

NISEB 2011192/12105

Marketing of processed seeds of *Parkia biglobosa* (Keay) in some selected markets in three Local Government Areas of Oyo State, Nigeria

E. V. Aghimien*, J. Kukogho, A. A. Ekaun, R. B. Sanni and O. A. Geply

Department of Forestry Technology, Federal College of Forestry, Jericho, Ibadan, Nigeria

(Received September 25, 2011; Accepted December 10, 2011)

ABSTRACT: This study investigates the marketing of the processed seeds of *Parkia biglobosa* in some selected markets in three local government areas of Oyo state. The three local government areas were purposively selected based on the high number of *Parkia biglobosa* marketers present there, and seven markets were randomly selected in the three local government, namely, Eleyele market, Ogunpa market, Bodija market, Ojoo market, and Moniya market. Structured questionnaires were randomly administered on respondents and there were also interviews for respondents. The data obtained were subjected to statistical analysis and the result showed that the marketing of the processed seeds of *Parkia biglobosa* in the area is dominated by females (100%), it also showed that most of the people involved in the marketing had no formal education were 44.3% and most of them are between the age ranges of 41-50year. Also, the study revealed that 52.9% of the marketers are married

From the result obtained, it was observed that marketing of *Parkia biglobosa* is profitable and efficient in the areas, and further study showed that the marketing have two channel namely, Major channel and Minor channel. Finally, the study showed that the marketers of *Parkia biglobosa* processed seeds usually face some unavoidable problems like high cost of transportation, seasonality of seeds, stressful method of processing, inadequate capital, and storage problem. It is therefore recommended that adequate storage facilities should be made available, cooperative societies and other financial institutions should give out loans to these marketers so that they can produce in large scale and also research institutions like Forestry Research Institute of Nigeria (FRIN) should carry out more research work to improve seed availability and pipe borne water should be made available.

Key words: Marketing; Seasonal variation; Seeds; *Parkia biglobosa*.

Introduction

Non-timber forest products (NTFPs) provide a wide range of unqualified benefits. They serve as sources of food for human beings and animals, medicine to prevent and cure several diseases, spices that add flavour to food, natural food colors and through the seed a variety of products are obtainable from them. In view of this, forests in Nigeria have been focusing much attention on research activities towards high productivity as well as optimum utilization of these NTFPs. (Bridle and Timberlake, 1997).

*Author to whom all correspondence should be addressed.

Food is a major prerequisite for human development. It is one of the basic necessities of life. The seeds of *Parkia biglobosa* (African Locust Bean Tree), a multipurpose tree species have been recognized as a potential raw material for soup and food condiment. It is a widespread savanna tree commonly known as "Dadawa" in Hausa language, "Iru" in Yoruba language and "Ogiri" in Ibo language. The high nutritional value of the processed seeds of this species has been reported by various researches (Oremakinde, 1996).

African locust bean tree (*Parkia biglobosa*) has been reported to have an array of multipurpose uses, but little has been discussed of its role in food security and poverty alleviation among rural dwellers. Researchers define food security as the ability to meet target consumption level and to reduce to the minimum poverty rate of the people (Anamayi *et al*, 2005). By this food security encompasses three major components which are; adequate food supply, stability in the flow of food supplied and access to the available supplies by those who need them (Ajakaiye and Olomola, 1999).

Marketing requires investment and for adequate investment, there is need to ascertain the profitability, efficiency, and the marketing channels for the product for such investment. This is important to serve as basis for investment decision for improved management and production of the processed seeds of *Parkia biglobosa*. The general objectives of this study is to examine the marketing system of the processed seeds of *Parkia Biglobosa* in some selected markets in three local government areas of Oyo state, determine the socio-demographic characteristics of the processed seeds of *Parkia biglobosa* marketers, determine the profitability of the processed seeds of *Parkia biglobosa*, determine the marketing efficiency of the processed seeds of *Parkia biglobosa*, determine the marketing channels of the processed seeds of *Parkia biglobosa* and to Identify the problems encountered in marketing of the processed seeds of *Parkia biglobosa*.

Statement of the Problem

Parkia biglobosa, a multipurpose tree species, has been recognized as a potential raw material for soup and food condiment, and a very good source of plant protein. Protein intake levels in Nigeria according to FAO report, as cited by (Ezike and Nwoye, 2002) is far below the recommended FAO minimum level of 35g per capita. If the problem of low protein intake is to be addressed, then all efforts must be put in place to ensure adequate production and distribution of food items with high level of protein content. Therefore, this study took a look at the marketing of the processed seeds of *Parkia biglobosa* to find out how it has performed as means of getting this important source of protein to the people to enhance protein intake and better the lots of people.

Justification

Production, marketing, and consumption are the three basic economic elements that make up the economic system of any society, be it an economically affluent stage, a developing, or under-developing stage (Adegeye A.J, 1985). In the process of economic development, marketing enters as a fundamental element, due to the fact that it performs critical roles in different ways. An efficient marketing system is essential in getting products down to consumers as well as the provision of outlets and incentives for increased production. It is in the light of this that a study of the marketing of processed seeds of *Parkia biglobosa*, a source of protein that could improve the protein intake of Nigerians were carried out.

Materials and Methods

Study Area

Ibadan is situated in the rainforest zone of Nigeria with an average rainfall distribution of about 1"250mm and 1800mm. The temperature of the area ranges between 27°c and 32°c with relative humidity of about 75% to 90%. It has an estimated population of about 2,550,593 (Nigeria population census 2006). Ibadan lies between 7°N and 9°N of the equator, within longitude ranging from 3°E and 5°E of the Greenwich Meridian.

The study was limited to three local governments in Ibadan, Oyo state, which are; Ibadan North West Local Government in Ibadan North Local Government, and Akinyele Local Government.

Sampling Techniques and Sample Size

A reconnaissance survey was carried out in 11 local governments areas of Ibadan to determine the local government that has the highest number of *Parkia biglobosa* marketers, and after the survey 3 L.G.As were purposively selected because they have the highest number of *Parkia biglobosa* marketers .The 3 L.G.As selected were; Ibadan Northwest Local Government, Ibadan North Local Government, and Akinyele Local Government. From these 3 local governments, 7 markets were randomly selected out of 13 namely; Ogunpa market, Dugbe Market, Eleyele market from Ibadan northwest local government, Sango and Bodija market from Ibadan north local Government, Ojoo and Moniya market from Akinyele local government. Finally a total of 70 structured questionnaires were administered in all, 30 copies were administered in Ibadan northwest local government, 20 copies in Ibadan North local government and 20 copies in Akiyele local Government. All questionnaires were personally retrieved and the data obtained was subjected to statistical analysis.

Data Analysis

The data collected were analyzed using descriptive statistics informed of averages and percentages. Gross margin index was used to analyze these data to determine the profitability. Market efficiency ratio was also used to determine the efficiency of marketing of processed seeds of *Parkia biglobosa*. The gross marginal analysis can be expressed as:

$$\begin{aligned} II &= TR - TC \\ II &= II - t \\ RR &= \frac{TR}{TC} \times 100 \end{aligned}$$

Where II = Gross profit

II = Net profit

RR = Ratio at return

TR - Total Revenue

TC = Total cost

t = tax

Marketing efficiency is expressed as:

$$ME = \frac{TR \times 100}{TMC}$$

Where ME = Marketing efficiency

Results and Discussion

Socio - Demographic Characteristics of the Respondents

Table 1 shows that the marketing of *Parkia biglobosa* seeds is dominated by females. The findings agree with (Anamayi et al, 2005), that women are mostly involved in the collection of *Parkia biglobosa* seeds than men, and also agree with (Dada, 2005) that men are mostly involved in the collection of non-timber forest products (NTFPS).

Table 1: Distribution of Respondents by Gender

Gender	Frequency	Percentage (%)
Male	0	0
Female	70	100
Total	70	100

Table 2 shows that educational status of the respondents in which majority (44.3%) had no formal education. 35.7% of the respondents had primary education and 20% had secondary school education. This is in line with (Dada, 2005) that majority of those that are involved in the collection; processing and marketing of *Parkia biglobosa* had no formal education.

Table 2: Educational Level of Respondents

Educational level	Frequency	Percentage (%)
Non-formal	31	44.3
Primary	25	35.7
Secondary	14	20.0
Tertiary	0	0
Others	0	0
Total	70	100

Table 3 shows that 30% of the respondents are between the age ranges of 41-50 years. 24.3% are between the age ranges of 31 -40 years, 17.1% are between the age range of 50 and above, and 14.3% are between the age range of 10 - 20 and 21 - 30 years.

This agrees with (Ahmed, 2003) that people are involved in the processing and marketing of the processed seeds of *Parkia biglobosa* are between the age range of 41 - 50 years, but agrees with (Anamayi *et al*, 2005) that the collection of seed is mainly embarked upon by able bodies which are between the age of 31 - 40 years.

Table 3: Age Distribution of the Respondents

Age (Years)	Frequency	Percentage
10-20	10	14.3
21 -30	10	14.3
31-40	17	24.3
41 -50	21	30
50 above	12	17.1
Total	70	100

Table 4 shows that majority (52.9%) of the people that are involved in the marketing of the processed seeds of *Parkia biglobosa* are married, 25.7% are widow, 90% are single and 6% are divorced. This is in line with (Dada, 2005) that most of the people involved in processing and marketing of non-timber forest products (NTFPs) are married.

Table 4: The Marital Status Distribution of Respondents

Marital status	Frequency	Percentage (%)
Married	37	52.9
Single	9	12.9
Divorced	6	8.6
Widow	18	25.7
Total	70	100

Gross Marginal Index

The gross marginal analysis can be expressed as follows:

$$II = TR - TC$$

$$II = II - t$$

$$RR = \frac{TR}{TC} \times 100$$

Where II = Gross profit

II = Net profit

RR = Ratio at return

TR = Total Revenue

Table 5: Marketing Margin of Parka biglobosa processed seeds

Item	Value N : K
Fixed cost (FC)	
L.G.A Revenue/tax	20:00
Cost of materials	1630:00
Total fixed cost	1650:00
Variable Cost (VCT)	
Cost of raw materials	1300:00
Processing	300:00
Transportation	30:00
Total variable cost	1630:00
Total cost	3280:00
Total Revenue (on 10 congos)	3895:00
Gross Profit/10 congos/week	615:70
Net profit	595:70
Rate of Return	118.8%
Marketing efficiency	132.9%

Table 5 shows that the cost of marketing of the processed seeds of *Parkia biglobosa* with the total fixed cost equal to N1650.00k while total cost amounted to N1630.00k shows that the gross profit is N617.70k and rate of

returns 118.8% and marketing efficiency is 132.9%. Since the rate of return is greater than 100, it means that the marketing of the processed seed of *Parkia biglobosa* is profitable. This is in line with (Odebiyi, 2003) that the collection of non-timber forest product (NTFPS) is profitable. Also, since the marketing of the processed *Parkia biglobosa* seeds are greater than 1, it means that it is efficient.

Table 6 revealed that 27.7% of the respondents complained of the method of processing to be very stressful, 23.7% are faced with the problem of inadequate capital, 17.9% encountered the problem of water scarcity, 17% of respondents are faced with the problem of storage, and very few (4.5%) are faced with the problem of transportation.

Table 6: PROBLEMS ENCOUNTERED IN THE MARKETING OF THE PROCESSED SEEDS OF *Parkia biglobosa*

Problem	Frequency	Percentage (%)
High cost of transportation as a result of increase in price of price of petrol	10	4.5
Seasonality of seeds	38	17.0
Water scarcity	40	17.4
Stressful method of processing	62	27.7
Inadequate capital	53	23.7
Problem of storage	21	9.4
Total	224	100

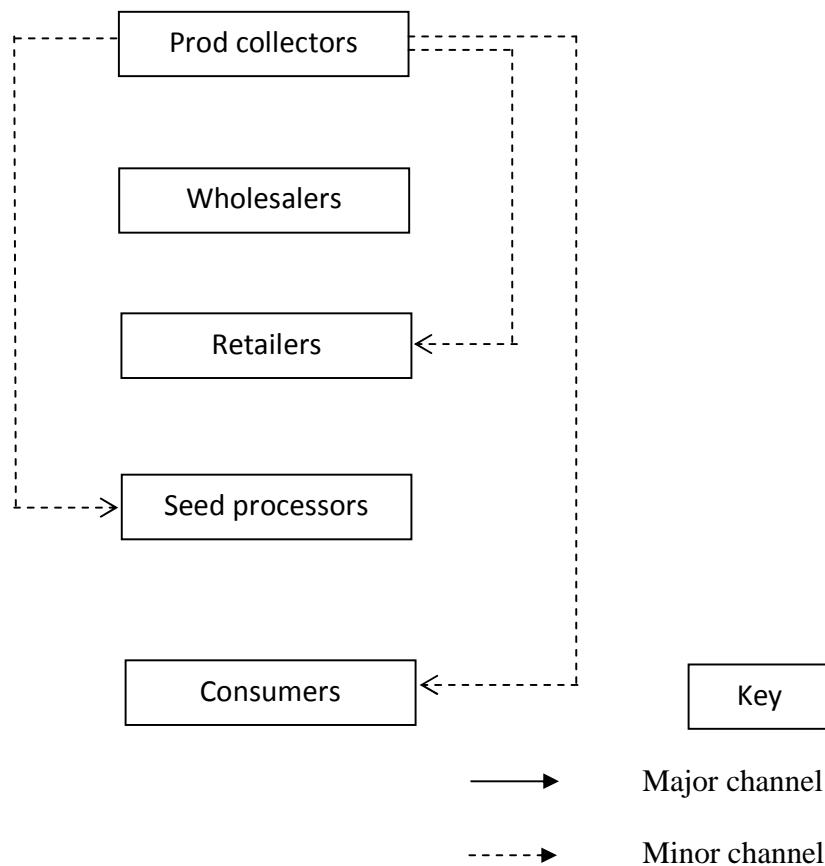


Fig. 1:: The Marketing Channel of the processed Seeds of *Parkia biglobosa*

The diagram above (Fig. 1) shows the marketing channel of processed seeds of *Parkia biglobosa*. The marketing of *Parkia biglobosa* has both major and minor channel. The major channel starts with the pod collectors to the wholesalers, retailers, seed processor and finally to the consumers. The monitor channel starts with the pod collector to the retailers and can be from the pod collector to the seed processors or from pod collectors to the consumers.

Through the major channel the collectors collect the pods from the forest, do the pre-processing operation by extracting and washing the seeds, then they sell to the wholesalers. The wholesalers sell in bags to the retailer sells in small quantities to the processor who sells to the consumers. Through the minor channel the retailer, seed processor and consumer get the seeds from the pod collectors. This is similar to the marketing channel for cowpea as illustrated by (Olukosi and Isitor, 1990).

Conclusion

The study assessed the socio-demographic characteristics of the people that are involved in the marketing of the processed seeds of *Parkia biglobosa* in Ibadan North West Local Government, Akinyele Local Government, and Ibadan North Local Government of Oyo state. The marketing channel, marketing efficiency, profitability and the problems that were encountered in the marketing channel, marketing efficiency, profitability and the problems that were encountered in the marketing of the processed seeds is dominated by female (100%) out of which 52.9% are married, 44.5% had no formal education and most of the workers are between the ages of 41-50 years.

The profitability of marketing the processed seeds which gave 118.8% rate of returns on the amount that was invested on the sales of the processed seeds. The study shows that the marketing of the processed seeds of *Parkia biglobosa* in the three local government of Oyo state is efficient.

Recommendations

Based on the findings of the study, it is hereby suggested that adequate storage facilities should be provided and co-operative societies and other financial institutions should give out loans to the marketers of the processed seeds of *Parkia biglobosa* in order to improve their source of capital. In addition, research institutions such as Forestry Research Institute of Nigeria (FRIN) should carry out more research work on the *Parkia biglobosa*, so as to contribute to the availability of the seeds. The government should provide pipe bone water in order to make the processing of the seeds easier

References

- Adegeye A.J. (1985): Essentials of Agricultural Economics, Impact Publishers Nigeria Limited pp. 102-108 and 173-174.
Ahmed O.A (2003) The Economic Analysis of locust Bean Seeds (*Parkia biglobosa*) Processing in Ibadan Metropolis ND Project. Federal College of Forestry Ibadan, Pg 10-22.
Ajakaiye D. O and Olomola A. S (1999). Conceptual and Methodological Issues in Poverty Alleviation, Billion Publication of Central Bank of Nigeria (CBN) vol. 23 No. 4 pp 3-9.
Anamayi S. E., Anamayi, R. M. and Thomas (2005): Contribution of *Parkia biglobosa* seeds to Household Feed Security and Poverty Alleviation among Rural Dweller of Igbagi Local Government Area of Kaduna State FAN., Proceedings 2005, Pg 336.
Bridle P. and Timberlake C. F. (1997) Anthrocyanins and Natural Food Colors selected aspect, Food Chemistry 58(1-2) pg. 103-109.
Campbell - Platt G. (1980): African locust bean (*Parkia spp*) and its West African Fermented feed product: Dawadawa; Ecology of fruit and Nutrition 9: pg 123-132.
Dada T. (2005): The uses and Marketing of *Treculia Africana* in some selected Markets of Ibadan. Federal College of Forestry, Ibadan, HND Project Pg 8-15.
David B., Stonley F., and Rudiger D. B., (2000): Economics 6th edition. Pg 126-164.
Ezike K.N. and Nwoye F. C. (2002): The Role of Basic in Financing Livestock and Fishery Production in Nigeria Processing of the 9th Annual Science Association of Nigeria. Pg. 223-225.
Kartande A.B., (1995): useful trees and Shrubs for Uganda identification, propagation and management for Agricultural and Pastoral Committee Regional Soil Conservation Unit (RSCU). Swedish International Development Authority (SIDA)
Keay R.W.J., Onochie C.F.A. and Stanfield D.P., (1989): Trees of Nigeria. Vol. 2 Oxford, Science Publications Pg. 200-202.

NISEB Journal Volume 12, No. 1 (2012)

- Modern A. R., (1987): Element of Marketing O.P. Publication London.
- Odebiyi and Ogunjobi (2003): The Role of Non Timber Forestry Product (NTFPS) in Alleviating Poverty in Odeda L.G.A. of Ogun State, Nigeria FAN Proceeding 2003, pg 59.
- Olukosi and Isitor (1990): Marketing Performance of Cowpea in Different Market Location in Ibadan, HND Project. Federal College of Forestry, Ibadan Pg 21-24.
- Oremakinde M. (1996): The Harvesting, Processing and Nutritional Value of Parkia *Biglobosa*. Federal College of Forestry, ND Project Pg 5-14.
- Popoola L., Azeem I.O. Amusa T.O. and Adebisi L.A. (2005): Assessment of Agro-forestry Practice as a land use option in ATISBO L.G.A of Oyo State Nigeria. FAN proceeding, 27th edition, Pg 119.
- Schery R. W. (1952). Plant for man, Pp 406-407, Edited by Ernest Abbey, Prentice Hall, and Plant Science Series