg as ₦ 3.74 each.

The study also reported a positive great change in the income status of the respondents as 64% of the respondents lived indebted of their consumption before engagement in gum arabic marketing which dropped to just 6% after engagement in gum arabic marketing. This implies that gum arabic marketing has alleviated the poverty condition of majority of the respondents.

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