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PROFITABILITY OF NON-TIMBER FOREST PRODUCTS (NTFPS) PRODUCTION AND MARKETING IN ZURU LOCAL GOVERNMENT AREA, KEBBI STATE: A CASE FOR HONEY

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ABSTRACT

The study examined production and marketing of honey in Zuru Local Government area of Kebbi state. This research covers five district areas of Dabai, Manga, RafinZuru, Rikoto and Senchi. Five villages each of the districts were purposively selected, four (4) respondents were randomly selected from each village giving a total sample size of 100 respondents. 100 structured and open – ended questionnaires were administered, out of this number, 86 were retrieved. The data were analyzed using simple descriptive statistics and gross margin. In the marketing channels, individual consumers are the most active patronizers whereabout 36.0 and 37.2% of the honey producers and marketers respectively obtained between ₦6001 – ₦8000 and ₦2801 - ₦4800 net profit per week. The total profit made by the producers and marketers of honey were ₦610,150.00 and ₦478,560.00, while the average profits were ₦7,094.77 and ₦5,564.65 per week. Thus, honey production and marketing is a profitable business in the area. The rate of return was 375.93. The benefit cost ratio is greater than one (4.76), indicating that revenue from the business is able to cover the total cost. To address the problem of capital, the study recommended that honey producers and marketers should form co-operative societies so as to enable them access loans to boost their business.

Keywords: Production, Marketing and non-timber forest products, Profitability.

Contribution/ Originality

This study, the first of its kind in the study area has contributed immensely in providing insight into the profitability and worth-whileness of the venture by uplifting the living standard and overall socio-economic capabilities of the stakeholders.

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1. INTRODUCTION

Honey is part of the forest resources known as non-timber forest products (NTFPs). It is an important household resource in savanna regions of West Africa, including Nigeria (Crane, 1980). The production and processing techniques of honey is broadly similar across the region. This product is an important food resources and used for treatment of various diseases. Hence, it's contribution to household food security is therefore significant (Crane, 1980). Honey is of vital importance because of its remedy for conjunctivitis and ear infections, toothache, cough, sore throat, mouth diseases, typhoid fever, hair loss and skin diseases. Mc Gregor (1976) reported that honey bees are known to play a leading role in pollen transfer in many agricultural and horticultural crops. It was estimated that the value of honey bee pollination in Australia was as much as $214 million. Honey Production requires minimal capital and can supplement income of rural dwellers. Bidemi (1999) reported that in Nigeria many physicians have identified the medicinal value of honey. It also improves haemoglobin formation, calcium retention, relief from constipation and diarrhea. It is also a good source of energy, protein, vitamins and minerals needed for adequate growth, maintenance and functioning of body tissues and organs (Bidemi, 1999). Honey bee products such as honey, beewax and pollen remain important inputs in pharmaceuticals, food, furniture, soaps and candle industries. Honey is used, in the study area as food and as medicine for treating wounds, ulcers, stomach ache and as well, for hair growth.

A lot of benefits can be derived from large scale production and marketing of honey. Honey product is regarded as part of the evidence of nature's kindness to man in many regards while its significance has always been overlooked as an important minor product from the forest. Food and Agriculture Organization (FAO) does not support such product in its year book of forest products (Moncur and Somerville, 1989). In the absence of such data and information, the value of the product can easily be disregarded in our areas, especially in comparison with that of timber, which can be relatively easily quantified. Non-wood products are often sold locally and are difficult to monitor but easy to ignore. The existing expertise and knowledge of honey is limited or inadequate in the study area. There is equally lack of appropriate method and tool to promote sustainable use of this product and successfully regulate its trade. Despite the economic importance of honey, a lot of it is wasted during the traditional method of production (extraction) which is extremely labour intensive. Therefore, setting up of cottage industries with improved extraction technology, will reduce wastage, increase productivity and create employment opportunity to youths (Olagunju, 2000). The major objective of this paper is to examine the profitability of honey production and marketing in Zuru Local Government Area of Kebbi State.

2. METHODOLOGY

2.1. Study Area

The study was conducted in Zuru Local Government Area of Kebbi State. Zuru is one of the twenty one (21) local government areas of Kebbi State. It is located within latitudes 11°35' to 11°

55'N and longitudes 4° 45' to 5° 25' E of the equator (Kebbi State Government, 2003), at the extreme south eastern part of Kebbi State and covers an area of approximately 32, 626 square kilometer.

The weather is marked by rainy season and long dry season. The average rainfall is 1025mm/annum, falling between May to October which last for about 4 - 5 months a year. The climatic condition of the area is characterized by hot and wet season as in the tropical areas with the months of November to January as harmattan period. Annual temperature ranges between 35°C to 39°C. The vegetation is Sudan savanna with predominance of trees such as *Parkia biglobosa*, *Vitellaria paradoxa*, *Adansonia digitata* and *Balanites aegyptiaca* and shrubs like *Anona senegalensis*, *Gaudenia senegalensis* and *Guirea senegalensis* as well as grasses like *Andropogon gayanus*, *Cymbopogon gayanus*, *Striga spp*, etc in the area. The soil type is sandy loam and rich in nutrients which makes it suitable for agriculture (Kebbi State Government, 2003).

The research covered five districts of Dabai, Rikoto, Manga, Senchi and Rafin-Zuru in Zuru local government area. Five (5) villages from each district were purposively selected based on the concentration of producers and existence of honey markets. Random selection was made of four (4) respondents in each village giving a total of 100 respondents for producers and marketers giving a sample size of 100 respondents for the study. Data collected were subjected to descriptive and inferential statistics. Frequency and Percentages were used on the Socio-economic characteristics, while profit margin analysis (net profit, rate of return and benefit cost ratio) were used to examine the cost and return of the producers and marketers of honey in the area.

Profitability Analysis:

- $$\pi = TR - (TFC + TVC) \quad \text{.....(1)}$$

Where:

π = Net Profit

TR = Total Revenue

TFC = Total Fixed Cost

TVC = Total Variable Cost

Rate of return:

- $$ROR = \frac{\pi}{TC} \times 100 \quad \text{.....(2)}$$

Where:

ROR = Rate of Return

π = Net Profit

TC = Total Cost

Benefit cost ratio:

- $$BCR = \frac{TR}{TC} \quad \text{.....(3)}$$

Where:

BCR = Benefit Cost Ratio

TR = Total Revenue

TC = Total Cost

3. RESULTS AND DISCUSSION

3.1. Socio – Economic Characteristics of Respondents

Personal characteristics of respondents are important human attributes that play a significant role in the production and marketing of honey. The variables include tribe, gender (sex), age, marital status, and level of education attained and occupation (primary and secondary) of the producers and marketers of honey. Dakkarawa are the predominant producers and marketers of the commodity. Similarly, it appeared to be a male dominated activity, especially the youth. The predominance of males in this category is associated with honey tapping at night which is very difficult for women to participate. This finding agrees with Shuaib (2009) who recorded 90% male and 10% female participants in some areas of Yahaya and Usman (2007) in Shuaib (2009) who stated that no female was engaged in the production of honey in Katsina state. The finding also showed that most of the honey producers and marketers were within the active labour force where younger individuals participated more than the elderly. This was supported by Ogungbile *et al.* (2002) who asserted that younger farmers are more likely to adopt an innovation than older farmers because of better education and more exposure to new ideas. Most of the respondents (86.0%) were married. This means that, married individuals are more committed to their responsibilities and work very hard to earn their living. In support of this work, Olarinde *et al.* (2008) reported that one of the most important factors which determine technical efficiency of a business is the marital status of an individual. This is because married people worked hard in order to meet up with the demand of the family members. Results revealed that 70.9% of the honey respondents had household size of 1 - 10 persons, implying that labour is limited in this class, while 7.0% of the honey respondents had household size of between 21 to 30 persons. Availability of cheap labour reduces the cost of hired labour and haence increase the profit margin. Other studies have indicated that larger family sizes are expected to enable farmers to take up labour intensive activities (Anley *et al.*, 2007) (Table 1).

The results revealed that respondents have one form of education or the other – Quranic, Adult or tertiary education - thereby helping them in adopting any technology introduced to them. This was supported by Obinne (1991) who reported that education influences the adoption of new innovations, ideas or techniques in business operations. Farinde *et al.* (2005) revealed that education is positively related to the adoption of innovation. The implication of those that had no

formal education is that, it would be difficult for them to adopt modern techniques, innovation or new ideas in their business (Table 2).

Most of the actors are experienced in the business because 16.2% and 17.4% of the producers and marketers had between 16 and 30 years and above in the bussiness (Table 3). This could be attributed to long history of production and marketing in the study area as some of the actors were born and brought up in the business. With adequate training and innovative intervention, the producer's efficiency in the production and marketing of honey would be enhanced (Farinde *et al*., 2005). This finding agreed with Voh *et al*. (2000) who indicated that experienced traders are more knowledgeable in their trade and this can influence positive changes in the business.

From the results it is apparent that, 94.2% of the honey respondents used traditional method of beekeeping in the locality. This is because modern techniques were not introduced in the study area and this finding is supported by Fichtl and Admasu (1994) who reported that traditional beekeeping is the oldest and the richest practice, which has been carried out by the people for thousands of years. Several million bee colonies are managed with the same old traditional beekeeping methods in almost all parts of the world. Only 5.8% of the respondents used migratory method in the locality. This could be due to lack of adequate knowledge of apiculture and sufficient capital to embark on the modern method of honey production in the area. Moreover, results indicated that 72.1% of the honey respondents used pressing method to extract honey. It was stated that the method is less time consuming and this was supported by Segeren *et al*. (1995) who indicated that pressing honey is more preferable and takes less time than floating. Only 19.8% of the respondents use floating method. Pressing and floating method were still in use in the study area due to lack of modern extraction equipments that are more labour efficient.

Family labour accounted for 86.1%. The implication of using family labour with no cost is that, honey producers will find it difficult to know the exact gain or profits of their business. The trend of using family labour over the hired is common in the study area.

3.2. Uses of Honey

The findings indicated that 97.7% of the honey producers and marketers use it for food and medicine this is due to its significance within the study area (Table 4). Respondents reported verbally that they use honey as medicine (for wounds, ulcers, sores and diarrhea). This finding agreed with Crane (1992) who indicated that honey-bees are the most widely known of all the bees because they provide honey as food, for medicinal purpose, beeswax and other products. Only 2.3% of the respondents use honey for consumption alone, this could be due to some religious belief that, honey, if taken alone, can treat many ailments.

The results from table 5 revealed that, 34 honey marketers representing 39.5% source their products from the open forest. This finding is in line with Soaga *et al*. (2013) who discovered that the forest is the major source of non timber forest products, with 57.3% of the respondents collecting the product from the forest. The table also indicated that most of the producers

produce the product for sale and market it for profit (Table 5). This finding is in line with Mallik (2004) in Soaga *et al.* (2013), that NTFPs attracts attention in the recent years for their potential to generate income through added value for processing and innovative marketing. It is also revealed that 60 respondents representing 69.7% of the honey marketers transport their honey products by means of car/motorcycle, and 22.1% used human labour for transporting their honey products (Table 5). Only 3.5% of the marketers use bicycles in transporting their honey products. This could be attributed to either closeness of the sources or the remoteness of the production areas which made the transportation system very difficult. This finding is similar to that of Tee *et al.* (2009) that the roads in the remote center are in a serious state of disrepair, motor cycle and bicycles are used in sourcing Palmyra palm products.

3.3. Profit of Honey Production and Marketing

The results revealed that 36.0% and 37.2% of the honey producers and marketers respectively obtained between ₦6001 to ₦8000 and ₦2801 to ₦4800 net profit per week (Table 6). This implied a very good contribution of the business to household economy as the production activities are concentrated during the dry season. It is interesting to note that, compared to producer's net profit, marketers' net profit is low which could be due to transportation cost. It was also apparent that the business will reduce the mass movement of people to cities looking for survivals reducing social vices in the communities where hitherto serious unrest prevails. There were other honey producers and marketers (2.3% and 1.2%) who had a better profit of (₦12001 – ₦14000 and ₦12801 - ₦14800) per week. These people even though few, were getting encouraging results. The size of profit is determined by quality a producer is able to produce per week. Thus, honey enterprise is profitable in the area.

The net profit obtained by the marketers was based on the amount of honey package sold to the consumers. This finding agreed with Eluagu and Nwali (1999) and also supports the findings of Olagunju and Ajetomobi (2003) who found that honey is a profitable venture and that unemployment among Nigerian youths can be reduced by encouraging them to engage in beekeeping, with subsidy from the government.

4. CONCLUSION

The study established that, honey production and marketing is a profitable venture in the study area. Honey business generates high profit despite the fact that, honey producers were using traditional method of production which is less rewarding and labour intensive. Problems like insufficient market joints and lack of capital were identified that require infrastructural development and government attention.

5. RECOMMENDATIOS

Based on the findings of this study, the following recommendations were made;

1. Men and women in the rural areas should be encouraged by the local, state and federal government to go into honey business as a means of reducing poverty in rural areas.

2. Honey producers and marketers should form co-operative societies so as to enable them access loans to boost their business, by adopting modern production technologies.

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Table-1. Tribe, Gender, Age, Marital Status and Household size of Respondents

Tribe	Frequency	Percentage
Dakkarawa	77	89.5
Hausa	7	8.1
Fulani	2	2.3
Sex		
Male	86	100.0
Female	0	0.0
Age		
20 – 29	24	27.9
30 – 39	34	39.5
40 – 49	14	16.3
		Continue
50 – 59	13	15.1
60 and above	1	1.2
Total	86	100.0
Marital Status		
Single	9	10.5
Married	74	86.0
Divorced	0	0.0
Widow	3	3.5
Total	86	100.0
Household Size		
1 – 10	61	70.9
11 – 20	19	22.1
21 – 30	6	7.0
Total	86	100.0

Source: Field Survey 2011/2012

Table-2. Educational status and main occupation of respondents

Educational Status	Frequency	Percentage
Quranic education	19	22.1
Adult education	19	22.1
Primary education	8	9.3
Secondary education	14	16.3
Tertiary education	5	5.8
No basic education	21	24.4
Total	86	100.0

Occupation		
Primary		
Extraction	83	96.5
Processing	0	0
Civil service	1	1.2
Tailoring	2	2.3
Secondary		
Farming	67	77.9
Tailoring	5	5.8
Petty trading	8	9.3
Civil service	6	7.0
Total	86	100.0

Table-3. Years of experience

Years		Producers			Marketers	
	Frequency		Percentage	Frequency		Percentage
1 – 5	30		34.9	25		29.0
6 – 10	18		20.9	26		30.2
11 – 15	24		27.9	20		23.3
16 – 20	5		5.8	6		7.0
						Continue
21 – 25	2		2.3	3		3.5
26 – 30	4		4.7	3		3.5
30 – above	3		3.5	3		3.5
Total	86		100.0	86		100.0

Source: Field Survey 2011/2012

Table-4. Methods of beekeeping, extraction and labor in the area

Method	Frequency	Percentage
Migratory method	5	5.8
Traditional method	81	94.2
Total	**86**	100.0
Extraction method		
Floating	17	19.8
Pressing/Squeezing	62	72.1
Floating and pressing	7	8.1
Total	**86**	100
Type of labour used		
Family labour	74	86.1
Hired labour	3	3.5
Family/Hired labour	9	10.4
Total	86	100.0

Source: Field Survey 2011/2012

Table-5. Access to honey resources, purpose of production and means of transportation

Products Sources	Frequency	Percentage
Travel near by	9	10.5
Open forest	34	39.5
Buy at village market	4	4.7
Farm land	16	18.5
Forest reserve	22	25.6
Travel nearby and buy at village market	1	1.2
Total	86	100.0

Purpose for Production	Frequency	Percentage
Market	44	51.2
Profit	26	30.2
Home consumption	11	12.8
Market and profit	1	1.2
Profit and home consumption	1	1.2
Market, profit and home consumption	3	3.4
Total	86	100.0

Transportation	Frequency	Percentage
Foot	19	22.1
Car /motor cycle	60	69.7
Bicycle	3	3.5
All of the above	4	4.7
Total	86	100.0

Source: Field Survey 2011/2012

Table-6. Net profit of honey production and marketing per week (₦)

Net profit of Producers (₦)	Frequency	Percentage	Net profit of Marketers (₦)	Frequency	Percentage
2001 – 4000	9	10.5	800 – 2800	5	5.8
4001 – 6000	16	18.6	2801 – 4800	32	37.2
6001 - 8000	31	36.0	4801 – 6800	28	32.6
8001 – 10000	23	26.7	6801 – 8800	10	11.6
10001 – 12000	5	5.8	8801 – 10800	8	9.3
12001 – 14000	2	2.3	10801 – 12800	2	2.3
			12801 – 14800	1	1.2
Total	86	100.0	Total	86	100.0

Source: Field Survey 2011/2012