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Socio-economic Contributions and Marketing of Garcinia kola (bitter kola) in Ijebu- Ode Ogun State, Nigeria

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Abstract
This study examined the socio-economic contribution and marketing of *Garcinia kola* to rural human livelihoods in Ijebu-ode, Ogun State. The respondents were randomly selected in the study area. Data were collected with the aid of semi-structured and pre-tested questionnaire administered interpersonally to 100 respondents. Descriptive statistics tools was used to analyse the socio-economic variables while Gini coefficient and cost and return analysis were used to analyze the market structure and profitability respectively. New market had highest gross profit of ₦8,500 while Oke-aje market has the lowest gross profit of ₦3,293.75. Majority (90%) of the respondents revealed that trading in bitter kola is profitable. Poor marketing channels, price fluctuations and seasonality of the bitter kola were some of the challenges bitter kola marketers faced in the study area. Based on this finding, it was recommended that bitter kola marketers should endeavor to form a co-operative to assist one another with loans. Also, banking industry in Ogun state, Nigeria should consider giving out loans to traders to enable them go on mass trading of the product since price fluctuation was the most severe constraint to bitter kola marketing in the study area.
Keywords: Profitable, Marketing, Market structure, Bitter cola

INTRODUCTION

Garcinia kola, a non-timber forest product is commonly known as 'bitter kola'. It is an economic and highly valued nut-bearing tropical tree available in large quantity in West Africa. The use of Non-Timber Forest Products (NTFPs) is as old as human existence (Aiyeloja and Ajewole, 2006). *G. kola* prevails as a multi-purpose tree crop in the home gardens of Southern Nigeria and produces edible and medicinal seeds which are widely consumed. *G. kola* is among the few commercial NFTPs that have several uses, the most important being chewing stick and medicinal (Mshana *et al.,* 2000). The seeds together with other parts of the plant are used in medicinal preparations. The seeds when chewed have a bitter, astringent taste. Despite its bitter taste, *G. kola* nuts are commonly eaten as snacks and used for their stimulant effects due to high caffeine content. *G. kola* has great economic value across West Africa; and the seeds are of particular importance in the social-cultural lives of the people in the tropics. According to Chinyere *et al*. (2013) the plants bark, seeds and stem are traditionally used in the treatment of throat infections, acute fever and inflammation of the respiratory tract. As one of the important NTFP after timber, *Garcinia kola* (bitter kola) serve as a source of living for the rural and urban means of livelihood. They are not only the chief raw material for traders in various parts of the world, but they also have great social benefits as a source of livelihood for the people residing near the forest areas (Renuka, 2000). The objective of this study is to determine the socio-economic contribution and marketing of *G. kola* (bitter kola) to rural livelihoods with a view to promote conservation and medicinal uses of bitter kola.

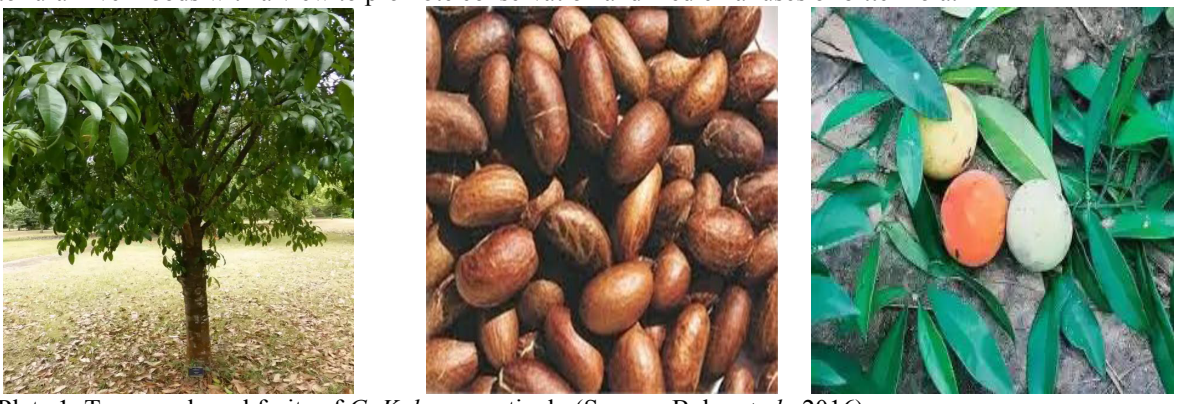

Plate 1: Tree, seeds and fruits of *G. Kola* respectively (Source: Buba *et al.,* 2016)

METHODOLOGY

The study was carried out in Ijebu-Ode, Ogun State. Ijebu-Ode is one of the cities in Ogun State located in the South-West, Nigeria. It is the second largest city in Ogun State after Abeokuta. It has an estimated population of about 154,032 (NPC, 2006). It lies between latitude 6.82˚N and longitude 3.92˚E. Simple random sampling

procedure was used in selecting the number of respondents in the study area. Markets covered were Oke-aje, New market and Ita-ale, and 100 copies of questionnaire were administered to the randomly selected *G. kola* traders in the study area.

DATA ANALYSIS

The quantitative and qualitative data were analyzed using appropriate descriptive and inferential statistical tools. Descriptive statistical tools such were used to analyze the socio-economic characteristics of the respondents.

COST AND RETURN ANALYSIS

This was used to determine the profitability.

Gross revenue (GR) = Total output × unit price

Gross profit (GP) = GR - VC

Net profit (NP) = GP- FC

$$\text{Rate of return (ROR)} = \frac{TR}{TC} \times 100$$

Profit = TR – TC

$$\text{Rate of Return on Investment (RORI)} = \frac{\text{Profit}}{TC} \times 100$$

$$\text{Profitability index (PI)} = \frac{GP}{GR}$$

Where;

TR = Total revenue
TC = Total cost
TVC = Total variable cost
TFC = Total fixed cost

GINI COEFFICIENT

This was used to determine the market structure.

$G = 1 - \Sigma XY$

Where;

G = Gini coefficient
X = Percentages of sellers per period of study.
Y = Cumulative percentage of total sales (revenue)

RESULTS

Table 1: Socio-economic characteristics of the respondents

VARIABLES	FREQUENCY	PERCENTAGE	MODE
SEX			
Male	5	5	
Female	95	95	Female
AGE (Years)			
25-34	21	21	
35-45	48	48	35-45
46-55	31	31	
MARITAL STATUS			
Married	82	82	Married
Divorced	8	8	
Widow	10	10	
LEVEL OF EDUCATION			
No formal education	42	42	No formal
Primary	41	41	
Secondary	17	17	
ETHNIC GROUP			
Yoruba	100	100	Yoruba
RELIGION			
Christianity	48	48	
Islam	52	52	Islam
FAMILY SIZE			
2-4	60	60	2-4
5-7	40	40	
MODE OF ACQUISITION			
Inheritance	36	36	
Apprenticeship	64	64	Apprenticeship
YEARS OF EXPERIENCES			
1-5years	5	5	
6-10years	29	29	
11-15years	35	35	11-15years
16-20years	31	31	
OTHER OCCUPATION			
Yes	99	99	Yes
No	1	1	
SOURCE OF CAPITAL			
Personal saving	100	100	Personal saving

Source: Field survey (2016)

Table 2: Valuation and Utilization of *G. kola* plant parts

VARIABLES	FREQUENCY	PERCENTAGE	MODE
IS THE PLANT VALUABLE?			
Yes	100	100	Yes
No			
BARK USAGE			
Malaria	84	84	Malaria
Diabetes	16	16	
SEED			
Cough	60	60	Cough
Sore throat	27	27	
Snake repellant	08	08	
Detoxify poison	15	15	
ROOT USAGE			
Stomach	70	70	Stomach
Tiredness	30	30	

Source: Field survey, 2016

Table 3: Marketing activities of respondents

VARIABLES	FREQUENCY	PERCENTAGE	MODE
METHOD OF PRESERVATION			
Air drying	100	100	Air drying
PACKING MATERIAL			
Nylon	100	100	Nylon
CUSTOMERS			
General public	98	98	General public
Herbalists	2	2	
SHOP RENT			
1500- 2000	52	52	1500-2000
2500-3000	48	48	
TAX PAYMENT			
Yes	93	93	Yes
No	7	7	
MODE OF PAYMENT			
Per market day	93	93	Per market day
Per month	7	7	
MARKET CHALLENGES			
Price fluctuation	78	78	Price fluctuation
Seasonality	21	21	
Poor market structure	1	1	
BUSSINESS RATING			
Lucrative	90	90	Lucrative
Non- lucrative	10	10	

Source: Field survey, 2016

Table 4: Average monthly profitability at ITA-ALE market

Parameters	TOTAL (₦)
Fixed Cost	
Basket	650
Rent	1,283.33
Variable Cost	
Cost of buying	15,666.67
Tax	75
Other Expenses	75
Total Fixed Cost	1,933.33
Total Variable Cost	15,816.67
Total Cost	17,750
Total Revenue	23,359
Gross Profit	5,609
Rate of Return	131.60
Rate of Return on Investment	24.01
Benefit Cost Ratio	1.32
Profitability Index	0.24

Source: Field survey, 2016

Table 5: Average monthly profitability at OKE-AJE market

Parameters	TOTAL(₦)
Fixed Cost	
Basket	650
Rent	2,550
Variable Cost	
Cost of buying	15,825
Tax	75
Other Expenses	75
Total Fixed Cost	3,200
Total Variable Cost	15,975
Total Cost	19,175
Total Revenue	22,468.75
Gross Profit	3,293.75
Rate of Return	117.18
Rate of Return on Investment	14.67
Benefit Cost Ratio	1.17
Profitability Index	0.15

Source: Field survey, 2016

Table 6: Average monthly profitability at NEW MARKET

Parameters	TOTAL(₦)
Fixed Cost	
Basket	650
Rent	553.33
Variable Cost:	
Cost of buying	10,566.67
Tax:	75
Others:	75
Total Fixed Cost	1,203.33
Total Variable Cost	10,716.67
Total Cost	11,920
Total Revenue	20,420
Gross Profit	8,500
Rate of Return	171.31
Rate of Return on Investment	41.63
Benefit Cost Ratio	1.71
Profitability Index	0.42

Source: Field survey, 2016

Table 7: Profitability of sellers in the three (3) markets

Markets	TFC(₦)	TVC(₦)	TC(₦)	TR(₦)	GP(₦)	ROR	RORI	BCR	PI
ITA-ALE Market	1,933.33	15,816.67	17,750	23,359	5,609	131.60	24.01	1.32	0.24
OKE-AJE Market	3,200	15,975	19,175	22,468.75	3,293.75	117.18	14.67	1.17	0.15
NEW Market	1,203.33	10,716.67	11,920	20,420	8,500	171.31	41.63	1.71	0.42

Source: Field survey, 2016

TFC: Total fixed cost
TVC: Total variable cost
TC: Total cost
TR: Total revenue
GP: Gross profit
ROR: Rate of return
RORI: Rate of return on investment
BCR: Benefit cost ratio
PI: Profitability index

Table 6: COMPUTATION OF GINI COEFFICIENT

Markets	Frequency	(X) % of sellers	Cumulative %	GP	% of income	(Y) Cummulative %	(XY)
OKE- AJE Market	40	40%	40%	3,293.75	19%	19%	0.0757
ITA-ALE Market	30	30%	70%	5,609	32%	51%	0.1535
NEW Market	30	30%	100%	8,500	49%	100%	0.3000
TOTAL	100			17,402.75			0.5292
						GINI CO-EFFICIENT:	**0.4708**

GP: Gross Profit (Income)
Source: Field survey, 2016

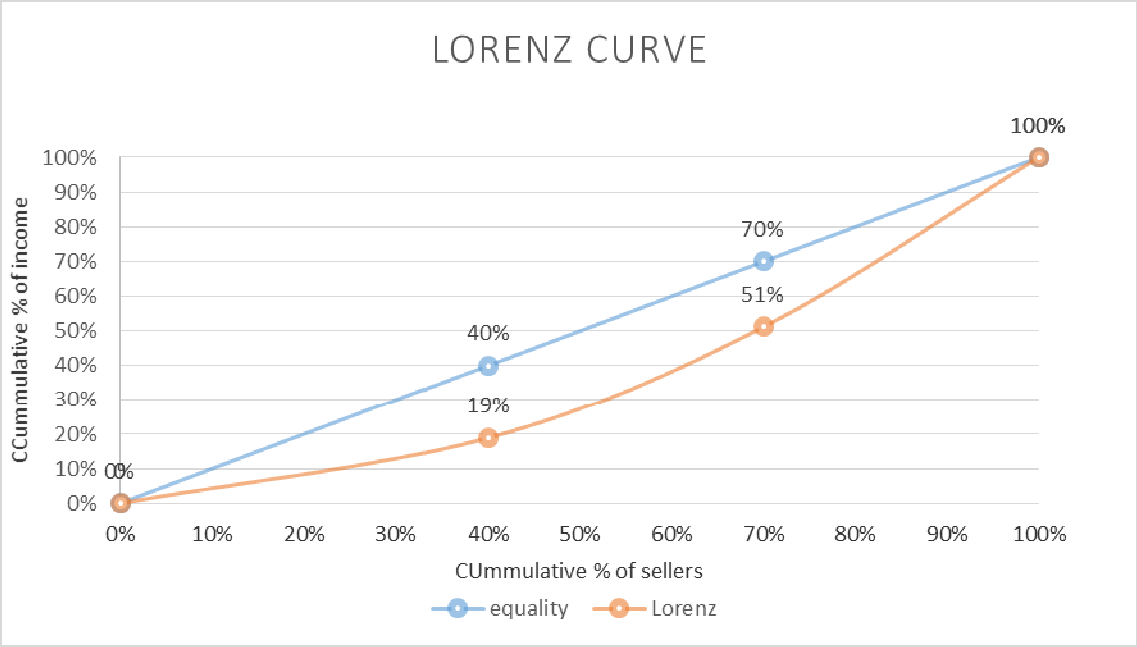

Figure 3: Lorenz curve for the three markets

DISCUSSION

G. kola contributes significantly to the socio- economic livelihood of the people. From the field survey, it was revealed that about 95% of the respondents were female while 5% were male, this is in line with Ogunwande *et al.,* 2009 that women are more predominant in capital aspects of forestry businesses. The respondent has a mean age of 36 years. This is an indication that most of the traders of *G. kola* were still within the active age group and could easily move around to source for the *G. kola* products and one of the reasons why adults were more involved in *G. kola* marketing was because of their experience and having good sense of judgment to avoid losses. It was observed from the survey that 82% of the respondents were married while 8 and 10% of the respondents were divorced and widowed respectively, majority (82%) of the respondents were married and this conforms with the findings of Taphone, (2009) who reported that married people have more responsibilities in taking care of their family members and this may be the reason why the enterprise is dominated by them so as to meet these responsibilities. Marriage is a highly cherished value among people in the study area as reported by Ekong (2003). It was shown that majority (60%) of the respondents had household size between 2-4 people while 40% had household size ≥4 people. The finding agrees with Asa and Eyo (2015) who reported that the average household size of rural dwellers in Ijebu-ode is low. Okoli (1991) reported that the seeds, nuts and bark of *Garcinia kola* plants have been used extensively in African traditional medicine for the treatment of various diseases. The bark of the *Garcinia kola* was used by majority (84%) of the bitter kola traders for the treatment of malaria by the Yorubas. 16% were using it for the treatment of diabetes (help to reduce the sugar content in the body system). The root was used for the treatment of stomach disorder (70%) and also to relieve tiredness (30%) by the Yorubas. Yoruba people use Bitter kola nuts as an important component of the materials used in traditional naming and marriage ceremonies, because they have better understanding about the plant's parts and this is probably due to fact that it was passed down to them from their progenitors. Traditional herbalists use Bitter kola in various pharmacopoeia preparations for various ailments (Aiyelaagbe *et al.* 1996, Adebisi 2004).

According to Oguntola, (2010), it is a painless and safe medication for men suffering from erectile dysfunction and premature ejaculation as well as to improve sexual performance. Bitter kola enterprise in the study area could be termed profitable with Benefit Cost Ratio (BCR) of 1.32, 1.17 and 1.71 for Ita- ale, Oke- aje and New markets respectively. Rate of Return on Investment (RORI) of 24.01, 14.67 and 41.63 for Ita- ale, Oke-aje and New markets, respectively also shows that the business is lucrative in the study area. Trading in bitter kola is more profitable than trading in others non-timber forest products in most developing countries (Adebisi, 2004). This is could be because of the high amenability of bitter kola (both in fresh and dried forms) to storage. Gini coefficient (G) of 0.4708 that was obtained in this study revealed that the market structures for *Garcinia kola* tend towards oligopoly. The market for the *Garcinia kola* is characterized by the presence of few sellers. Majority (78%) of the respondents were faced with the challenges of price fluctuations in the study area and the findings corroborate with Yusuff *et al.,* 2014 who reported that poor marketing structure, seasonality and price fluctuation were major challenges facing the marketing of NTFPs such as bitter kola in Nigeria. Famuyide *et al.,* 2012 opined that price fluctuation as a major constraint to bitter kola marketing is due to the fact that the forest fruits are not always available throughout the year due to their seasonal nature and perish-ability which makes them scarce leading to unwarranted changes in prices of the fruits.

CONCLUSION

The study has shown that the contributions of *G. kola* to nation's economy cannot be overemphasized. Bitter kola marketing in the study area is profitable. The severe constraints to bitter kola marketing in the study area were: poor marketing channels, price fluctuation, and seasonability of bitter kola nuts. Based on the findings of the study, the following recommendations are made:

a. The officials of the Ministry of Forestry in Ogun State, Non-Governmental Organisations and Community-based Organisations should organize training programmes on effective marketing for bitter kola marketers in the State since poor marketing channel was a major constraint to bitter kola marketing faced by the respondents.
b. The banking industry in Nigeria should be made to consider giving out loans to the bitter kola traders, to enable them go on mass trading of the product.
c. Subsidized storage facilities /modern processing equipment should be made available to bitter kola marketers by both Governmental and Non- Governmental agencies in the State.
d. Bitter kola marketers in the study area should endeavor to form co-operatives to enhance their ability to access storage and transportation facilities thereby overcoming some of the major constraints to their marketing activities

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