

PROFITABILITY AND PROBLEMS OF TRADITIONAL BEEKEEPING IN BAGWAI LOCAL GOVERNMENT AREA OF KANO STATE, NIGERIA

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ABSTRACT

The study determined the profitability and problems of traditional beekeeping in Bagwai Local Government Area of Kano State. Four (4) villages, one each from four wards of the Local Government Area were purposively selected due to the intensity of traditional beekeeping activities. A sampling frame was developed out of which twenty (20) traditional beekeepers were selected using simple random sampling technique making a total of eighty (80) traditional beekeepers for the study. The data were obtained with the aid of questionnaire. Data collected were analyzed using descriptive statistics and farm budgeting techniques. The results of the study revealed that most of the traditional beekeepers were married within the age range of 38 to 57 years, who have attained Qur'anic education. They possessed between 9 and 12 household size. On average, each beekeeper holds 5 hives and obtains 33 liters per hive annually. Average total cost and average revenue were ₦9,781 and ₦27,914 respectively indicating a Net Farm Income of ₦18,133, and an average return per naira invested of 2.43. Major problems limiting profitable traditional beekeeping in the area were pests and diseases, theft, bush burning and poor marketing system. There is therefore the need to improve on the level of the beekeepers formal education, enlighten them on how to control pests and diseases and also provide them good marketing system.

KEYWORDS: Profitability, Beekeeping, Hives, Marketing, Household

INTRODUCTION

Beekeeping as the practice and management of the bees in the hive leads to the production of valuable materials such as honey, beeswax, propolis, bee pollen, bee venom and royal jelly. The term beekeeping tends to be loosely used to describe all the techniques involving bees and subsequent harvesting and processing of the products (Caruthers and Rodriguez, 1992 and Ojeleye, 1999).

Honey production is receiving greater attention in many parts of the world because the enterprise has been supplying non-perishable food to both rural and urban people even before refinery of sugar in 19th century (Gentry, 2001).

According to Farinde *et al* (2005) beekeeping empowers people economically because of its small capital requirement compared to other types of agricultural enterprises. This is because most of the equipment for traditional beekeeping can be made locally. Similarly, it uses little land and the quality of land is less important due to the fact that the hives are placed on the trees and on the soil (Farinde *et al* 2005). Earlier researches conducted in Nigeria to determine the profitability of beekeeping include Eluagu and Nwali (1999), Adekoya *et al* (2002), Yahaya and Usman (2007) and Shu'aib *et al* (2011). All these researches indicated that beekeeping is profitable, feasible and viable in the areas of the studies. Nevertheless, a study also needs to be undertaken to ascertain the profitability of traditional beekeeping which is still serving as a means of obtaining honey in Bagwai Local Government Area of Kano State, and also identify the problems associated with traditional beekeeping in the area.

METHODOLOGY

Bagwai Local Government is one of the forty four Local Government Areas of Kano State. The state is located within latitude 10° 33' N and to 12° 37' N and longitude 7° 34' E to 9° 29' E. The state covers a total land area of 20, 760km² (KNSG, 2004). Kano State has a population of 9,383,682 with an annual growth rate of 3.3% per annum (NPC, 2006). Four villages were purposively selected from four wards of the Local Government Area. These villages have the highest intensity of traditional beekeeping in the entire area. These wards and villages were Bagwai (Bagwai), Gogori (Gogori), Kiyawa (Kiyawa) and Wurobagga (Badau) respectively. A sampling frame was developed by enumeration with the help of *Sarkin Zuma* of the area totaling about 245. A simple random sampling technique was employed to select twenty (20) traditional beekeepers from each village, making a total of eighty (80) beekeepers. Data for the study were collected through the use of sets of questionnaire administered to the selected traditional beekeepers.

Descriptive statistics, percentages and farm budget analysis were employed in determining the profitability and identify problems facing the traditional beekeeping industry.

METHOD OF DATA ANALYSIS

The profitability of traditional beekeeping was analyzed using Net Farm Income model in accordance with Yahaya and Usman (2007). The net farm income model was specified as:

$$NFI = GR - (TFC + TVC) \dots\dots\dots (1)$$

Where:

NFI = Net farm income (₦/hive/year)

GR = Gross revenue (₦/hive/year). This is the revenue obtained from sales of honey and Beeswax.

TFC = Total fixed cost (₦/hive/year). This is the cost of variable inputs such as labour, batteries, matches and baiting materials.

Gross ratio which measures the overall financial success of the traditional beekeeping method was computed as:

$$GR = TC/TR \dots\dots\dots (2)$$

Where:

GR = Gross Ratio

TC = Total Cost (₦/hive/year)

TR = Total Revenue (₦/hive/year)

Furthermore, operating ratio (OR) measuring the solvency of the traditional beekeeping was computed as :

$$OR = TVC/TR \dots\dots\dots (3)$$

Where

OR = Operating Ratio

TVC = Total Variable Cost (₦/hive/year)

TR = Total Revenue(₦/hive/year)

Return to Naira invested was computed

$$RNI = TFI/TC \dots\dots\dots (4)$$

Where:

RNI = Return to Naira invested

TFI = Total Farm income

TC = Total Cost of Production

RESULTS AND DISCUSSION

Socio-economic characteristics of the traditional beekeepers

The socio-economic variables are important human attributes that enhance the efficiency of

traditional beekeeping. The variables identified and analysed include the age, marital status, household size and educational level of the traditional beekeepers. The results of these characteristics are presented in Table 1:

Table 1: Socio-Economic characteristics of the traditional beekeepers

| Characteristic | Frequency | Percentage |
|---------------------------|-----------|------------|
| Age | | |
| 18 - 27 | 3 | 3.75 |
| 28 - 37 | 17 | 21.25 |
| 38 - 47 | 23 | 28.75 |
| 48 - 57 | 31 | 38.75 |
| 57 and above | 6 | 7.50 |
| Marital Status | | |
| Single | 5 | 6.25 |
| Married | 71 | 88.75 |
| Divorced | 3 | 3.75 |
| Widowed | 1 | 1.25 |
| Household Size | | |
| 1 - 4 | 15 | 18.75 |
| 5 - 8 | 9 | 11.25 |
| 9 - 12 | 43 | 53.75 |
| 13 - 16 | 13 | 16.25 |
| Educational Status | | |
| Primary | 7 | 8.75 |
| Secondary | 2 | 2.50 |
| Adult | 7 | 8.75 |
| Qur'anic | 64 | 80.00 |

Source: Field Survey, 2011

The results of the study show that 38.75% of the traditional beekeepers were within the age range of 48-57 years. Traditional beekeepers are therefore relatively ageing, as far as work and labour provision are concerned. Ogunbile *et al.*

(2002) had already asserted that younger farmers are more likely to adopt an innovation than older farmers. Majority of the traditional beekeepers in the study area (89%) were married.

Married people have the responsibility of catering for the needs of their families and therefore engage in various economic activities that would serve as a source of income. Olarinde *et al* (2008) reported that one of the most important factors with determines technical efficiency is the marital status of the beekeepers.

The results in table 1 further revealed that the traditional beekeepers mostly possessed between 9-12 household members (about 54%). The large household size of the traditional beekeepers could be due to their relative high age. But the large household indicates that more labour would be available for beekeeping and other agricultural activities in the near future. On the educational status, the results also revealed that majority (80%) of the traditional beekeepers'

have only attained and obtained qur'anic education, with no any form of formal education. The traditional beekeepers efficiency could be improved with the attainment of formal education. Farinde *et al* (2005) revealed that education is positively related to adoption of innovation.

Occupation and experience of traditional beekeepers

Probably due to the nature of traditional beekeeping, little time is expended in the production of hive products compared to other agricultural enterprises. So, the beekeepers have to engage in other occupations such as farming, civil service, trading and artisanship. The occupations and experience of traditional beekeepers are presented in Table 2.

Table 2: Distribution of traditional beekeepers according to occupation and experience in beekeeping.

| Characteristic | Frequency | Percentage |
|-------------------------------|-----------|------------|
| Primary Occupation | | |
| Farming | 47 | 58.75 |
| Civil Service | 4 | 5.00 |
| Trading | 11 | 13.75 |
| Artisanship | 18 | 22.50 |
| Years of Experience | | |
| 1 -5 | 16 | 20.00 |
| 6 - 10 | 21 | 26.25 |
| 11 -15 | 37 | 46.25 |
| Above 15 | 6 | 7.50 |
| Number of Hives Owned | | |
| 1 - 3 | 13 | 16.25 |
| 4 - 6 | 32 | 40.00 |
| 7 - 9 | 19 | 23.75 |
| 10 - 12 | 16 | 20.00 |
| Number of Harvest/Year | | |
| Twice | | |
| Thrice | 23 | 28.75 |
| Four Times | 46 | 57.50 |
| | 11 | 13.75 |

Source: Field Survey, 2011

The results of the study in Table 2 show that majority of the traditional beekeepers (59%) engage in farming producing crops during the raining season. This implies that extra labour from beekeeping is used in farming. Other occupations include civil service, trading and artisanship.

In the same vein, majority of the traditional beekeepers have 11-15 years of experience in traditional beekeeping. This implies that majority of the beekeepers were relatively highly experienced in the business. The results also indicate that majority of the traditional beekeepers (40%) owned 4 -6 traditional hives. This contradicts the results of

Yahaya and Usman (2007) who reported that the beekeepers they studied owned 1-5 hives. On the number of harvests the traditional beekeepers made per year, majority of the beekeepers mad harvests three times in a year. This agrees with Yahaya and Usman (2007) who also reported that majority of the beekeepers they studied harvest three times in a year.

Profitability of traditional beekeeping

The revenue and costs structure of traditional beekeeping in the study area, farm financial ratios and capital invested are presented in Table 3.

Table 3: Average costs and revenue structure of traditional beekeeping (₦/hive/year) in the study area:

| Item | Amount (₦) | % of TC |
|----------------------------|---------------|--------------|
| Revenue | | |
| Honey | 23,760 | |
| Beeswax | 2,494 | |
| Royal Jelly | 1,660 | |
| Total Revenue | 27,914 | |
| Variable Cost | | |
| Baiting Material | 614 | |
| Battery | 135 | |
| Labour | 5,335 | |
| Fuel | 150 | |
| Total Variable Cost | 6,234 | 63.74 |
| Fixed Costs | | |
| Hive | 2,667 | |
| Torchlight | 90 | |
| Wire Mesh | 250 | |
| Total Fixed Cost | 3,547 | 36.26 |
| Total Cost | 9,781 | |
| NFI | 18,133 | |
| GR | 0.41 | |
| OR | 0.26 | |
| RNI | 2.43 | |

Source: Field Survey, 2011

The results in Table 3 show that the traditional beekeepers in the study area realize a Net Farm Income of ₦18,133 per hive per year, implying that traditional beekeeping is profitable in the study area. The gross ratio (GR) which measures the financial success of the venture was found to be 0.41. A less than one ratio is desirable in any viable business. Also, the operating ratio (OR) measuring the solvency of the venture was found to be 0.26. A less than one ratio is also desirable in feasible business. Impliedly, traditional beekeeping business in the study area is a viable and a feasible venture in terms of financial success and solvency. A return to Naira invested (RNI) was 2.43 indicating test every naira invested yields about ₦2.43k, implying still

that traditional beekeeping is a business worth investing in the study area.

Problems of traditional beekeeping in the study area

The problems facing traditional beekeeping in the study area are presented in Table 4.

The results of the study as presented in Table 4 revealed that majority of the traditional beekeepers suffer most from pests and diseases attack. Second most itching problem of traditional beekeeping in the area is the theft of the product, as the hives were placed away from the residences and could easily be tempered with in the nights. Other problems include lack of governmental intervention in form of subsidy and loan, bush burning and poor marketing system for the products.

Table 4: Problems of traditional beekeeping in the study area:

| Problem | Frequency | Percentage |
|---------------------------------|-----------|------------|
| Pests And Disease | 71 | 88.75* |
| Theft Of Product | 64 | 80.00* |
| Lack of Governmental Assistance | 57 | 71.25 |
| Bush Burning | 51 | 63.75* |
| Door Marketing System | 43 | 53.75* |

- Multiple responses possible

Source: Field Survey, 2011

CONCLUSION AND RECOMMENDATION

The study examined the profitability and described the problem facing the traditional beekeeping in Bagwai Local Government Area. The results of the study indicated that traditional beekeeping is profitability with a net farm income of ₦18,133, gross ratio of 0.41, operating ratio of 0.26 and a return to Naira invested of 2.43

problem affecting traditional beekeeping include pests and disease attack, theft, lack of government assistance, bush burning and poor marketing system. The study therefore recommends that the local and state government should intensify effort to provide adult literacy classes for these people to enhance their level of formal education.

Also, since traditional beekeeping in the area was found to be profitable, governments should also provide modern beekeeping facilities on loan or at subsidized rate to these traditional beekeepers in order to improve and enhance the measures for controlling pests and diseases

affecting the bees. The traditional beekeepers should also be more vigilant to reduce the menace of theft and avoid indiscriminate bush burning.

REFERENCES

- Adekoya, A.E., Akinola, A.A. and Fashola, A.A. (2002), Beekeeping as an income generating activity, A case study of honey bee farmers in Ibadan Metropolis, Oyo state. *Africa Journal of Livestock Extension* 1(2): 21 - 27.
- Caruthers, L. and Rodriguez, M. (1992): *Tools for Agriculture* Intermediate Technology Publication, Nottingham, United Kingdom, 238PP.
- Eluagu, L.S. and Nwali, L.N. (1999): An economic Appraisal of an improved method of Beekeeping in Nigeria. A case study of the Agriculture Unit, Federal College of Agriculture, Umudike. *The Nigerian Agricultural Journal*, 30:99 - 107
- Farinde, A. J., Soyebó, K.O. and Oyedokun, M.O. (2005): Exploration of beekeeping as coping strategy in a deregulated economy. *Journal of Agricultural Extension*, 8:76 - 83.
- Gentry, C. (2001): Small Scale beekeeping. Api Service.
www.beekeeping.com/articles/us/small. visited on 15th July, 2011.
- Kano State Government (KNSG) (2004): Kano state Government Official Diary, Directorate of Information, Kano Nigeria.
- National Population Commission (NPC) (2006): Provisional Census Figure for Kano state. Federal Government of Nigeria, Abuja.
- Ogungbile, A.O., Tabo, R. and Rahman, S.A. (2002) Factors affecting adoption of ICSVIII and ICSV400 Sorghum varieties in Guinea and Sudan Savanna of Nigeria. *The plant Scientist*, 3:21- 32.
- Ojeleye, B. (1999): *Foundation of Beekeeping in the Tropics*, Centre for Bee Research and Development (CEBRAD) Press, Ibadan, Nigeria, 225PP.
- Olarinde, L.O., Ajao, A.O. and Okunola, S.O. (2008): Determinants of technical efficiency in Beekeeping farms in Oyo state, Nigeria: A Stochastic Production Frontier Approach, *Research Journal of Agriculture and Biological Science*, 4(1): 65 - 69.
- Shu'aib, A.U., U.B. Kyiogwom and M.T. Yakasai (2011) profitability of modern beekeeping in selected Local Government Areas of Kano State, Nigeria: A Panacea for extreme Poverty and Hunger. Proceedings of the 34th Annual Conference of the Forestry Association of Nigeria held in Osogbo, Osun state, Nigeria. 05 - 10 December 2011, 1: 93 - 99.
- Yahaya, A.T. and Usman, L. (2007): Profitability and Constraints in Katsina State's Beekeeping Development project. *Journal of Rural Sociology and Information*, 3 (1): 29 - 38.