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ENTREPRENEUR PERCEPTION AND GROWTH OF BEEKEEPING IN ABIA STATE, NIGERIA

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ABSTRACT: *The study adopted survey method with a target population of 4963 entrepreneur-farmers. The sample size of 370 was determined using Yamane (1967) formula (Eboh, 2009).Applying Bowley's proportional allocation statistical technique, the sample size for each category of respondents was estimated. The systematic linear random sampling technique was applied to select the 370 respondents. Primary and secondary sources of data were accessed. The primary data were collected through the researcher's self-designed questionnaire titled "Entrepreneur Self-Assessment Questionnaire(ESAQ)".In the questionnaire, the five point Likert Scale was used to measure the agreeableness of the entrepreneurs on the subject, where Strongly Agree(SA),Agree(A),Neutral(N), Disagree(D),Strongly Disagree(SD) denote the values, 5,4,3,2,1 respectively. In-depth interviews were held with entrepreneur-farmers. Pilot survey was conducted. The instrument was validated by experts' opinions. Using Cronbach's Alpha technique, the reliability coefficient of 0.988 was determined, reflecting high degree of internal consistency of the research instrument. One hypothesis and a research question guided the study. At 0.05 level of significance and 15 degrees of freedom, the hypothesis was tested using one way ANOVA technique and Minitab software package. The study revealed that the extent of entrepreneur perception at 89.40 percent had significant positive effects on the growth of beekeeping in Abia State of Nigeria. Recommendations were made.*

KEYWORDS: Perception, Beekeeping, Entrepreneur, Bees, Bee products, Venom and Toxin.

INTRODUCTION

Background of the Study

Perception refers to the process of selecting, organizing and interpreting information inputs to create a meaningful picture of the world (Kotler and Keller, 2009). It is necessarily subjective as an individual tends to interpret information according to his existing beliefs, attitudes and general disposition (Chisnall, 1975).Perception is the difference between the absolute truth based on facts and virtual truth shaped by popular opinion, media coverage or reputation. It is the way in which something is regarded, understood or interpreted. In the context of this study, entrepreneur perception comprises personal interpretation of the information the entrepreneur receives about beekeeping in a way that fits his preconceptions, beliefs, expectations in relation to behavior. According to Kotler and Keller (2009), perception is more important than reality as it affects the actual behavior of a person. Entrepreneurs appear to hold different perceptions about bees based on cultural diversities. Some people regard presence of bees in the environment as omen while others are scared of beestings. The popular bee product is honey. Early forms of honey harvest involved the destruction of the bee colonies. Honey hunters in remote villages crudely used smokes to suppress the bees, tore the honeycombs apart from the

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hollow trees/shrubs and squeezed them along with the eggs and larvae to extract honey. In the process they used flames of fire to kill innocent bees and destroyed their habitats. The unhygienic honey from the damaged brood nest was strained through sieves or baskets. In modern times, honeybees are encouraged to live in containers called hives for easy access to bee products. Apiculture (beekeeping) is the art of rearing honey bees for economic benefits. It has become a viable home-based and low-capital business for African entrepreneurs (Iwuoha, 2013).The bee products are used extensively in industrial manufacturing, medicine, food processing and natural healing. Royden Brown in his book 'Bee Hive Product Bible', provided insights into the properties of bee products; honey, beeswax, propolis, pollen and royal jelly. He stated that honey has bactericidal, anti-allergenic, anti-inflammatory, antioxidant and expectorant properties (Brown, 1993). Honey is used as a sweetening agent for children's drugs, treatment of sore throat, cough, hay fever, burns and as a nutritional supplement for children, athletes and people suffering from diabetes. It finds application in the production of cleansers, lotions and creams in the cosmetic industry. Beeswax is used in food processing industries as an additive and making of chewing gum, lip balm, lip gloss, hand creams, moisturizers, eye shadow, blush, eye liners, shoe and furniture polish and candles. Propolis (also known as bee glue) is used as an antibiotic and antifungal agent in the pharmaceutical industry. In natural medicine, it is used to treat inflammations, viral diseases, ulcers, skin burns and scalds. Pollen is basically food for bees. It is used in some expensive dietary supplements due to its valuable medicinal properties. Royal jelly (or bee's milk**)** is a good source of vitamin B. In China, royal jelly chocolate candy and wine, as well as lotions and tonics are marketed for natural healing. The world trade in bee products is worth millions of dollars every year and the global consumption of honey is so large that supply rarely matches demand. Africa consumes more than three times the amount of honey it produces. Countries like Ethiopia, Kenya and Tanzania produce most of the African continent's honey while demand for bee products in large markets like Nigeria and South Africa remains unsatisfied (Iwuoha, 2013). Nigeria meets her domestic demand for honey mostly by importation from producer countries (Ja'Afar-furo,2007: Ayansola,2009).Wealth creation from beekeeping is fully untapped among entrepreneurs in Nigeria, especially Abia State despite the high level of unemployment. Nigerians are yet to realize the potentials of beekeeping and its commercialization has not been appreciably exploited (Ja'Afar-furo,2007). For instance, in Abia State, only the National Root Crops Research Institute and a few entrepreneurs are practicing beekeeping. According to Oduntan (1999), the low investment rate of beekeeping in Nigeria is largely due to the dearth of research work on apicultural management and poor beekeeping awareness of the people. The government has neither initiated programs to create adequate awareness nor provided enabling environment for beekeeping to thrive. Beyond the sweet taste of honey and profitability of beekeeping are the entrepreneur perceptions of the painful beestings, superstitious beliefs and uncertainty of the investment due to bee swarming behavior, among others. The effect of these entrepreneur perceptions on beekeeping practice in Abia State of Nigeria provoked this study.

Statement of the problem

On commercial scale, beekeeping is an agricultural-forest based pollution free industry. It is the human management of honeybee colonies (hives) for the purpose of wealth creation. The practice makes bees available for sale to beekeepers. The main commercial value of honey bees is the pollination of crops. Without bees, most plants would not be able to produce fruits, ranging from almonds, tomatoes to apples that grow from flowers. Bee products have important economic and health benefits. In defense of their colonies, the worker bees sting and leave the

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stinger (ovipositor-female reproductive organ) embedded in the victim because of the stinger's barbs and flesh structure. The venom bulb that remains with the stinger in the body of the victim contains powerful toxins. Recently, scientists at the Washington University School of Medicine in St. Louis,United States of America used nanoparticles carrying toxins (melittin) found in bee venom to destroy HIV without harming the nearby cells(Hood,et al,2013).The melittin is able to poke holes in the protective coating of HIV and other viruses. The venom-laced nanoparticles could be injected into a person's blood in order to clear HIV cells from the bloodstream.These nanoparticles have proved to be effective in killing tumor cells as well. Apart from HIV and cancer, hepatitis B and C also have the same type of protective envelopes that could be destroyed with nanoparticles loaded with melittin (Hood, et al, 2013). Experience has shown that a farmer who is stung regularly by bees does not get ill most often as the bee stings cure the ailments and enhance immunity (Orakpo, 2013). Engineer Ayodele Salako (an Ibadan-based beekeeper), corroborated this report when he stated that bee sting is very medicinal and enumerated ailments that could be combated with bee venom which include headache, insomnia, osteoarthritis, fractures, inflammation, high blood pressure, skin problems, back pain, infertility in women, eye problems and old wounds that could not heal for about two-three years. The best remedy for arthritis is Bee Venon Therapy, BVT(Orakpo, 2013).A staff of Scripture Union, Nigeria, Mr. Ndubuisi Okwum, who claimed to have learnt apiculture at National Root Crops Research Institute, Umudike, Abia State also stated that bee sting can cure malaria (apipuncture).According to the reports of the Foundation for AIDS Research, over 34 million people are living with HIV/AIDS globally, 3.3million are under the age of 15 years and almost 7,000 people contract HIV around the globe daily (Krans,2013).The implication of the venom-laced nanoparticle technology is that bees could provide solutions to the world's deadly human immunodeficiency virus(HIV),cancer and other health challenges. Furthermore, the value of global trade in honey and other bee products is over $600 million every year (Iwuoha, 2013). The potentials of bee products in African markets are high. An Israeli, Ami Maimise who visited Nigeria recently revealed that bee venom alone sells for about ten thousand dollars per gram. Millions of Naira are spent yearly to import bee products, especially honey into this country. Adulterated honey is brazenly hawked in the cities to augment supplies, health hazards notwithstanding. The huge gap between Africa's consumption of bee products and available supply presents a lucrative opportunity for indigenous entrepreneurs to exploit. Beekeeping is easy to start, requires very little capital and can be run from home. In spite of the low capital requirement of beekeeping, high return on investment, remarkable medical miracles and employment generation potentials, this field of agriculture is largely untapped in Nigeria, particularly Abia State when compared to animal husbandry, fishing, palm plantation and staple crops production, among others. Perceptions of painful bee stings, sights of bee clusters (which can cause goose bumps on the skin), fear of swarming bees (apiphobia) and superstitious beliefs, ignorance coupled with apathy, appear to have beclouded the sense of economic considerations of the benefits and profitability of beekeeping among entrepreneurs. The extent to which the entrepreneur perception has affected the growth of beekeeping in Abia State therefore constitutes the core of investigation of the current study.

Objective of the study

The broad objective of the study was to examine the effect of perceptions held by entrepreneurs on the growth of beekeeping. The specific objective was to determine the extent of the effect of entrepreneur perception on the growth of beekeeping in Abia State of Nigeria.

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Research question

To what extent has entrepreneur perception affected the growth of beekeeping in Abia State?

Delimitation of the study

The study was limited to small and medium scale entrepreneur-farmers in the three senatorial zones of Abia State (North, Central and South) who are already engaged in various aspects of farming including beekeeping.

Hypothesis formulation

At 95% confidence level:

H_O: Entrepreneur perception has no significant effect on the growth of beekeeping.
H_1 Entrepreneur perception has significant effect on the growth of beekeeping.

REVIEW OF RELATED LITERATURE

Beekeeping may be over 1000 years old in Africa, particularly in the East where it was associated with witchcraft and a profession for old people (Adejare, 1991). Africa has an estimate of about ten percent of the total world's bee population with Nigeria as one of the largest reservoirs. In Nigeria, records of crude beekeeping practice was traceable to the Zuma people of Zaria in Kaduna State while modern beekeeping was initiated at the International Institute of Tropical Agriculture(IITA) farms in Osun and Oyo States. Honey bees are social insects that live together in organized and sophisticated communities called colonies or hives (figure 1). Forage sources for honey bees are important considerations for location of hives. Hives facilitate the transportation of honey bees to the farms for crop pollination. A colony accommodates about 100,000 honey bees, made up of three castes of two sexes, male and female. The queen bee (female) lays all the eggs, the workers (females) perform all the activities in the colony (i.e., cleaning, foraging, protection), while the drones (males) fertilize the virgin queen during her mating flight after which they die. The queen and drones do not sting. The worker bees sting in defense of the colony and die after the operation.Bees are aware of what goes on in their environment. They see movements, distinguish the colors of flowers through their compound eyes and communicate through vibration. Worker bees alert other bees to the direction and distance of sources of nectar and pollen by waggle dance. The intensity of the dance indicates the richness of the food source. While a vigorous dance indicates a rich source, a slower dance is a pointer to a poor source. The sense organs of hearing, smell and touch are located in the antenna and legs .They recognize comrades and enemies even in darkness through their sense of smell. Beekeeping as an aspect of economic entomology deals with exploration and manipulation of insects like honeybees for financial returns. It requires the knowledge of the psychology of bees under varying environmental conditions. Bee stinging depends on the climate and tropical bees are more aggressive than temperate honey bees.

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Figure 1. Honey bees in a colony (hive)
Source: Field survey, 2015.

Bees also tend to be aggressive when there is no nectar flow at night time and during windy days or periods of low temperatures. Stimuli that are likely to increase bee stings include dark clothes, velvet fabrics, noise, vibration, erratic movements and petrol fume odor. Enemies of bees include fire, water, noise, insects (ants) and strong winds swaying away beehives. The management of honey bees to generate sustainable incomes ought to influence the feasibility and desirability of this field of agriculture and minimize the poor perceptions of bees among entrepreneurs (Robbins, 2010).The managerial issues include the method of approaching the bees, hives, bee feeding, and prevention of predators. But studies have shown that many communities in this country still regard the presence of honeybees as taboos and eccentric attributes of gods like "amadioha deity" in Igbo land. The Tiv communities in Benue State associate bees with witchcrafts and deploy them as weapons of warfare. Amakpu Ojiagu community in Enugu State believes that witches operate with bees. In Abia State, communities like Amarchi Nsulu in Isiala Ngwa and Ukwa (Abia South), people regard bees as taboo when they cluster round homes. Bee clusters are perceived as omen showing that a terrible thing is about happening to the family or a sign of evil acts practiced by some members of the community. But when a bee hovers around the residence of a person, it signifies that a visitor is coming on the way. In Ikwuano and Ibeku communities (Abia Central), presence of bees around homes is attributed to the wrath of gods caused by the sins of the people. Sacrifices are made to appease the gods for the sins committed. If the departure of the bees does not lead to outbreak of diseases in the communities, it is assumed that the sins have been forgiven. The perception of bees in Bende communities in Abia North is that of abomination. The story of people who died after bees' sting in the past years dominated the psyche of the entire communities. The people are scared of bees 'stings. Anywhere bees are seen in the area, serious communal efforts are made to kill them to avert danger. With these beliefs, beekeeping practice in these communities becomes practically impossible. The growth of beekeeping in Abia State therefore appears to be largely undermined by entrepreneurs' preconceptions, superstition, fear of bee stings, ignorance and deserves urgent intervention of the State Government. The extent to which these entrepreneur perceptions had affected the growth of beekeeping in Abia State defined the imperative of this study.

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METHODOLOGY

The study adopted survey method with a target population of 4963 entrepreneur- farmers. The sample size was determined using Yamane (1967) formula (Eboh, 2009) i.e., $n = N/I + N(e)^2$, where, n=sample size, N=actual population, e =level of significance, I =constant. The sample size for the study was 370. Applying Bowley's proportional allocation statistical technique; nh = nNh /N, where, nh= the number of unit allocated to each category of respondents. Nh = the number of respondents in each category, n=the total sample size, N= total population, the sample size for each category of respondents was estimated. The systematic linear random sampling technique was applied to select the 370 respondents for the study. Primary and secondary sources of data were accessed.The primary data were collected through the researcher's self-designed questionnaire titled "Entrepreneur Self-Assessment Questionnaire(ESAQ)".In the questionnaire, the five point Likert Scale was used to measure the agreeableness of the entrepreneurs on the subject, where Strongly Agree(SA),Agree(A),Neutral(N), Disagree(D),Strongly Disagree(SD) denote the values;5,4,3,2,1 respectively. In-depth interviews were held with the respondents. Pilot survey was conducted. The instrument was validated by experts' opinions. Using Cronbach's Alpha technique, the reliability coefficient of 0.988 was determined, reflecting high degree of internal consistency of the research instrument (Gliem, et al, 2003).One hypothesis and a research question guided the study. At 0.05 level of significance and 15 degrees of freedom, the hypothesis was tested using one way ANOVA technique and Minitab software package.

DATA PRESENTATION AND ANALYSES.

The data derived from the study were presented in this section.

Table 4. 1: Profile of respondents.

Parameters	Total	Percentage (%)
Farmer category		
Beekeeping	15	4.0
Animal husbandry	188	50.0
Crop production	102	28.0
Mixed farming	65	18.0
Age		
18-30	28	8.0
31-40	101	27.0
41-50	93	25.0
Above 50	148	40.0
Gender		
Male		59.0
218		41.0
Female		
152		
Marital status		
		67.0
		33.0

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Married 249 121	Single	
Qualification		
Ph.D.	8	2.0
MSc/MBA	50	14.0
BSc/HND	94	25.0
ND/NCE	113	31.0
WASC/GCE /FSLC	105	28.0

Source: Field data, 2015

From Table 4.1, 50 percent of the respondents were engaged in animal husbandry (poultry, cane rats, snails, rabbits**,** fishing**,** etc),28 percent in crop production(root crops, vegetables, pineapple, oranges, palm plantation etc),18 percent mixed farming(combining some /all aspects of farming) and only a negligible 4 percent practiced beekeeping. About 52 percent of respondents were within the active years of 31 to 50, 40 percent were above 50 and only 8 percent (18 to 30 years) engaged in farming. The study involved 59 and 41 percent of male and female respondents respectively. Married respondents were 67 percent and the rest single. Of the 370 respondents, 31 percent were holders of National Certificate of Education/ National diploma, 28percent West African School Certificate/its equivalent/ First School Leaving Certificate(FSLC),25 percent Bachelor's degree/Higher diploma certificates, 14 percent Master's degree and 2 percent held Doctorate degree certificates in various fields of endeavor.

Table 4.2 Analysis of responses on the effect of entrepreneur perception on growth of beekeeping.

S/N	Number of Respondents : Agree	Scores of Respondent: Agree	Number of Respondents: Disagree	Scores of respondents: Disagree	Total number of respondents
1	180	799	190	403	370
2	174	772	196	416	370
3	186	825	184	390	370
4	141	626	229	486	370
5	166	736	204	433	370
6	167	741	203	431	370
7	157	697	213	452	370
8	150	666	220	467	370
Total	165	**5856**	1640	**3480**	2960
Mean	1320	732	205	435	370

Source: Field data, 2015.

In Table 4.2 the scores of responses, 5856, representing 63 percent of the respondents' opinions, indicated that entrepreneur perception had significant effect on the growth of beekeeping. The scores, 3480, representing 37 percent of the respondents' responses expressed that entrepreneur perception had no significant effects on the growth of beekeeping.

Table 4.3 Test of hypothesis.

Welcome to Minitab: One-way ANOVA: AGREE, DISAGREE 9/19/2015 8:41:32

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Source	DF	SS	MS	F	P
Factor	1	355216	355216	127.54	0.000
Error	14	38991	2785		
Total	15	394207			

S = 52.77 R-Sq = 90.11% R-Sq (adj) = 89.40%

Table 4.3 showed that the F-critical (4.60) was less than F-computed (127.54) at 0.05 level of significance and 15 degrees of freedom. The null hypothesis was rejected. The p-value gave additional insight into the strength of the decision. Assuming the null hypothesis was true, p-value would have reported the probability of getting a value of the test statistic, at least as extreme as the value actually obtained. The procedure involved a comparison of the p-value with significance level. The p-value, (0.00), was less than the significance level of 0.05, (i.e. $p<0.05$).This procedure confirmed the rejection of the null hypothesis. The coefficient of determination, R^2, was 89.40 percent. The alternate hypothesis was upheld with the conclusion that the entrepreneur perception had significant positive effects (89.40 percent) on the growth of beekeeping.

DISCUSSION OF FINDINGS

The findings of the study revealed that the entrepreneur perception had significant positive effects (89.40 percent) on the growth of beekeeping in Abia State of Nigeria. This implied that negative perceptions held by entrepreneur- farmers accounted for about 89.40 percent limitations on the growth of beekeeping in the State. Invariably positive perceptions of entrepreneur-farmers only contributed to about 10.60 percent of the beekeeping practice. In view of the current economic conditions and high unemployment rate in Nigeria and Abia State in particular, this situation is rather deplorable. Oduntan (1999) opined that the low investment rate of beekeeping in Nigeria is largely due to the dearth of research work on apicultural management and poor beekeeping awareness of the people. The Managing Director of "Thy Consulting", Mr. Ismail Abdul Azeez (an apiculturist), stated that people have not realized the importance of beekeeping, not just for honey production but for the pollination contracts it offers. With adequate training on apicultural management, perceptions arising from fear of beestings, cluster of bees, superstitious beliefs and ignorance would be erased over time. The economic benefits would surely have an overwhelming influence on perceptions as more entrepreneurs are educated on bee psychology, reducing the inbuilt fear in people toward beekeeping practice. According to an Abakaliki-based apiculturist, Mr. Frank Orji, the first step to beekeeping is to erase the fear of bees' stings which painted the venture as dangerous. In view of the therapeutic effects of bee venom, bees' stings should rather not be feared but desired. Beside the entrepreneur perceptions however, there are other contending issues hindering the growth of beekeeping in Nigeria. The Head of the Apiculture Unit of the National Root Crops Research Institute (NRCRI), Umudike, Abia State, Mr. Victor Obi, lamented on the serious challenges of the beekeeping industry. The industry is servicing markets not characterized by regulations on a number of issues. Pure honey does not seem to be on the watch list of the National Food and Drugs Administration and Control (NAFDAC). The Agency has not carried out intense scrutiny of honey sold in the Nigerian markets. Across the country, honey laundering is on the increase as Nigerians freely buy unlabeled blend, adulterated with cheap sweeteners, posing great risk to public health. Staring on our faces is the challenge of keeping adulterated honey from reaching the markets. Because the industry cannot define what pure honey is, no merchant can be prosecuted for adulteration of honey.

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According to Mr. Obi, millions of Naira are not earned from cropping honey alone but from packaging colonies of bees sold to plantation farmers for insect pollination of their crops to enhance bumper harvest and development of fruits and seeds. The apiculturist called for the enforcement of standards to save the industry. Bee products have much to offer in supporting life expectancies of Nigerians. With government interventions and adequate public enlightenment campaigns, the huge prospects in the beekeeping business would likely change the negative perceptions of the entrepreneurs. The efforts of the Governments of Oyo, Osun, Kogi and Ondo States at promoting beekeeping awareness to harness its great potentials in crop pollination and contribution to Gross Domestic Product (GDP) of the nation's economy are noteworthy. The Government of Oyo State and the Institute of Agricultural Research and Training(IART) in collaboration with the Israeli Embassy put together programs aimed at training beekeepers on modern techniques of beekeeping(Ayansola,2013).The State's Ministry of Agriculture set up apiaries(bee farms) at Agodi Garden and Rural Community Development Centre,Awe. This has contributed greatly to the growth of beekeeping in Oyo State. Beekeeping is now a source of self-employment program in Osun State. New bee farms are being created and more than six hundred people have been employed for training as professional beekeepers. Kogi State Government is establishing one hundred and five modern apiaries in all the twenty one Local Government Areas of the State in order to reduce the rate of unemployment and poverty among the rural people in the State. Ondo State Government has identified beekeeping as a viable agricultural project that could alleviate poverty and improve the standard of living of the rural people, reduce unemployment among the youth, women and the physically challenged. It has put in place intensive enlightenment program to educate the people and create awareness on the benefits of beekeeping practice. The Government of Abia State needs to embrace the trend of beekeeping awareness in the country to harness the untapped resources of this neglected rich field of agriculture.

Implications of the study

The unveiling of the mysteries and huge potentials of beekeeping would create a paradigm shift in entrepreneur-farmers' perceptions, erase fears (apiphobia) and stimulate wide spread adoption of beekeeping practice in Nigeria, particularly Abia State.

CONCLUSION

One of the Israeli apiculturists, Mr. David Gertial, who visited this country recently, stated that Nigeria has the most ideal conditions for beekeeping either as a hobby or as a commercial venture. His reasons are based on the abundant flowers, fantastic weather, two high seasons and the absence of every known malady of beekeeping in Nigeria. But poor entrepreneur perception of bees as dangerous and mysterious insects has hindered the growth of beekeeping in Nigeria, particularly Abia State. A paradigm shift in the perception of entrepreneur- farmers is urgently needed through creation of intensive beekeeping awareness. Beekeeping improves the economic conditions of farmers, restricts the migration of rural youths to urban areas and helps in holistic development of the rural society. The perceptions associated with fear of beestings, superstition, bee swarming and ignorance, culminating into farmers 'apathy about beekeeping may change as more information becomes available to entrepreneurs. For centuries, honey bees have served human demand for products like honey, beeswax, royal jelly, propolis and pollination of flowering plants. Bees as pollinators strongly influence ecological relationship, ecosystem conservation and stability, genetic variation in plant community, floral

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diversity, specialization and evolution (Mitchell, et al, 2009). This demand continues today and has grown larger in size. Diversification in agriculture through beekeeping provides food, nutritional, medicinal and socio-economic upliftment of the rural people on sustainable basis. Beekeeping is easy to start, requires very little capital compared to other agricultural projects and can be run from home. Bees do not require feeding as they provide their own food all year round. Individuals, churches, women groups, youth associations and cooperative societies can set up bee farms with small amount of money and tap the potentials of beekeeping.

RECOMMENDATIONS

1. Government's support for beekeeping should include training, funding, public enlightenment and establishment of agricultural extension services/technological package to guide farmers understand bee psychology.
2. Beekeepers should develop stronger associations and networks to commence bee-starter training programs to teach people how to start beekeeping and change their mentality.
3. Beekeepers' Cooperative groups should be formed to coordinate sales of bees' services for pollination & bee products, offer assistance/credit facilities for expansion and lobby government to enact enabling laws to halt cruelty to bees.
4. Non- Governmental Organizations to champion the course of beekeeping awareness creation and incentives to tap into the youth empowerment potentials of beekeeping. They should collaborate with Beekeeping Extension Society to take beekeeping to the grassroots as part of poverty alleviation.
5. Mass media should aim at educating the public on beekeeping innovations/technologies, using audio-visuals, aids, print materials, TV/radio programs as to reduce entrepreneur-farmers' apathy.
6. National Agency for Food and Drugs Administration and Control (NAFDAC) should maintain strict scrutiny of honey blends sold in Nigerian markets in the interest of public health.

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