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Full Length Research Paper

Exploring the Marketing Dynamics of Non-Timber Forest Products in Osun State, Nigeria

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Research on markets and marketing of some non-timber forest products (NTFPs) was carried out in selected locations of Osun State. The NTFPs considered are chewing sticks such as *Massularia acuminata* and bush meat like *Thryonomys swinderianus*, representing both the flora and fauna aspects of NTFPs, respectively. Five Local Government Areas were randomly selected, namely; Odo-otin, Boripe, Iwo, Irewole and Atakunmosa for the research purpose. A total of 300 questionnaires were administered, 150 questionnaires for each of the NTFPs. Each NTFPs was further subdivided to production, marketing and usage or consumption with 50 questionnaires for each unit. It was gathered from the result that *M. acuminata* tops the list of the well favoured chewing sticks. Other types of chewing sticks that rank high include fagara (*Zanthophylum zanthoxonoides*) and Ira *(Rauwolfia vomitora).* Bush meat is also cherished by people most especially in urban centres where it is regarded as a delicacy. Despite the preference of bush meat, the rate of consumption is still low relative to other animal protein sources. Apart from these two NTFPs, several others of economic, nutritional and medicinal importance exist. A list of some of them is made with their uses. NTFPs are grossly affected by seasonal changes and this in turns affect their availability and prices. In all, considering NTFPs in the light of economic gain alone will be parochial even though analysis for the marketing of the two NTFPs shows that they are viable business ventures. The values should extend beyond the economic gain to other values which are indispensable to the existence of man. A major but neglected aspect is the medicinal aspect of NTFPs.

Key words: Forest products, NTFP, marketing, Nigeria.

INTRODUCTION

The use of non-timber forest products (NTFPs) is as old as human existence. In subsistence and rural economies the role and contributions of NTFPs in the daily life and welfare of people all over the world are crucial because of their richness of variety, as sources of food for example fruits, nuts, honey, insects, animals etc. fodder, fibre, fertilizers, medicinal extracts, construction materials, cosmetic and cultural products, natural dyes, tannin, gums, resins, latex and other exudates, essential oils, spices, edible oils, decorative articles, horns, tusks, bones, pelts, plumes, hides and skins, non-wood ligno-cellulosic products, phytochemicals and aroma chemi-cals.

These products are derived from a variety of sources - plants (palms, grasses, herbs, shrubs, trees) and animals (insects, birds, reptiles, large animals) and other non-

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living components of the ecosystem. Different parts of a plant or animal often provide different products simultaneously and or at different times.

About 80% of the population of the developing world depends on NTFP for their primary health and nutritional needs (FAO, 1995). It is therefore paradoxical that in spite of their real and potential value, most NTFPs remain grouped as minor products of forests. These products rarely feature in statistics and are hardly studied or researched.

Forest management in Nigeria and in Osun State in particular has been largely focused on timber production ever since the beginning of organized forestry. However, in the recent time, there has been increasing recognition of the fact that this approach to forest management is neither conducive to sustainable management of the forests particularly of the tropical moist forest nor is it in the best economic interest of the predominantly rural societies in the tropics.

The term non-timber forest product preferably called non-wood forest products in some regions of the world has been used (of recent) to replace minor forest product as it was formerly particularized. The regional expert consultation on NWFP for Africa held in Arusha Tanzania, 1993, defined NTFP as all vegetal and faunal products (other than wood) derived from forests and other wooded land and trees outside the forests, excluding industrial round wood, wood used for energy, horticultural and livestock products.

Rijsoort (2000) defined NTFPs as all tropical forest products plants and animals or parts thereof) other than industrial timber, which are (or can be) harvested for human use at the level of self-support or for commercial purposes.

Gone are the days when NTFPS were exclusively free of charge for anybody that could go into the forest to harness them. Due to the relative scarcity of most of the NTFPS now as a result of deforestation, as noted by Nwoboshi (1986) and the present awareness of their importance, more value is being added which has made them (NTFPS) highly marketable. Osemeobo (1991) noted ~~th~~at rural wo~~m~~en were found to be making between ~~₦~~115 and ~~₦~~500 in fruit gathering and sale. The low income may not be unconnected with the fact that NTFP markets have been in the middle of a drastic evolution. Traditional markets for many products have been lost to competing synthetic materials while new markets are emerging especially with the growing interest in natural products.

Marketing of NTFPS connotes marketing in all its possible variations since NTFPS comprise a variety of products that satisfy the needs and wants of all kind of end-users. Some of the products are bought by final consumers without any major processing (e.g. fruits, berries, mushrooms etc) others are bought by industrial customers who use them as raw materials in making either other industrial products (e.g. converting essential oils to fragrances) or consumer products.

Despite the fact that both the rural and urban economies are highly depended on NTFPS such as leaves, fruits, fuel wood, mushrooms and others to generate income and to provide food and medicare, little or no attention is given to this important natural, renewable revenue earner.

METHODOLOGY

Information about Osun State

Nigeria covers an area of about 983,213km^2 and about 1/3 is classified as forest (Ogunlade, 1993) while Osun State covers a total area of approximately 8,602km^2 and is bounded in the south by Ogun State, in the north by Kwara State, in the west by Oyo State and in the east by Ondo State. Agriculture is the traditional occupation of the people of Osun State. The tropical nature of the climate favours the growth of a variety of food and cash crops. The main cash crops include cocoa, palm produce, kola, while food crops include yam, maize, cassava, millet, rice and plantain.

The vegetation consists of high forest and derived savanna towards the north. The high forest often called tropical rainforest areas are dominated by forest tree species such as *Melicia excelsa, Terminalia ivorensis, Terminalia superba, Khaya grandifoliola, Nauclea diderichii, Lophira alata Lovoa trichiliodes, Trema guinensis, Musanga cercrepiodes, Sterculia tragacantha* and *Ceiba pentandra* among others. Savanna tree species include *Annona senegalenses, Bridelia ferrugina, Casia sieberiana, Khaya senegalensis, Nauclea latifolia, Prosopis africana, Vitaleria parado-xum, Parkia biglobossa, Terminalia glaucean and Daniella oliveri.* These trees and other living components of the area have been disturbed by annual forest fires and other human activities.

A sizeable part of the old Oyo forest reserve are located in the present Osun State. These include Ago Owu Forest Reserve with 32,116 hectares in the high forest area, Oba Hills Forest Reserve with 3,367 ha each in both the high forest and derived savanna Ila reserve has 259 ha in the high forest area Ife NA, Oni and Ikeji/Ipetu have 8,598;5,283; and, 3,548 ha, respectively, in the high forest area. The grand total of Osun State Forest Reserve is 58,839.32 ha comprising of 53,172.40 ha in the high forest and 5,666.92 ha in the savanna. Osun state is located between longitude $040^0 33^1$E and latitude $07^0 28^1$N. Usually the wet season last between March and October, while the dry season comes between November and February. Mean annual rainfall is between 2,000 and 2,200 mm. Maximum temperature at 32.5^{o}C, Relative Humidity 79.90%.

Sampling technique and sample size

The random sampling technique was used to select two Local Government Areas from the derived savanna vegetation (Boripe and Odo-Otin) and three local government areas from the tropical rain forest of Osun State (Iwo, Irewole and Atakunmosa West). The same technique was used to select two towns/villages from each of the five local government areas.

A total of 300 questionnaires were administered. 150 questionnaires were assigned to each product, making 30 questionnaires for each local government areas on each product. The number of questionnaires for each local government area was 60.

Table 1. Level of income of respondents from the field survey.

Income / Month ₦	Odo-Otin	Boripe	Iwo	Irewole	Atakunmosa	Total	%
< 10000	1	1	4		2	10	20
10000-20000	6	5	2	2	6	24	48
>20000-40000	3	3	3	5	2	13	26
>40000-60000	-	1	1	1	-	3	6
Above 60000	-	-	-	-	-	-	-
Total	**10**	**10**	**10**	**10**	**10**	**50**	**100**

Source: Field Survey

Table 2. Educational background respondents (consumers).

Educational Background	Odo-Otin	Boripe	Iwo	Irewole	Atakunmosa	Total	%
Informal	2	2	1	1	2	08	16
Primary	2	2	2	3	2	11	22
Secondary	3	1	5	1	4	14	28
OND/NCE/HND	2	4	1	4	2	13	26
Degrees	1	1	1	1	-	04	08
Total	**10**	**10**	**10**	**10**	**10**	**50**	**100**

Source: Field Survey

Statistical analyses

The information gathered are represented in the form of tables. Chi - square was used to test whether the quantity of bush meat purchased is affected by the educational background or the level of income of the consumers. It was also used to test whether the quantity of chewing stick purchased is dependent on the educational background or level of income of the consumers.

RESULTS AND DISCUSSION

It was observed that the consumption of chewing stick is not a function of income level or educational background of the respondents ($P<0.05$), neither is it a function of sex nor marital status (Table 1 and 2).

Most of the respondents use chewing stick on daily basis most especially the "Ijebu" type *Massularia acumi-nata* other species include Ata, (fagara) Idi *(Terminalia gleucescens)* and Ewuro *(Vernonia amygda- lina)*. Substitutes of chewing stick include all varieties of tooth-pastes whose price difference from chewing stick range between N30 and N100 depending on type. While many prefer chewing stick because it is cheap, few others believe it makes teeth sharper and stronger. Those who prefer toothpaste hinge their reason on the fact that the use of chewing stick takes time and may damage the gum. Chewing stick retailers are usually petty traders and school children who are often seen at motor parks as early as 5 a.m. in the morning and late in the night. These are the periods they claim to make their highest sales. Chewing stick is also obtainable in stores and supermarkets. Of recent, chewing stick is being wrapped and sealed decently in cellophane in Supermarkets to make it more hygienic. While wholesalers buy in bulk, the splitting is done before selling to the retailers who sell to consumers in bunches of, ₦10, ₦20 or ₦50. Just like some other forest products, chewing stick is more abundant during the wet season. Problems facing the marketing of chewing stick include transportation, capital and storage of stick to prevent it from excessive dryness.

Bushmeat is a delicacy which is cherished by most people. The dwindling nature of supply underscores the effect of human pressure on their abundance. 98% of the respondents prefer bushmeat to other meat though almost half of them (48%) consume bushmeat occa-sionally. Market survey reveals that bush meat is sold in parts to cater for low income earners who are interested in bushmeat. Most of the respondents buy quantities ranging from ₦1000 to ₦2000. Only few buy more than ₦5000 in a month. As low as ₦200 worth be bought in a restaurants. This is the reason why there is no significant difference in the demand of bushmeat based on the level of income ($P<0.05$). This is because the quantity demanded varies from one respondent to the other.

Bushmeat marketing is a worthwhile business. Over 60% of the marketers are supplied game on a daily basis.

Table 3. Shows the average prices for the sales of games as follows.

Animal	Adult (₦)	Sub adult (₦)	Young ones (₦)
Grass Cutter	1,800	1,100	600
Antelope	2,100	1,300	700
Snake (depending on species)	1,200	500	350
Squirrel	300	160	100
Monkey	1,300	800	300
Snail	120	70	40
Porcupine	2,500	1200	500
Crocodile	5,000	3,500	2,000

Source: Field Survey

The number bought by each respondent ranges from 1 to 3 for big animals while smaller animals like snail may be more than 10. Since most of the games are processed before sales, and the possibility of game getting spoilt is removed. It is also noted that processing adds more value to games. Table 3 shows the average prices for the sale of different types of bushmeat.

Some people abhor snake and monkey due to traditional and religious beliefs. Crocodile is not common. Middlemen activities are minimal and a difference of ₦500 to ₦1000 or more is realized on each bushmeat bought directly from hunters. This depends on the species and the stage at which the meat is bought by the marketers.

The three main methods used in killing animals are trapping, gun shot and tracking down. Apart from meat, almost all the species of wild animals have one medicinal value or the other. Both the visceral and the bones of many of them are used in the preparation of medicine for different ailments. The skin, horns (Antilas), feathers and shells are used as decorations. Some animals like the parrot and chimpanzee are used as pets. They are also useful in medical researches. Giant animals such as the elephant (*Loxodonta africana*), hippopotamus (*Hippopo-tamus amphibius)* , bufalo (*Syncerus cafer*) and the big cats like the lion (*Panthera leo*), tiger (*Panthera tigris*) and leopard (*Panthera pardus*) are no longer common in free areas.

Marketing channel

The channel begins with the chewing stick producer or harvester who either exhumes the root of plants as in the case of fagara (*Zanthophylum zanthoxonoides*) or cuts the stem as in *Rauwolfia vomitora*. The channel links the wholesaler directly or in some cases passes through the processor who does the splitting. Where it passes to the wholesaler directly, the wholesaler does the washing, cross cutting and splitting before selling to the retailer. The retailer may re-split before dividing them into smaller units (bunches) of between ₦20 and ₦50 each. There is no direct link between the producer or processor and the consumer in the case of *M. acuminata* though this may exist in other types that are widely marketed.

Consumers can buy bushmeat from the market (wholesaler or retailer), restaurant or by the road side on the high ways (hunters). Usually, the wholesaler does the processing. In some cases, hunters do process the meat before sale most especially at popular spots on the highway for consumers to buy. This is common at Ikire in Irewole Local Government Area of Osun State. Youths besiege approaching vehicles at the checking points with fried or roasted bushmeat. Restaurants are also categorized as wholesalers because they buy bushmeat in bulk and they have regular supplies from hunters and other marketers. Snails are sold live in bunch of 5 or more on the highways or in the markets.

Market margin

The margin does not include that of the harvester. As in any other enterprises, the wholesalers require a huge capital to have a solid foundation. New entrants therefore require operating capital of between ₦ 16,000 to ₦20,000. Retailer can have as little as ₦1000 to start depending on the number of chewing sticks initially purchased from the wholesalers (Table 4).

Market margin varies from one animal to the other. It also depends on the bargaining power of the people involved. For snail, there is no processing or much labour except for the distance which transportation cost adequately takes care of. The margin for snail can be analyzed as follows:

Table 4. *Massularia acuminata* per participant.

Wholesaler	Cost (₦)	Benefit (₦)	Margin (₦)
50 m^3 roundwood	3,000		
Transportation	800		
Labour (cross cutting)	600		
Management	1,000.40		
Total	5,400.40		
Selling price (6,170 sticks)		8,000	
Margin			2,599.60
Retailer			
6,170 sticks	8,000		
Packaging and sales labour	2,000		
Total		10,000	
Selling Price (N2.00 per stick)		12,340	
Margin			2,340.00
Total Marketing Margin			4,939.60

Source: Field Survey

Table 5. Marketing margin for bushmeat (grass cutter) (per participant).

Hunter	Cost (₦)	Benefit (₦)	Margin (₦)
Labour (1 Monday)	500		
Bullet	160		
Transportation	100		
Management (10% of Total Cost)	80		
Total Cost	840		
Selling		1,800	
Margin			960
Wholesaler			
Purchase	1,800		
Processing	200		
Transportation	40		
Management	240		
Total cost	2,280		
Selling Price		3,000	
Margin			720
Total Marketing Margin			1,680

Source: Field Survey

Gatherer's selling price =₦80 per One (Big)
Wholesaler's selling price =₦140.00 " "
Restaurant selling price =₦200.00 " "

The margin =₦120.00

Source: Field Survey.

Table 6. List of Ntfps in Osun State

Botanical Name	Common Name	Plant Part Used	Uses
Vernonia amygdalina	Ewuro	Leaf, Stem and root	Soup
Zanthophylum zanthoxonoides	Fagara	root	chewing stick
Morinda lucida	Oruwo	root	"
Nauclea latifolia	Ogbesi	root	"
Garcinia kola	Orogbo	stem	"
Jatropha curcas	Lapalapa	stem	"
Raphia nitida	Irosun	stem	"
Terminalia gleucescens	Idi-odan	stem	"
Psidium guajava	Guava	stem/fruit	"
Parkia biglobosa	Igba	fruit /food	food
Irvingia garbonensis	Oro	fruit	"
Butyrospermum paradoxum	Emi	fruit	"
Tetracarpidum conophorum	Awusa	fruit	"
Aframomum melegueta	Atare	fruit	medicinal
Tetrapleura tetraptera	Idan	stem/back	"
Agaricus sp	Mushroom	leaf	food
Tectona grandis	Teak	leaf	wrapping food
Thaumatococcus danielli	Ewe Iran	"	"
Sarcophrynum brachystachys		"	"
Mitragyna stipulos	Ewe obe	"	"
Cola nitida	Obi	fruit	Food
Zingiber officinale	Ginger	fruit	medicinal
Spondias mombin	Agbalumo	fruit/bark	"
Megaphrynium macrostachyum	Iyeye	fruit/bark	food /med.
Alstonia bonnei	Gbodogi	leaf	wrapping food
Momordica foetida	Awun	bark	medicinal
Rauwolfia vomitora	Ira	leaf	chew.Stick/me
Ficus exasperata	Eepin	leaf	washing
Pycnathus angolensis	Akomu	bark	medicinal
Melicia excelsa	Iroko	bark	"
Azadirachta indica	Dongoyaro	leaf/bark	"
Ocimum gratissimum	Efinrin	leaf	"
Mitragyna cylindrica	Abura	leaf	"
Solanum incanum	Igba	fruit	food
Obvitenthera abbyssinica	Oparu	stem	craft/buildin
Massularia acuminata	Pakoijebu	stem	chewing stick
Newboulda laevis	Akoko	leaf	cultural
WILD GAMES			
Tragelaphus scriptus	Antelope, Igala		meat
Sylvicapra griminia	Antelope, Esuro		"
Thryonomys swinderianus	Grass-cutter, Oya		"
Antherurus africanus	Porcupine, Oore		"
Antherurus africanus	Monkey, Obo		"/pet
Erythrocebus patas	Squirrel, Okere		"
Anomarulus spp	Snail, Igbin		"
Archachatina marginata	Crocodile,Oni		"
Crocodilus niloticus	Bush pig, Imado		"
Potamochoerus porcus	Bush fowl, Etu		"
Trancolinus bicakaratus	Monitor		"
Varanus niloticus	Giant rat, Okete		"
Cricetomys gambianus	Common Names		"

The total marketing margin for grasscutter (*Thryonomys swinderianus*) is N1680 (Table 5).

CONCLUSION

While the importance of NTFPs is coming into lime light, there are some militating problems against their production and marketing. NTFPs are biological entities which are grossly affected by seasonal variation. This in turn affects their prices. In Nigeria, there are two seasons, rainy and dry. Most of the NTFPs are cheap during the raining season because of the abundance of rain while they are relatively expensive during the dry season. There has not been any recorded irrigation scheme for the production of NTFPs in the State.

Apart from seasonal variation, another factor that affect the supply of NTFPs is the presence of competing substitutes. Hardly is there any NTFP without a close substitute and as any other agricultural product, the demand for NTFPs is almost perfectly elastic. Other problems include high transport cost cum poor transportation which affects the price of NTFPs especially those brought from a far distance. Lack of capital and credit facilities also some of these products on a large scale. Harvesting of many NTFPs is labour intensive and a lot of wastage accompanies it.

Medicinal products are found with the "Elewe Omos' or the "Lekuleja". These are women who deal with the sales of NTFPs used in medicines. Most of the medicinal products have competed favourably with orthodox medicine in the past and in the present; they have been incorporated into the therapy which has proved successful. It is common to see drugs made from NTFPs in patent stores after they have been certified by registered pharmacists (Table 6).

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