

ASSESSMENT OF BEEKEEPING PROBLEMS IN JADA LOCAL GOVERNMENT AREA OF ADAMAWA STATE, NIGERIA

Kwaga B.T¹, Yasa U.M², Gawaisa³ S.G & Mohammed Abdullahi⁴

*^{1,2,3}Research Scholar, Department of Forestry & Wildlife Management, Modibbo Adama University of Technology,
Yola- Nigeria*

*⁴Research Scholar, College of Forestry, Sam Higginbottom University of Agriculture, Technology & Sciences,
Prayagraj, Uttar Pradesh, India*

ABSTRACT

The study examined Honey Production Problems in Jada Local Government Area of Adamawa State, Nigeria. Three council Wards were randomly selected for the study. Structured questionnaires were administered among the respondents to elicit information on the beekeeping and the challenges. Data obtained were analyzed using descriptive statistics (frequencies Tables, percentage, and Charts). The results obtained showed that (79.17%) of the respondents were Males which shows the level of involvement in beekeeping activities and who attained the age of 40 and above (37.5%), mostly married (46.67%). Many respondents were not aware of the existence of beekeeping, where their parent (56.67%) formed a major source of information about beekeeping. The results also indicated that only a few (31.67%) of the respondents are aware of the existence of beekeeping while the majority (68.33%) are not. Results of apicultural practices in the study area showed that majority of the respondents (67.5%) do not keep beehives while few (32.5%) keep beehives. The results also showed that majority of the respondents (50%) were still using the traditional means of beekeeping (in Clay pots, Woven grass, and Tree trunks). The results as well revealed that theft (58%), forage scarcity (45.6%) and the use of chemicals (57.28%) accounted as environmental, ecological and practical problems respectively facing the apicultural sub-sector in the study area. Efforts should be geared towards creating more awareness especially through the formation of community-based organization of beekeeping in the study area.

KEYWORDS: *Beekeeping, Assessment, Awareness, Problems, Respondents*

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INTRODUCTION

The term “beekeeping” is one of the branches of agriculture and a form of animal husbandry that includes the collection and care of bee swarms, pollination of field crops by the bees and breeding of bees for their products. The main aim is to obtain the desired hive products for various needs required at different period of the season. It is a special agricultural enterprise that serves as a foreign exchange earner for some countries within and outside Africa (Beetsma *et al.*, 2001). Unfortunately, keeping as a commercial venture is still unexplored in Nigeria. This field is still at the crude stage with the exception of a few farmers and individuals trying to keep pace with the modern method (Marieke, 1993). Okonta (2011) reported that honey plays a vital role in plants production as well as horticultural production through cross-pollination. Bee products (honey, wax, pollen) are highly demanded by the household, hospitals, pharmaceutical and

cosmetic industries as a source of food, for treatment of the wound, ulcers, and a source of cosmetic ingredients (Balgunet *et al.*, 2007).

Beekeeping and honey hunting has been practiced in many countries including Nigeria for the exploration of honey. In places where the colonies of bees hive in hollow of trees and caves, honey hunting is still a common practice. Generally, beekeeping has been exercised in various systems (honey hunting, traditional beekeeping, as well as modern systems of beekeeping) (Kwaga *et al.*, 2017)

Although beekeeping has a potential to bring sustainable values/uses for beekeepers, the prevailing constraint or problems of beekeeping sub-sector are complex and to a large extent varied between agro-ecological zones where the activities are carried-out (Sasaki *et al.*, 1992; Edessa, 2005). Variation of problems of beekeeping comprises of socio-economic condition, cultural practice, climate (season of the year), behaviors of the bees and theft among others. Edessa (2005) itemized the problems of beekeeping to include; bee sting, abscondment, swarming, fire, pest, and disease. Kwaga *et al.*, (2017) revealed windstorm, pesticides, predation, harvesting and processing equipment as well as inadequate forage as some of the persisting problems of beekeeping. So far, there is lack of baseline data and a dearth of reliable information on the awareness of beekeeping in the study area, thus it is timely and relevant to evaluate and document important information on the sub-sector which has not yet been carried out in the study area (Ja'afaru *et al.*, 2006).

The level of awareness with respect to beekeeping project in the society is very important, this has not been addressed in the study area, the apicultural practices which have to do with the understanding of nature and management of the nests are very significant for successful beekeeping. However adequate beekeeping practices and their implication have not yielded reasonable result in the study area (Ijeomah *et al.*, 2011). The numerous problems (abscondment, sting, wind, pest, disease and so on) associated with beekeeping and harvests by farmers constitute a negative tendency and low interest toward beekeeping (Lazarus, 2009; Kwaga *et al.*, 2017), hence the need for this study; "Evaluate beekeeping and its associated problem in Jada local government area of Adamawa state, Nigeria".

METHODOLOGY

The study area is Jada Local Government Area of Adamawa State. It is one of the 21 Local Government Areas of Adamawa State located between Latitudes $8^{\circ} 43' N$ and $8^{\circ} 47' N$ and Longitudes $12^{\circ} 06' E$ and $12^{\circ} 12' E$ of the Greenwich meridian, with the total land mass of 2890.039km (Figure 1). It shares a local boundary with Fufore Local Government area in the North, Mayo-belwa Local Government area to the West, Ganye Local Government area to the south and also share an International boundary with the Cameroon Republic along its eastern border (Adamawa State Diary, 2007). The local Government has eleven (11) council wards namely: Jada I, Jada II, Mbulo, Mayo-kalaye, Nyibango, Danaba, Yelli, Leko, Mapeo, Koma I, and Koma II. (Adamawa State Diary, 2007).

The climate of the study area could be rated as being moderate, the rainy season usually starts from April and ends around October, and could extend to November with the annual rainfall ranging from 1200-1800mm. The dry season starts from November to March. There is a distinct drop in temperature at the onset of rains. The dry season starts from November to March. A slight increase after the cessation of rain is common. The onset of harmattan is in December and January when the temperature drops further to $21^{\circ}C$ and increase from March to May for about $39^{\circ}C$. (Adebayo and Tukur, 1999).

The type of soil dominating the area is loamy soil which is rich with nutrients for agricultural purposes. Crops cultivated consist of yam, cassava, rice, millets, soya beans, guinea corn, among others. The area falls within the guinea savannah zone of the country. The cultivation lands have shrubs and grasses while, the less disturbed areas are heavily wooded with a lot of undergrowth especially in the south and eastern part of the area (Adebayo and Tukur, 1999).

The Vegetation of the study area is Guinea Savannah type with little characteristics of Sudan Savannah. The vegetation is characterized by scattered woody tree species and grasses. Some species of trees found are *Azadirachta indica*, *Khayasenegalensis*, *Vitellariaparadoxa*, *Detariummicracarpum*, *Parkiabiglobosa*, *Prosopisafricana*, *Tamarindusindica* and *Adansoniadigitata*. Herbaceous plants includes: *Waltheriaindica*, *Tephrosialinearisis*, among others (Kwagaet *al.*, 2017).

Study Design and Data Collection

The study design involved the division of the entire area into three beekeeping sites based on the information obtained during the reconnaissance survey.

Data Collection Techniques

Structured questionnaires and participatory appraisal techniques were used in soliciting information from the respondents in the study area. 120 structured questionnaires were administered, 40 per each three (3) selected council wards (Jada I, Jada II, Mayo Kalaye). Information obtained includes awareness of beekeeping, apicultural practices as well as problems facing the beekeeping sub-sector in the study area following Keralem (2005) as well as Kwagaet *al.*, (2017) guides.

Statistical Analysis of Data

The data collected were analyzed using descriptive statistics (Tables, frequencies, means, percentages, and charts) adopting Ampitan and Okoro (2012) guide.

RESULTS

Socio-Economic Characteristics of the Respondents in the Study Area

Results of the socio-economic characteristics of the respondents are presented in Table 1. The results show that the majority of them were males (79.17%), while others were females (20.83%). The age range of the respondents reveals that most of them fall between the age of 40 years and above (37.5%), while the least (8.33%) fall between the age of 18-24 years. The Marital Status of the respondents indicates that the majority are married (46.67%) while few are widowed (10%). Most of the respondents had a big family size (48.33%) and few had a small family (11.67%). The educational level of the respondents shows that the majority had non-formal education (47.5%), while few (23.33%) had Primary School Education, 16.67% and 12.5% attended Secondary Schools and Tertiary institutions respectively. Most of the respondents are Christian (59.17) while few are Muslim (40.83%).

Awareness of Beekeeping in the Study Area

Table 2 shows the results of the levels of awareness of beekeeping in the study area. The results indicated that only a few (31.67%) of the respondents are aware of the existence of beekeeping while the majority (68.33%) are not. The results in Table 3 also reveals that (56.67%) of the respondents obtained their information from their parents, while (25%) and (18.33%) had from farmers and friends respectively.

Source of Information on Beekeeping/Honey Production

The result of the source information on beekeeping/honey production is shown in Table 4. The result indicates that the majority (56.67%) of the respondents obtained their honey/information through bee farming while (12.5%) got theirs from the market.

Apicultural Practices in the Study Area

The result of the apicultural practices in the study area is presented in Table 5. Majority of the respondents (67.5%) do not keep beehives while few (32.5%) keep hives. Table 6 shows the results of various types of beekeeping used in the study area. The results indicated that (50%) of the respondents use tree trunk while (28.12%) and (21.87%) make use of woven grass and clay pots respectively.

Respondents Interest in Apicultural Practices in the Study Area

Table 7 shows the results of the interest of the respondents in beekeeping in the study area. A majority (56.25%) of them engaged in beekeeping activities as a primary occupation, while few (28.12%) are involved in beekeeping as a secondary occupation and (15.62%) practiced beekeeping as a hobby in the study area.

Problems of Beekeeping in the Study Area

The result of environmental problems facing the apicultural sub-sector in the study area is presented in Figure 2. The results indicated that majority (58%) of the respondents rated theft as the major environmental problem, while (23%) noted windstorm as the major problem (10.8%) and (8.2%) of the respondents also rated fire and swarming respectively as their major problems. Figure 3 shows the results of the ecological problems faced by beekeepers in the study area. The results reveal that (45.6%) of the respondents rated forage scarcity as their major ecological problem, while (30.8%) confirmed predation as their major ecological problems, others observed abscondment (12.2%) and pests and diseases (11.4%) as other problems respectively.

Figure 4 shows the results of practical problems facing beekeepers in the study area. The results indicated that the majority (57.28%) reported chemicals as their major practical problem, while (25.06%) and (10.72%) complained about the lack of harvesting equipment and baiting. 6.94% of the respondents complained about the lack of processing equipment.

DISCUSSIONS

Socio-Economic Characteristics of the Respondents

The finding on the socio-economic characteristics of the respondents in the area in relation to beekeeping revealed that both sexes (male and female) actively participated in beekeeping ventured and is within the active or productive age bracket. It was discovered that married, singles, deoiced, widows all participated in beekeeping activities in one form or the other. Respondents irrespective of family size and educational background were involved. There is also a clear indication that most of the respondents who were participating in beekeeping activities in the study area were the elderly men heading one society or the other. This finding agrees with that of Marieke (1993) and Kwaga *et al.*, (2017) who reported that people of old age with disappearing ideas are the ones keeping pace with bees.

This finding could be compared with that of Sasaki *et al.*, (1992) who reveals that other problems of beekeeping are lack of trained personnel and only very few of them are found in most rural areas. It is then safe to say here that, majority of those keeping bees area rural-based.

Awareness on Beekeeping

The level of awareness with respect to beekeeping in the study area has not been encouraging. Based on the finding of this study, respondents although aware of the existence of beekeeping, majority of them obtained their information through their parents. This extends gap of improper awareness especially on the modern method of beekeeping and resulted in many of the respondents obtaining their honey from hunting, thus having no room for modern technology in beekeeping. Such practice is not healthy towards the conservation of bees and their habitat. The findings are in strong agreement with Ijeomahet *al.*, (2011) who reported that the level of awareness with respect to beekeeping project in societies have not yielded any reasonable results. The findings of this study are also not in disagreement with Beetsmaet *al.*, (2001) who reported that beekeeping as commercial ventures is still largely unexpected in Nigeria. Kwagaet *al.*, (2015) reported that beekeeping is still at its crude stage with exception of few farmers trying to keep them.

Apicultural Practices of Beekeeping

As far as beekeeping practices are a concern, from the findings of this study, majority of the respondents do not keep beehives, rather they are involved in honey hunting or buying honey from market to sale which is not reliable sources of honey. The few respondents practicing beekeeping also used a tree trunk as a hive for keeping bees in the study area such is a pure traditional method with little or no improvement. A similar observation was made by Kwagaet *al.*, (2015) who noted that this file is still at a crude stage with the exception of few farmers and individual trying to keep pace with the modern method. This is because an introduction of improved beekeeping technologies to the rural communities is beyond the buying power of the farmers and not easily available for those who can afford it (Gezahegn (2001). This would probably be a major reason why the majority of beekeeping activities is not regarded as a primary occupation but as a secondary or hobby.

Problems of Beekeeping

The prevailing problems of beekeeping sub-sector are complex and to a large extent vary between agro-ecological zones where the activities are carried out (Eddessa, 2002). The finding of the study indicated theft which rated as the most urgent problem of beekeeping in the study area as well as one of the environmental problems facing beekeeping sub-sector in the study area. This finding is similar to that of Keralen (2005) who reported that beekeepers are having a difficult summer because thieves have been stealing from beekeepers. The findings also show that forage scarcity constitutes another problem and served as one of the major ecological problems facing beekeeping. This observation also agreed with that of Keralen (2005) who observed that the burning of undergrowth and destroying of forest land for expansion of farmlands could trigger a reduction of honey-producing floras and foraging areas. From the findings of this study, the use of agricultural and other chemicals was complained by quite a reasonable number of the respondents as being their major practical problems of beekeeping in the study area. This finding is also in strong agreement with that of Sasaki *et al.*, (1992) and Keralen (2005) who reveals that the use of chemicals for crop pest and weed control brings into focus the possibility of damaging the decanted equipment in the colony as well as contamination of hives products.

CONCLUSIONS

Beekeeping plays a vital role in the lively hood of the people. Unfortunately, beekeeping as a commercial venture is still largely unexplored in the study area. The field is still at the crude stage with the exception of few farmers and individual trying to keep pace with the traditional method. The level of awareness with respect to beekeeping is very poor in the study area. Hence, farmers/beekeepers are not benefiting from the use of modern technologies in beekeeping. Some of the existing problems facing the apicultural sub-sector in the study area include; theft forage scarcity, use of chemicals, predation, and windstorm hampered the honey yield of the study area.

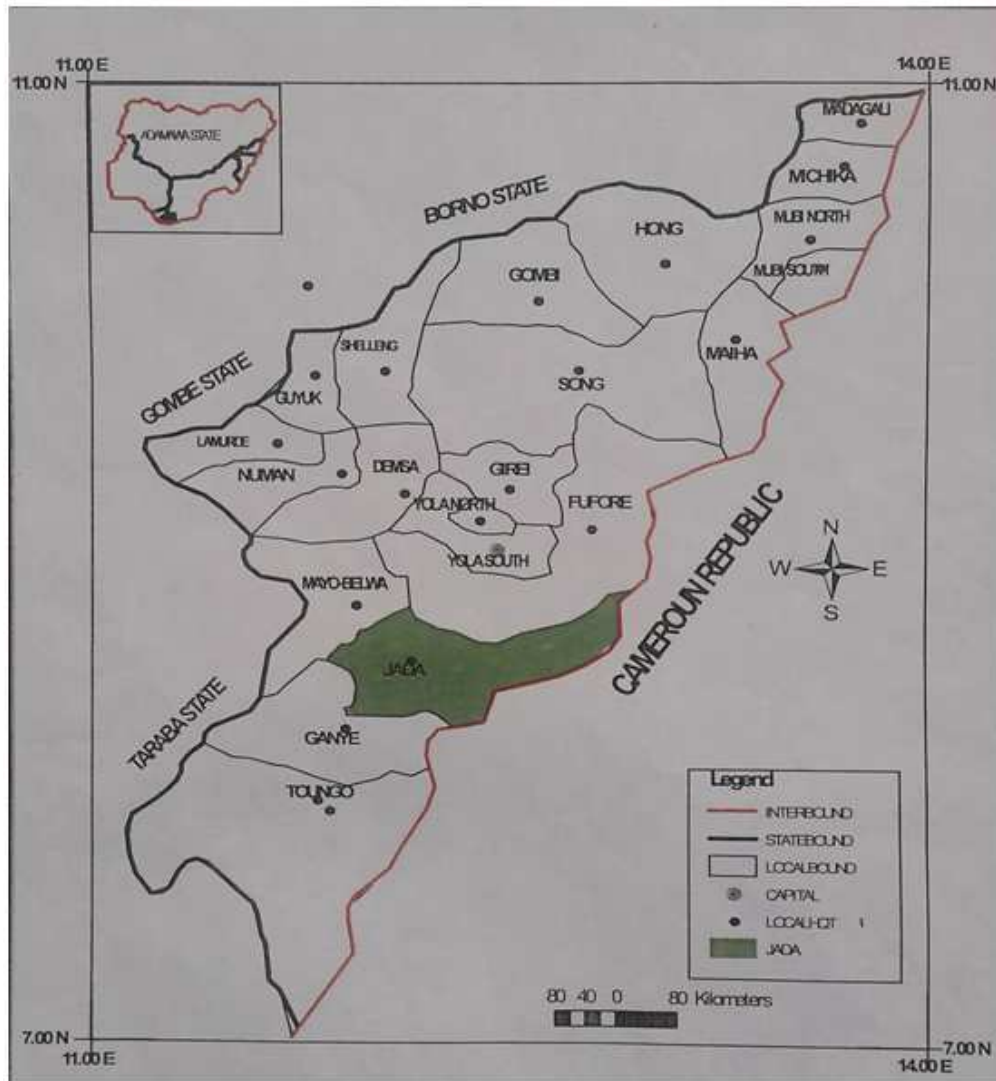


Figure 1: Map of Adamawa, Showing Jada Local Government Area

Source: Department of geography, MAUTECH, Yola, (2018)

Table 1: Socio-Economic Characteristics of the Respondents in the Study Area

Parameters	Frequency	Percentage%
Gender		
Male	95	79.17
Female	25	20.83
Total	120	100
Age Range		
18-24	10	8.33
25 – 29	18	15
30 – 34	21	17.5
35 – 39	26	21.67
40 and above	45	37.5
Total	120	100
Marital Status		
Married	56	46.67
Single	30	25
Devoiced	22	18.33
Widowed	12	10
Total	120	100
Family Size		
1 – 5	19	15.83
6 – 10	58	48.33
11 – 15	29	24.17
16 – 20	14	11.67
Total	120	100
Educational Background		
Primary	28	23.33
Secondary	20	16.67
Tertiary	15	12.5
Non-formal	57	47.5
Total	120	100
Religious		
Christian	71	59.17
Muslim	49	40.83
Total	120	100

Sources:Field Survey (2018)

Table 2: Awareness of the Existence of Beekeeping in the Study Area

Respondents	Frequency	Percentage%
Those aware	38	31.67
Those not aware	82	68.33
Total	120	100

Sources:Field Survey (2018)

Table 3: Source of Information about Beekeeping

Source	Frequency	Percentage%
Parent	68	56.67
Farmer	30	25
Friends	22	18.33
Total	120	100

Sources:Field Survey (2018)

Table 4: Source of Honey

Source	Frequency	Percentage%
Farming	37	30.83
Hunting	68	56.67
Market	15	12.5
Total	120	100

Source: Field Survey (2018)

Table 5: Keeping of Beehives

Keeping	Frequency	Percentage%
Yes	39	32.5
No	81	67.5
Total	120	100

Source: Field Survey(2018)

Table 6: Types of Beehives Used

Type of Hive	Frequency	Percentage%
Clay pot	7	21.87
Woven grass	9	28.12
Tree trunk	16	50
Total	32	100

Source: Field Survey (2018)

Table 7: Interest in Beekeeping

Interest	Frequency	Percentage%
Hobby	5	15.62
Primary occupation	18	56.25
Secondary occupation	9	28.12
Total	32	100

Source: Field Survey (2018)

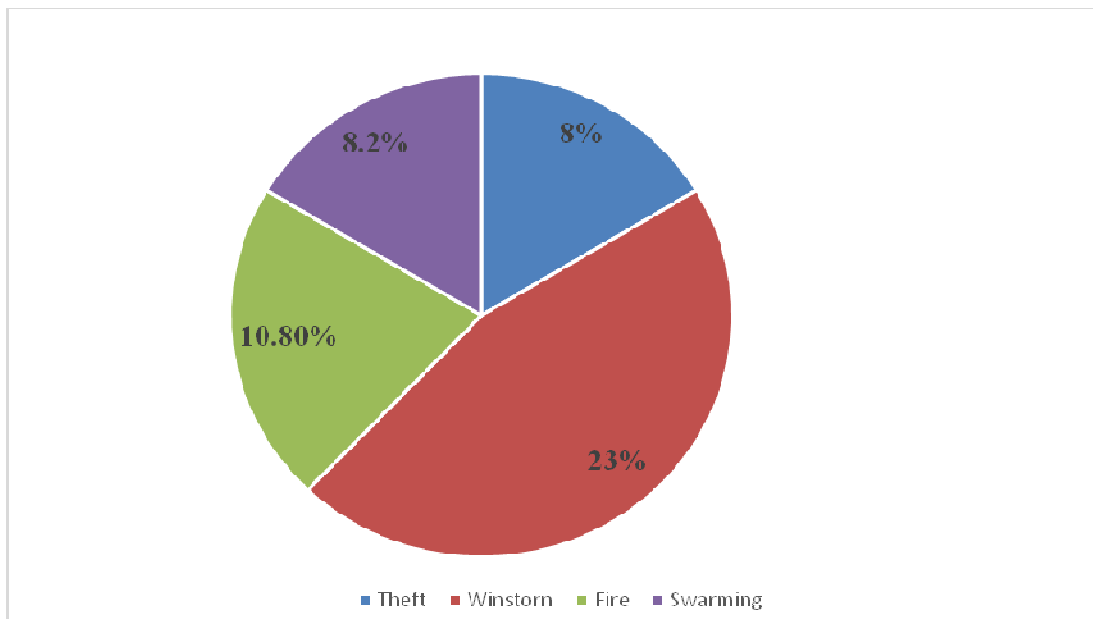


Figure 2: Environmental Problems of Beekeeping

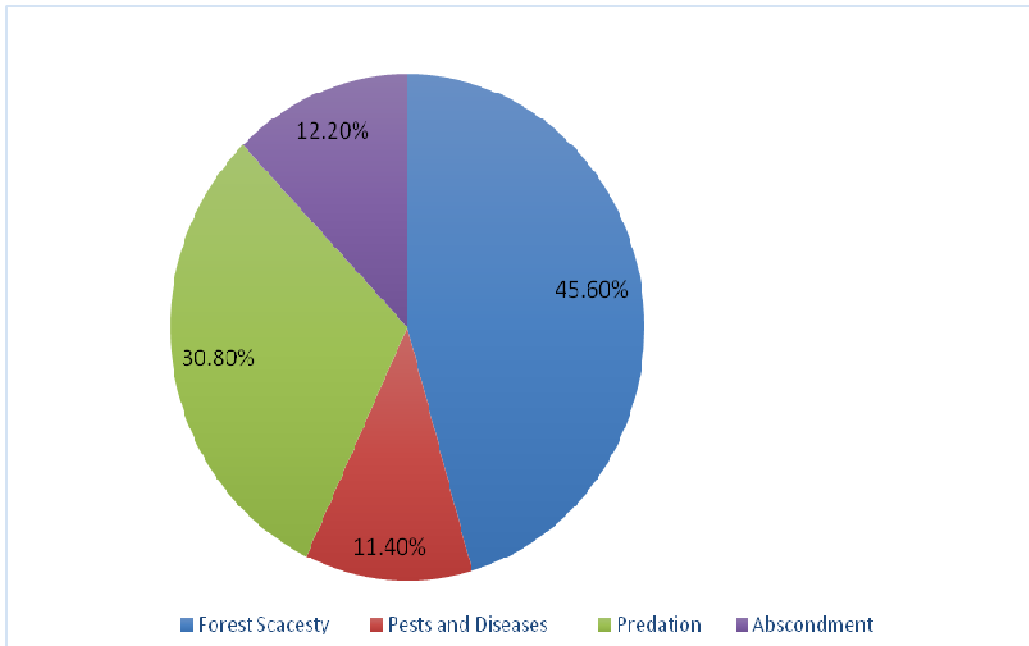


Figure 3: Ecological Problems of Beekeeping

Source: Field Survey(2018)

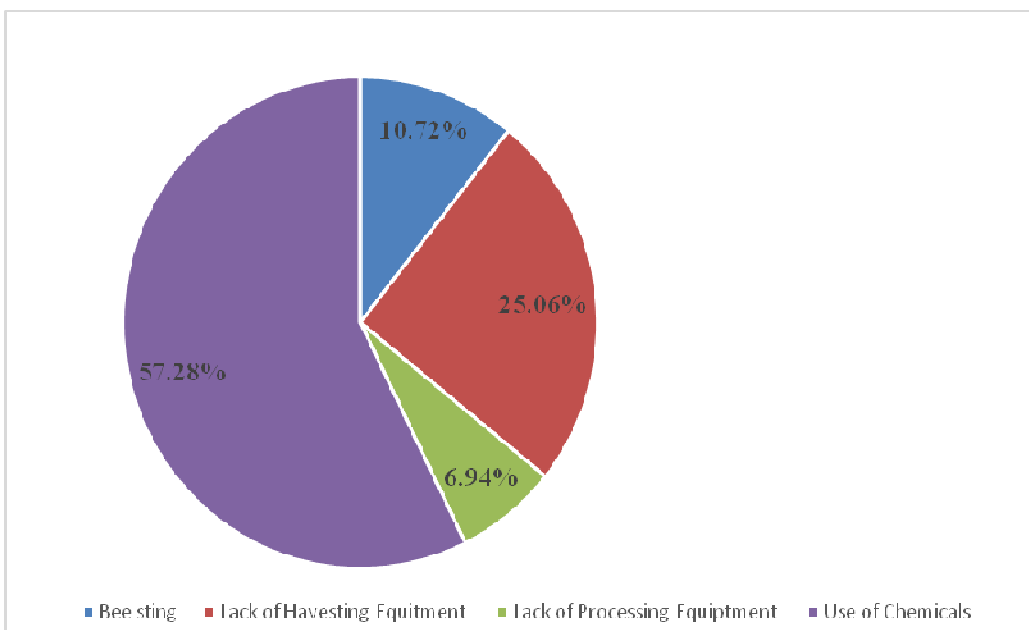


Figure 4: Practical Problems of Beekeeping in the Study Area

Source: Field Survey (2018)

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