

*Nyuki ni Hazina*  
*(Beekeeping is Treasury)*

**INSTITUTIONALIZING BEEKEEPING CAMPS IN PROTECTED AREAS  
FOR CONSERVATION AND DEVELOPMENT – A CASE STUDY IN  
NYAHUA MBUGA FOREST RESERVE IN TANZANIA**

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**Scientific Commission on Beekeeping for Rural Development**

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Ukraine - Scientific Commission on Beekeeping for Rural Development**

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## **Abstract**

*The livelihoods of the majority of the country's citizens living in rural areas are closely tied to natural resource uses. Beekeeping is an environmental friendly and income generated activity that can improve the livelihood of rural beekeepers. Local communities have been set informal camps inside the forest areas far from homesteads for carrying out beekeeping. The problem underlying beekeepers is that: Production of honey is based on raw product, no mechanism for adding value such as packaging and packing; Do not have adequate capital to process honey in bulk as to meet market requirements; Most of them sell the honey individually by relying on who come is the right buyer and the earning is subsistence to solve immediately requirements; Do not have strong legal instrument (association) that can stand on their behalf and negotiate with nearby authority and are encountered series of challenges in the sense that there are other actors in same areas who sometime become more important or influential e.g. tourist hunting.*

*Randomized survey and interviews methods were applied. Nyahua Mbuga Forest Reserve lies between longitude 33° 01" and 34° 15" East and Latitude 5° 30" and 6° 10" South. The forest has an area of 672,000 ha with a boundary length of 352.5 km surrounded by thirteen villages of Sikonge and Uyui Districts in Tabora Region in Tanzania.*

*Beekeeping is practiced by traditional beekeepers as individuals or groups. These traditional beekeepers have skills to identify potential beekeeping sites in the forest reserve. Other economic activities include pit sawing, mushroom and handcraft materials collection, hunting and grazing. Vegetation cover is open miombo woodland dominated by Julbernadia globiflora, Pterycarpus angolences, Afzelia guanzensis and Brachystegia species and long grasses. Records shown a total of 1,087 beekeepers were owned about 2,536 top bar hives beehives, 33,300 log hives and 13,587 bark hives. In the past three years 2010 -2012, the study area produced a total of 249,172 kilograms of honey and 12,101 kilograms of beeswax.*

*Discussion areas include capacity building; effective value chain; Cost benefit analysis of the hives in use; institutional arrangement; conservation and participation of beekeepers.*

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# **1. INTRODUCTION**

## **1.1 General Introduction**

The livelihoods of the majority of the country's citizens living in rural areas are closely tied to natural resource uses. Beekeeping is an environmental friendly and income generated activity that can improve the livelihood of rural beekeepers. The most important beekeeping areas in Tanzania are found in miombo woodlands. The miombo woodlands constitute 20m hectares of the total forest areas, which cover 48 million hectares in Tanzania.

Local communities have been set informal camps far from homesteads for carrying out beekeeping. The beekeeping camps are found most in miombo woodlands and majority in protected areas. These areas are potential also for wild animals ranging from big fives except rhinos to medium animals, reptiles (particularly dangerous snake the black mamba) and birds (interested the indicator bird). Due to this richness in miombo woodlands, different types of protected areas: forest reserves, game reserves, bee reserves and national parks have been established in the area that since ancient time beekeeping practices were carried out.

Beekeepers have tendency of detaching their homes and established temporary sites in the forest during hive siting and harvesting periods. These temporary sites are termed as beekeeping camps. The management of these camps is informal depending on the number of beekeepers who organized themselves in a particular site. These areas are potential for collection of natural honey and beeswax that are free from pollution and have natural flavours of the flowers in bloom.

Nyahua Mbuga Forest Reserve is among the reserves under administration of Tanzania Forest Services (TFS) Agency. The features in terms of resources in this forest resemble other types of protected areas in miombo woodlands that include game reserves. Beekeepers are allowed to carry out beekeeping activities as well as collection of firewood, medicinal and wild fruits. The forest is also useful for timber logging.

## **1.2 Problem Statement**

Beekeepers utilizing miombo woodlands tends to travel far from their homes in order to keep bees in designated areas with plenty resources for bees and free from other land use activities and pesticides application. Most of these areas have been gazetted as protected areas for the purpose of maintaining ecosystem stability, conservation of wild animal and catchment for water.

The problem underlying beekeepers in protected areas are associated with seasonality, timing harvesting period and permits to use resources in specific administered protected area. In these areas, production of honey is based on raw products that no mechanism for adding value such as packaging and packing. The beekeepers do not have adequate capital to process themselves honey that meet market requirements. Most of them sell bee products individually by relying on who come are the right buyers and the earning is subsistence to solve immediately necessities. Do not have strong legal instrument (registered association) that can stand on their behalf and negotiate with nearby authorities regarding the use of resources in the area.

They encountered also with series of challenges in the sense that there are other actors (i.e. tourist hunting blocks, forest dealers, professionals and “*poachers*”) in same areas who sometime become more important or influential. The hives are subjected to forest/wild fires, pests and vandalism.

The beekeepers have adequate indigenous knowledge of keeping bees in the area with dangerous animals and snakes. There are little or no records that show appreciations of efforts of beekeepers linking management approaches for conservation and development.

## **1.3 Study Objectives**

### ***1.3.1 Main Objective***

To assess institutional set up of beekeeping camps and beekeepers in protected areas for conservation and development



### ***1.3.2 Specific Objectives***

The specific objectives are

- i) To examine bee resources and activities of beekeepers in Nyahua Mbuga Forest Reserves
- ii) To establish acceptable practices and institutional arrangements for beekeeping linking conservation in protected areas.

## 2. MATERIALS AND METHODS

### 2.1 Study Area

Nyahua Mbuga Forest Reserve is one of the protected forest reserves in Tanzania. It lies between longitude 33° 01” and 34° 15” East and Latitude 5° 30” and 6° 10” South. The forest reserve is about 48 km from Sikonge town and 128 km from Tabora Municipality, western of Tanzania.

Nyahua Mbuga Forest was gazetted through Government Notice (GN) No. 79 of 26.03.1954 and has an area of 672,000 ha with a boundary length of 352.5 km. The forest has seasonal swampy areas known as “mbuga”. The daily mean temperature varies between 22°C to 30°C and the mean annual rainfall is estimated to 952mm. Fourteen villages are surrounding the forest of which eight villages are in Sikonge District, five villages in Uyui District and one village in Manyoni District. The forest is also bordering Chona Forest reserve in the north, Chona River in the west and Itulu Hill Forest Reserve and Nkwazi River in the south.

The forest reserve has existing management plan approved in 2011 with 27 beekeeping sites. Nyahua Mbuga Forest Reserve is under the management of Tanzania Forest Services (TFS) Agency in collaboration with District Councils that border the forest.

The forest reserve is potential due to its high values of biodiversity and catchments. Vegetation cover is open miombo woodland dominated by *Julbernardia globiflora*, *Brachystegia speciformis*, *Azelia quanzensis* and *Combretum spp.* Other common tree species include *Terminalia indica*, *Pericopsis angolensis*, *Swartzia madagascariensis* and long grasses.

The famous feature present in Nyahua mbuga is the extended flat rock known as “Daraja la Mungu” literally meaning “God’s bridge”. Nkwazi River crosses over the rock in flat range in the forest and is a gathering place for wild animals during dry season for drinking and grazing. During colonial era, it is believed that tribal soldiers used to hide themselves within the rocks, which are found in the forest reserve. The slave’s route from Mpanda – Tabora – Manyoni that was used by Slave Traders was also passing through the forest reserve.

## **2.2 Methods**

Randomized survey and interviews methods were applied in data collection. Areas with more beekeeping activities and along natural springs in Nyahua Mbuga Forest Reserve were given priorities during data collection. Beekeepers, forest staff, adjacent village governments and other forest users were interviewed. Some useful information were collected directly on the ground (field observation) within the forest and desk/office review.

Data were analysed using excel sheets and statistical methods; hard stories from beekeepers were direct recorded as result information of this study.

### 3. RESULTS

This section provides the results of the study based on the data collected and analysed including some of information that reported direct as “hard stories” from the respondents (beekeepers) based on their experience and actual situation on the ground.

#### 3.1 Bee Resources and Activities of Beekeepers

##### 3.1.1 Flowering Plants

The forest management operations that were carried out in Nyahua Mbuga Forest Reserve include boundary clearing, forest patrols, evictions, installation of signboards, logging and awareness by involving local communities. The forest reserve has dominant tree species for beekeeping, biodiversity and catchments.

**Table 1: Tree Species for Beekeeping in Nyahua Mbuga Forest Reserve**

Vernacular language	Botanical Name	Period of flowering	Uses
Mtundu	<i>Brachystegia speciformis</i>	October to December	Bee forage, log, shade, bark
Muyombo	<i>Brachystegia boemii</i>	March to May	Bee forage, logs, shade
Muba	<i>Julbernardia globiflora</i>	March to May	Bee forage, logs, shade, bark
Kasanda	<i>Swartzia madagascariensis</i>	March to May	Bee forage, logs, shade
Mbanga	<i>Pericopsis angolensis</i>	October to December	Bee forage, logs, shade, bark
Mkola	<i>Azelia quanzensis</i>	February to May	Bee forage, logs, shade
Mkwaju	<i>Terminalia indica</i>	March to May	Bee forage, wild fruits
Mninga	<i>Pterocarpus angolensis</i>	October to December	Bee forage, logs, bark

### 3.1.2 Bee Colonies

Bee colonies (un managed) were found clustered on tree branches and in cavities. Hives were hanged on trees branches scattered in a radius of 250 metres. Hive occupancy ratio was 15:5 per each 20 hives visited within a range of one square km. Stingless bees colonies were found in tree cavities and beekeepers do cut the area to obtain colony and kept at homestead.

### 3.1.3 Hives in Use and Bee Products

A total of 27 beekeeping sites (temporary beekeeping camps) have been recognised inside the forest. Records shown that beekeepers were owned 2,536 top bar hives, 33,300 log hives and 13,587 bark hives. Women were owned 15.24% of bark hives, 5.88% of log hives and 20.50 of top hives kept in the forest area. Average production of honey and beeswax in the area was 249,172 kg and 12,101kg, respectively.

**Table 2: Hive Distribution in Nyahua Mbuga Forest Reserve**

Type	Ownership		Total
	Male	Female	
Bark hives	11,517	2,070	13,587
Log hives	31,342	1,958	33,300
Top Bar hives	2,016	520	2,536
<b>Total</b>			<b>49,423</b>

**Table 3: Type of Hive in Use and Average Production**

Type of Hive	Costs	Average Production		Earnings (in TZS)	
		Honey	Bees wax	Honey	Bees wax
Bark Hives	5,000.00	7.00	1.00	35,000.00	7,000.00
Log Hives	15,000.00	10.00	3.00	50,000.00	21,000.00
Tanzania Top Bar Hive	65,000.00	12.00	2.00	60,000.00	14,000.00

**Frame Hives	100,000.00	10.00	0.00	50,000.00	0.00
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\*\* Not in use especially in Nyahua Mbuga Forest Reserve.

**Table 4: Production of Honey and Beeswax in Nyahua Forest Reserve**

Year	Honey (in Kg)	Beeswax (in Kg)
2010	294,371	16,230
2011	256,425	10,451
2012	196,720	9,622

### *3.1.4 Activities of Beekeepers*

Field observations recognized that beekeepers were utilized camps in the forests during siting hives and harvesting period. The camps were constructed using forest resources (poles, withers and grasses). Handling bees and harvesting were activities that consumed most of their time.

**Table 5: Activities of Beekeepers in Nyahua Mbuga Forest Reserve**

Activity	Where	Frequency	Percentage of involvement
Making hives using forest resources	Inside the forest	25	32.5
Obtaining boxes hives	Outside by ordering	5	6.5
Building and maintaining beekeeping camps	Inside the forest	15	19.5
Handling bee colonies	Inside the forest	32	41.6
Harvesting bee products	Inside the forest	28	36.4
Storage of bee products	Inside the forest and at home	15	19.5
Sell of bee products	Inside the forest and at home	10	13

## **3.2 Acceptable Practices and Institutional Arrangements**

### ***3.2.1 Indigenous Knowledge and Its Application***

Beekeepers in Nyahua Mbuga Forest Reserve observed to apply indigenous knowledge in several activities pertaining handling of bees, site selection and how to overcome dangerous animals. The following were some of the knowledge observed.

- i) Site selection and setting beekeeping camp were in areas with abundantly flowering tree species, availability of water and not subjected to tsetse fly.
- ii) Hives (log and bark hives) constructed in such a way that it cannot allow water to penetrate in the hive as a means of protecting from decaying.
- iii) Hives hanged on trees and tied by rope or wire to protect from predators – honey badger.
- iv) Escaping wild animals (elephants, lions and buffalos) and snakes in the field
- v) Uses of benign grasses as smoke materials, also for straining honey and rendering beeswax.

### ***3.2.2 Bee Products Diversification***

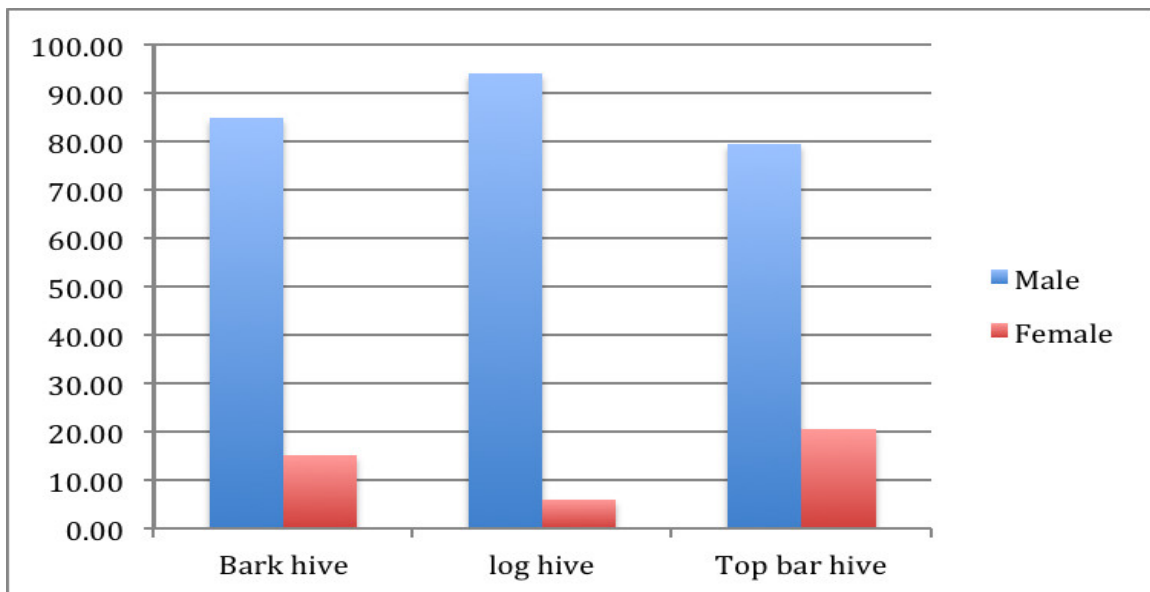
Production of bee products in Nyahua Mbuga Forest reserves was mainly honey and beeswax. 64% of honey produced by beekeepers was sold as strained honey, 25% as crude honey and 11% as raw honey used for making beer. Beeswax was rendered using *Tanganyika Method* and moulded in round form resembling a bucket or bowl applied. The weight of beeswax rendered was ranged between 2.5 to 12kg per one unit.

Sale of honey and beeswax was carried in the field and at home, sometime shade prices were applied. The sale of honey was in bulk: 20 litres container at TZS 80,000/= in the field, TZS 100,000/= at household and TZS 110,000/= at district town gate. Beeswax was ranging at TZS 7,500 – 9,200/= per kg.

### 3.2.3 Beekeepers Organization

A total of 1,087 beekeepers (female 134 and male 953) were found to utilize bee resources in the forest. This figure was excluding unrecorded individuals who are not in groups but site hives outside recognized beekeeping camps. Number of beekeeping groups identified was 12 and one beekeeping cooperative union with 352 members.

Beekeeping sites were established as far as 50km to 120 km from the villages. Distance from one camp to another was ranging from 2.5 to 6.7 km. Unit size of beekeepers in one camp varies at an average of 2, 4, 7 individuals but not exceeding 10 beekeepers. A beekeeper was required 4 to 7 assistants to accompany during harvesting period and 2 -4 assistants during hive siting time. In the field, beekeepers utilize 4 weeks during harvest and 3 weeks during hive siting. Women were not stay over nights in the camps but they hired youth to assist to carry out beekeeping operations.



**Figure 1: Percentage of Hives Ownership by Gender**

### 3.2.4 Regulatory Framework of Beekeepers in the Forest

Tanzania Forest Services Agency and District Councils have been providing permits to persons who utilize resources in the forest. The license to fell is



provided to individuals and companies that have registered as forest dealers. Beekeepers were getting permits to enter in the forest from the Village Government and District Council through Village Government.

- 1<sup>st</sup> June to 31<sup>st</sup> August: major harvesting of bee products and hive making
- 1<sup>st</sup> October to 31<sup>st</sup> December: inspection and minor harvesting of bee products
- 1<sup>st</sup> January to 31<sup>st</sup> May: Not entry – the forest is closed for any user (beekeepers and Loggers) - rain season and forest regeneration. Beekeepers may get special permits for two weeks only for inspection of hives. The permit allows only a beekeeper not with assistants.
- 1<sup>st</sup> September to 30<sup>th</sup> November: for making, biting and hanging beehives.

**Figure 2: Duration of Permit for Beekeepers to enter in the Forest Reserve**

Forest and Game Officers do patrols to evict people doing unlawful activities. Unlawful activities include poaching animals, encroachment, illegal logging and grazing herds.

### 3.2.5 Value Chain and Traceability

Activities of beekeepers in beekeeping camps were related to the construction of hives, siting hives (biting and hanging), inspection and re-siting and harvesting honey and beeswax. The result showed a significant difference for a beekeeper to priorities activities within the time given to stay in the forest.

**Table 6: Shifting of beekeeping functions**

<b>Informal Activities/Functions</b>	<b>Reasons/facts</b>	<b>Formal Functions</b>	<b>Reasons/Facts</b>
Site selection for beekeeping camps and hives siting	Inherited knowledge from ancient or back to areas before formation of villages	Improving beekeeping camps	Conservation of bees and forage, Control illegal activities
Frequency of forest fires, un proper burning of forest	Control of tsetse flies and dangerous animals and snakes.	Application of early and late burning.	Improve honey flow period, Protection of bee colonies
Removal of bee	Use of bicycles and	Introducing	Adoption of

products in time inside the forest	man-running wheelbarrows	incentives scheme to beekeepers camps	appropriate technology
Identification of tree species to hang hives in long trees	Knowledge tropical bees that tend to swarm subject to environmental condition	Mapping bee resources and develop beekeeping calendar	Increase production and manage and proper harvest of bee products.
Production of crude and semi processed honey and rendering beeswax in the site	No choice because the sites are far from home	Provision of improved facilities suitable in the area	Improve quality of product diversity.
Sharing costs of stay and work in the field	Trustful among members of the group or society	Improved connections and organization in the field	Support beekeepers and improve financial means.

## 4. DISCUSSION

### 4.1 Capacity Building

Beekeepers in miombo woodlands have skills to identify potential beekeeping sites in the forests where they keep (hang) their hives. Miombo woodlands are characterized by prolonged dry season and shortage of rainfall. Beekeeping camps were allocated in areas with adequate flowering plants, less predators and availability of water.

Hive occupancy is subjective to seasonality and disturbances of pests, animals and bush fires. The swarming of bee colonies is regulated by flowering period of tree species in the area. Some trees are flowering in high rain season (*masika*) and other in low rain season (*vuli*). Population of bee colonies ranging from medium to high-density colonies that are sometime crowded outside the hive (especially log and bark hives).

It is a tedious job to maintain beekeeping camps as being reconstructed in each season. They are destroyed by fires, poachers and sometimes loggers who using the same sites in the absence of beekeepers. The records showed cases of bush/forest fires that affect hives and production of honey and beeswax. Forest fires occurrence is high on August and October and low in July. Awareness raising that incorporates indigenous knowledge and technical knowledge on forest fire management, behaviour of animals and biodiversity is recommended to beekeepers.

Establishing beekeeping camps in the forest act as complementary of bee resources to beekeepers. Outside forest reserves and other protected areas in Tanzania there are multiple land use activities that include crop farming, pastoralism and mining. The beekeepers in miombo woodlands have been experienced challenges in handling bees in areas with a combination of activities (MNRT: 1998, 2001). In protected areas, beekeepers are free from pesticide application, colonies are less disturbed by grazing animals and incidence of rampant forest fire is minimum.

Lack of appropriate facilities for harvesting and processing bee products are the major challenges in the beekeeping camps inside the forests. Improved facilities

cannot set in areas that are insecure and not well structured. Multiple approaches that combine efforts of beekeepers and managers may results into change of functions to improve beekeeping in these areas.

#### **4.2 Effective Value Chain**

Beekeepers in Nyahua Mbuga Forest Reserves are utilizing the forest during siting hives and harvesting periods. The duration of the permit to enter in the forest is for 3 months and for special cases in two weeks. Beekeepers are not doing intensive beekeeping but extensive apiary management that hives are hanged on the trees. They also perform other activities not in the forest but simultaneous with beekeeping such crop farming, grazing and petty trade (FBD, 2007). In recent years, beekeepers are complaining and or reporting that there is low production of honey; hive occupancy is very low (not all hive sited were occupied): number of pests observed in the hive was rapid increased and changes of the harvesting time instead of June – August now is May – July. The report from beekeepers interviewed also revealed that there was a prolonged dry season that affects also swarming of bee colonies.

A vertical integration value chain that encompass research based information and functional activities from production to the folk and support pro-poor people in the field is vital within agribusiness sector (Vermeulen et el, 2008). Beekeeping in protected areas contributes to add value for biodiversity conservation and livelihood improvement. The production of honey is free from pesticide application and products are natural. However, average production of hive is low to help beekeepers' economically. Measures to improve situation of beekeepers may practise and integrate indigenous knowledge that promote sustainable use of resources in protected areas.

#### **4.3 Cost Benefit Analysis of the Hives in Use**

Beekeepers used to collect logs left by lumbers, which are much interested with steak stem. Use of bark hives were in decreasing rate due to on going campaign of abandons them. Use of top bar hives is promoted but in area that are secured and not subjected to forest fires.

Log hives are easily to make and manage compare with log hives that are expensive. Bark hives are decreasing in number as beekeepers are shifting to top bar hives although majority are still using log hives. The use of log hives in the forest is characterized with many factors amongst the most is availability of logs left by Lumbers who have utilized the steak part. Some tree species have tendency to dry at a certain age. Beekeepers collect the part of log and construct log hive at a local cost level. Bee colonies are swarming during September – October and February – March from one area to the other of the Nyahua Forest Reserve. (Kihwele et el, 2002). Beekeepers are using these natural opportunities to locate hives in areas or routine routes for the bee swarms.

Local available hives (log and bark hives) constitute 99% of the total hives in Tanzania (URT, 1998). Beekeepers are preferred to use log and bark hives because are easily to make and cheap. Frame hives are expensive, demand intensive management and sited in areas that are secured and not subjective to forest fires (MNRT, 1998, Bradbear 2009). The cost of obtaining frame hives to compare with the cost of handling bee colonies, production per colony/hive is more than cost of making and managing log hives that have been made using local available resources within the forest.

#### **4.4 Institutional Arrangement**

The beekeepers are getting permit from the Village authorities and District Councils to enter in the forest. Forest and Beekeeping Assistants in the District supports beekeepers in case of issues that need resolution. Registration of beekeepers and other actors in the forest may improve control of people who are doing illegal activities. “Beekeepers in Turkey are registered through beekeeping registration system and they get permit to move with bee hives from one place to another”. This approach may be adopted so that the beekeepers are allowed to enter in the forest at any time as may deem necessary a given operation. Beekeeping camp that have been identified and temporarily built by beekeepers themselves are possible to be converted to strong bee houses and campsite for commercial bee keeping but not ignore the use of log hives. At Aghondi Bee Reserve in Manyoni District central of Tanzania, the frame hives with suppers were found with strong colonies in June and in top bar hives bees were absconded. Beekeepers were responded that for to stay in the camps its dangerous life as the camps are not well secured. If the camps will be permanent and partitioned in such

that they allow several activities at ago, possibility to raise production will be higher. In the field the problem associated with beekeeping is timing harvesting period. Sometimes beekeepers are experienced hive with combs and brood with no honey due to late harvest. The authorities are offering permits based on calendar months and beekeepers are set their activities base on seasonality. A combination of these scenarios may result into applicable approaches to improve institutional set up beekeepers in protected areas.

#### **4.5 Conservation and Participation of Beekeepers**

Beekeeping in Tanzania is forest based and majority of beekeepers are carried out beekeeping in protected areas. Forest areas in Tanzania are estimated to cover a total of 48.1 million hectares; half of this land consists of woodlands. Out of these, 21.7 million hectares are protected areas and 26.4 ha are productive forests (NAFORMA report, 2013). The experiences are shown that beekeepers obtained permits to enter and carry out beekeeping in Forest and Game reserves. Duration of stay in forest reserves is longer than in Game reserves. Beekeepers who utilize community based forest management forests are using the forests all the time (FBD, 2009). Many conservation projects are taking beekeeping as an income generating activity that will reduce pressure on natural resources. A clear action plan that incorporate beekeeping activities and interests of the resources may lead to well functioned modules for conservation involving rural people.

## **1. CONCLUSION AND RECOMMENDATIONS**

### **5.1 Conclusion**

Beekeepers in Nyahua Mbuga Forest Reserve and other protected areas are recognizing wealth of bee resources and production capacity of honey and beeswax. Organization of beekeepers into beekeeping camps, beekeeping groups require an external support to create functional change that will add value to their activities and maximize production per hive and reduce time of stay in the forest.

Beekeeping sites that have been established by beekeepers may serve as conservation education centres to promote production of natural bee products and application of appropriate incentives to adjacent communities. The Government of Tanzania through Tanzania Forest Service Agency recognized the role of beekeepers in forest management and is now looking collaborators for improving the sector.

### **5.2 Recommendations**

This study provide recommendations to beekeepers and actors in conservation and development as follows:

- Recognize and promote indigenous knowledge from the beekeepers who carryout beekeeping activities.
- Providing applicable incentives to beekeepers in protected areas than introducing new technologies that may become burden to them;
- Incorporate conservation and climate change programme thank link beekeepers activities especially on adaptation measures
- Researchers are invites to establish appropriate improved camps that can be used by beekeepers not only for camping but as extensive bee house and processing units.
- Wildfires in the area of study is not a natural phenomena but caused by human activities including beekeepers themselves. It is recommended to conduct holistic approach team that will investigate and seek measures from beekeepers and village leaders to rescue the situation.

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## ANNEXES

### Annex 1: List of Villages Bordering Nyahua Mbuga Forest Reserve

S/N	Name of the Village	District	Region
1	Usunga	Sikonge	Tabora
2	Kiloleli	Sikonge	Tabora
3	Kanyamsenga	Sikonge	Tabora
4	Isanyandugu	Sikonge	Tabora
5	Mwamayunga	Sikonge	Tabora
6	Kisanga	Sikonge	Tabora
7	Nyahua	Sikonge	Tabora
8	Kyombo	Sikonge	Tabora
9	Kawekapina	Uyui	Tabora
10	Nsololo	Uyui	Tabora
11	Nguramwa	Uyui	Tabora
12	Malongwe	Uyui	Tabora
13	Tura	Uyui	Tabora
14	Masagati	Manyoni	Singida

Gowekeo village in Sikonge District is not bordering Nyahua forest Reserves but has beekeepers who carryout beekeeping in the forest. Also beekeepers from Mwamagembe in Manyoni District are also carry out beekeeping in Nyahua Mbuga Forest reserve. The distance from these village to the Forest is about 80 - 120 km.