APPRAISING THE PERCEPTION OF FARMING COMMUNITIES TOWARDS ADOPTION OF APICULTURE AS A VIABLE SOURCE OF INCOME IN ADAMAWA STATE, NIGERIA

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ABSTARCT

The survey appraised the perception of members of urban and rural farming communities towards adoption of apiculture as a very profitable farming system in Adamawa State, Nigeria. Opinions from 160 respondents selected through a stratified simple random sampling were analyzed using descriptive statistics. Results showed that a larger proportion (30.63%) of the respondents fell between 40 and 49 years, with about 85% as males. While a larger percentage (46.25%) of the farming communities would rather adopt apiculture as a sideline economic activity, majority reported the stinging propensity of the bees (*Apis mellifera)* as the major constraint to adoption of the farming system. The study recommended a massive introduction of a well-designed extension package that will disengage apiarists and the potential beekeepers from the traditional methods. In this regard, the use of bee-suits and top-bar beehives should be encouraged, among others.

Keywords: Adamawa, Adoption, Apiculture, Nigeria, Respondent.

INTRODUCTION

Farmers have been producing crops and rearing livestock from time immemorial in this part of the globe. For decades, government extension agents have been bringing innovation techniques with the hope of improving crop yields and livestock production, which should result in bettering the economic status of farmers. Yet, reports have always been low output, and complaints of continued impoverishment among these farmers. Remedies have to be sought through experimentation with cost-effective farming systems that have been neglected for quite some time. Apiculture has been appraised in some parts of Nigeria and

other parts of the world with remarkable success in terms of profitability (Dukku, 2001; Saha, 2003; Farinde *et al;* 2005; Ja'afar-Furo, 2006). Therefore, the introduction of modern apiculture techniques becomes imperative.

However, for the effective popularization of apiculture in the farming communities of both the rural and urban areas, the level of awareness or perception of the farming communities towards apiculture as a viable/profitable source of income and the likely factors as constraints to the adoption of same have to be evaluated. The level of perception of the communities will determine the type of extension strategy/package to adopt. This study is therefore, a step towards this direction.

MATERIALS AND METHODS

The Study Area

Adamawa State is located at the northeastern part of the country. It is mostly an agrarian state with a land size of 39,742.12 square kilometer and a projected (to 2005) population of 3,106,858 using the 1991 National Population Census of the federal republic of Nigeria as a baseline. Major crops grown include rice, maize, sorghum, groundnuts, cowpea, cassava, yams among others, whereas activities like livestock production, apiculture, hunting, fishing, blacksmithing are also observed by a few people.

Sampling Procedure and Data Collection

The State is made up of 21 Local Government Areas (LGAs) and divided into four (4) agricultural zones based on vegetation and soil type (Adebayo and Tukur, 1999). These

zones include Central, Northwest, Northeast and Southwest zones. A total of eight (8) LGAs were selected randomly from the zones - Two (2) LGAs from each zone, representing 38.1% of the total LGAs in the state. These LGAs are Yola-south, Fufore, Gombi and Mubi-north. Others are Ganye, Mayo-belwa, Lamurde and Shelleng LGAs.

A LGA was divided into two (2) strata. The first stratum, which is the LGA headquarters was regarded the urban community, whereas the second stratum is composed of the district headquarters and termed the rural community. Ten (10) respondents were randomly selected from each stratum from the existing farming clubs, associations or co-operative societies in the respective localities. Therefore, 20 respondents were selected from each LGA and 160 (20 x 8 LGAs) from the whole study area in the year 2005.

The services of Forestry Superintendents of the respective LGAs mentioned were employed in collection of data through interview using structured questionnaire. The main parameters considered include the major occupation of respondents, their level of educational attainment, source(s) of information on apiculture and constraint(s) to adoption of same as a source of income.

The Data Analysis

The collected data were analyzed using descriptive statistics. Specifically, frequency distribution and percentages were used.

RESULTS

Table I: Distribution of Respondents Based on Age and Gender in Adamawa State, Nigeria.

Criterion	Frequency	Percentage (%)
1. **Age Range in years**		
less than 20	2	1.25
20 – 29	29	18.12
30 – 39	34	21.25
40 – 49	49	30.63
50 – 59	28	17.50
60 and above	18	11.25
Total	**160**	**100**
2. Gender		
Male	136	85
Female	24	15
Total	**160**	**100**

Source: Field Survey, (2005)

Table II: Distribution of Respondents According to Major Occupation and main Subsidiary Economic Activity in Adamawa State, Nigeria.

Occupation	Major Occupation	Major Subsidiary Economic Activity
• Crop Production	60(37.50)	90(56.25)
• Livestock Rearing	35(21.87)	70(43.75)

• Fishing	26(16.25)	-
• Beekeeping	9(5.62)	-
• Hunting	7(4.38)	-
• Blacksmithing	5(3.13)	-
• Petty Trading	8(5.0)	-
• Civil Service	10(6.25)	-
Total	**160(100)**	**160(100)**

Note: Values in Parentheses are Percentage of total in each category.
Source: Field Survey, (2005).

Table III Distribution of Respondents According to the Level of Educational Attainment in Adamawa State, Nigeria.

Level of Education Attained	Urban Farming Community	Rural Farming Community	Total Community Respondents
• Tertiary Level	10(12.50)	-	10(6.25)
• Secondary Level	30(37.50)	11(13.75)	41(25.62)
• Primary Level	8(10.0)	17(21.25)	25(15.62)
• Adult literacy class	21(26.25)	12(15.0)	33(20.63)
• No Formal Education	11(13.75)	40(50.0)	51(31.88)
Total	**80(100)**	**80(100)**	**160(100)**

Note: Values in Parentheses are Percentage of total in each Category.
Source: Field Survey, (2005)

Table IV: Perception of Respondents on Apiculture as a Source of Income in Adamawa State, Nigeria.

Perception on Apiculture	Urban Farming Community	Rural Farming Community	Total Community Respondents

• Apiculture is a highly Profitable enterprise	3(3.75)	6(7.5)	9(5.62)
• Apiculture can just be used as sideline economic activity.	29(36.25)	45(56.25)	74(46.25)
• Apiculture can be adopted as a hobby	9(11.25)	-	9(5.62)
• Apiculture is not Profitable	8(10.0)	3(3.75)	11(6.88)
• No idea about Apiculture	31(38.75)	26(32.5)	57(35.63)
Total	**80(100)**	**80(100)**	**160(100)**

Note: Values in Parentheses are Percentage of total in each Category.
Source: Field Survey, (2005)

Table V: Distribution of Respondents based on Sources of Information on Apiculture in Adamawa State, Nigeria.

Source of Information	Urban farming Community	Rural farming Community	Total community Respondents
• Over the Radio	26(32.5)	15(18.75)	41(25.63)
• Through the Television	8(10.0)	-	8(5.0)
• From fellow farmers	12(15.0)	39(48.75)	51(31.87)
• From Extension Agents	-	-	-
• Through Experience	3(3.75)	6(7.5)	9(5.63)
• Through the literature (Journals, Books etc)	2(2.5)	-	2(1.25)
• No Information	29(36.25)	20(25.0)	49(30.62)
Total	**80(100)**	**80(100)**	**160(100)**

Note: Values in Parentheses are Percentage of total in each Category.
Source: Field Survey, (2005)

Table VI: Distribution of Respondents According to Constraints to Adoption of Apiculture in Adamawa State, Nigeria.

Constraint to Adoption of Apiculture	Urban farming Community	Rural farming Community	Total community Respondents
• The Bee Stinging Propensity	77(50.99)	74(49.01)	151(100)
• The Rigours of climbing trees	54(63.53)	31(36.47)	85(100)
• The fear of going out at night	26(63.41)	15(36.59)	41(100)
• Cannot Afford to make or buy the required Beehives	18(62.07)	11(37.93)	29(100)
• Spiritual Reasons	-	9(100)	9(100)
• Cultural factors	13(54.17)	11(45.83)	24(100)
• Fear of cases of Honey theft and Vandalisation of beehives and/or their Products	8(14.29)	48(85.7)	56(100)

Note: Values in Parentheses show percentage of the total
Source: Field Survey, (2005)

DISCUSSION

The Socio-economic Characteristics of the Respondents in the Study Area

According to Nnema and Adaeze (2006), the socio-economic characteristics of individuals contribute immensely to the adoption of new agricultural practices in any given society. In this study, the age, major occupation, subsidiary economic activities and educational attainment of the respondents were considered. The results in Table I show the age range

and gender of the population studied. A larger proportion (30.63%) of the respondents fell between the ages of 40 and 49 years, indicating that majority of the urban and rural farming community members were within the category Banmeke and Olowu (2005) termed as eager to learn new innovations. Of the respondents surveyed, 85% were males, whereas the females were in the minority (15%). The above findings agreed with that of Ekong (2000), Fakoya (2000) and Nwachukwu and Jibowo (2000) who noted that most farmers are below the age of 50 years. The few number of females did not imply that males were more involved in farming than the females in the area, but it is a reflection of the custom and tradition of the area which could not permit females to get involved in clubs, associations etc, activities.

Table II shows the distribution of respondents based on their major occupation and main subsidiary economic activities in the study area. About 37.5% of the total community members, representing the larger amount, partake in crop production as means of livelihood. While the majority (56.25%) adopted crop production as main subsidiary economic activity, 43.75% of the farming communities reared livestock. Apiculture, which is the farming system of interest, only accounted for 5.62% of the population as their major occupation.

The educational attainment of people plays a pivot role in their ability to acquire innovations faster. It could be observed that 68.12% of the urban and rural communities have had at least formal education ranging from adult literacy classes to tertiary education (Table III). These education levels imply that it would be a flexible society towards change.

In this regard, introducing new apicultural techniques in this area should not encounter many difficulties.

Perceptions Towards Adoption of Apiculture as an Income Source in Adamawa State.

While a larger proportion (36.25%) of the urban farming community accounted for those who perceived apiculture as a farming system that could be used just as sideline economic activity, the majority (56.25%) of the rural farming community had similar perceptions (Table IV). Respondents, who had no idea or information on apiculture, with 38.75% and 32.5% for urban and rural farming communities, respectively, followed this trend. About 11.25% of the urban farming community could only adopt apiculture as a hobby. Of the total respondents studied, only 5.62% were found to have perceived apiculture as a profitable enterprise, whereas 6.88% were of the opinion that it was not profitable. The former categories were discovered to be persons already keeping bees in the study area. The implication of the above results is that only those that keep bees know of the profitability. This could be attributed to the paucity of information regarding the modern aspect of the farming system.

Source of Information on Apiculture in the Study Area

In elucidating on the essence of information, Stanley (1990) posited that information is one of the basic human needs after air, water, food and shelter. The author invariably sees information as one of the basic necessities of life. This assertion was validated by Camble (1992) who opined that man requires information to be able to manipulate factors of production such as Land, Labour and Capital resources into meaningful and productive use.

On the same view, Joshi *et al* (2005) observed that inadequate information is one of the major causes of low adoption and production by farmers.

The extension agency has the responsibility of communicating agricultural innovations to rural communities and thereby educating farmers on better farming practices. However, Ezike and Eze (2004) were of the opinion that new technologies or innovations will be useless, unless it gets to the ultimate users safely. In an attempt to find an effective route of channeling modern methods of apicultural practices to the farming communities in the study area, the sources of information on apiculture among the farming communities are documented in Table V. These include radio, television, fellow farmers and literature. Of these sources, the larger percentage (31.87%) accounted for respondents who access information on apiculture from colleagues. Other sources accounted for 25.63%, 5.0% and 1.25% by radio, television and literature, respectively, whereas those who acquired their information through experience were 5.63%. However, 25.0% and 36.25% were urban and rural farming community members, respectively, who had no information on apicultural practices.

The result in Table V implied that farmer to farmer and radio transmission were the major means of reaching out to the larger farming communities in the state, suggesting field/farm visits and extension communication through radio as the channels that should be incorporated in any extension package to adopt in the area.

Reported Constraints to Adoption of Apiculture Among Respondents in the State.

Respondents reported the bees' stinging propensity, the rigours of climbing trees, vandalism of beehives and/or their products, and the fear of going out at night, in descending order, as the major constraints to adopting apiculture in the area. Others include the inability of respondents to provide or buy beehives, cultural factors and spiritual reasons. These constraints are shown in Table VI. It could be observed from Table (VI) that the bee stings were the foremost complaint. Only the beekeepers, representing 5.63% of the population studied, were said to have ignored this aspect, implying that all the potential beekeepers were afraid of bee stings.

It could be seen that all the constraints reported by the respondents in Table VI except cultural factors and spiritual reasons, stemmed from inadequate knowledge of new innovations in apicultural practices. For instance, the adoption of Kenya top-bar beehives placed on one-meter stands, the introduction of bee-suits, and locating apiaries just at the outskirt of villages or towns (As bees can forage up to a distance of 3-5 km) with close monitoring or supervision could solve most of the listed problems (Table VI). However, these were not forth coming because of un-organised extension packages on apiculture.

CONCLUSIONS AND POLICY IMPLICATIONS

Based on the results obtained in this study, it could be concluded that most farming community members in Adamawa State perceived apiculture as a farming system that could be adopted as a subsidiary economic activity rather than major occupation. Perhaps, the feeling was that the benefits might not be adequate to sustain their families. The major

constraint to adopting apiculture in the area is the lack of effective extension packages brought to the farming communities.

The study therefore, recommends a well-organized extension package that could discourage apiarists and the potential beekeepers from traditional practices and towards the adoption of new innovations in the apicultural business. Furthermore, effective information dissemination to the farming communities should be used. From the results presented here, radio transmission and farm visits were found to be the more appropriate way of reaching out to the larger population of farmers.

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