

**DIVERSIFICATION OF COMMUNITY INCOME THROUGH COMMUNITY  
BASED BEEKEEPING: THE CASE OF MIHIMA VILLAGE, LINDI DISTRICT,  
LINDI REGION**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF MASTERS IN COMMUNITY  
ECONOMIC DEVELOPMENT (MCED) OF THE OPEN UNIVERSITY OF  
TANZANIA**

**2013**

**CERTIFICATION**

I, Dr. Deus D. Ngaruko certify that I have thoroughly read this dissertation titled, 'Diversification of Community Income Through Community Based Beekeeping : The case study of Mihima Village in Lindi District, Lindi Region, and found it to be acceptable for submission..

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Signature

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Date

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I, Nicholas Abel Kinyau, hereby declare that this Project is the result of my own work and has not been presented for the similar award in any other University or Institute of higher learning.

.....

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.....

Date

**DEDICATION**

This work is dedicated to my wife Wankembeta S. Kinyau My son Abel Nicholaus, my daughter Happiness Elilumba Nicholaus and Rehema Nicholaus. It is also dedicated to my father Mzee Abel Marco Kinyau and my Mother Elilumba Makalla.

**ABSTRACT**

The Participatory Assessment conducted in Mihima Village on community Economic, Environment and health identified the stresses in the community as being low household income, poor road networks, lack of safe, clean and adequate water, inadequate medical facilities, and lack of financial services to offer loans as well as low entrepreneurial skills to the business people in the village. The priority problems identified was low household income. Community Based Beekeeping project was designed with the objective of diversifying community income from the agriculture which was found to be the main economic activity. JIENDELEZE group was formed to pioneer Community Based Beekeeping initiative in the village and the village government agreed for beekeeping to be practiced in the village land forest reserve. The project implementation resulted into formation of the JIENDELEZE group which is pioneering the project with expectation that more villagers will join. Group members were trained in modern beekeeping and group management. Twenty bee hives were mobilized and strategically set in the village land forest reserve. However, beekeeping working gears such as bee veil, gloves, boots etc were not secured and group members were encouraged to continue raising funds to procure such items as they are important particularly starts small grant has been requested from WWF to support the development of the beekeeping activities in the villages. It is expected that WWF will support it as it has a great interest with the conservation of the coastal forests in Tanzania and already WWF is collaborating with villages in conservation of the forest. It is recommended that JIENDELEZE group should continue implementing the project in a self reliance manner and use the funds accrued from the project to expand the project to sustainable levels. The district council should continue providing guidance to the group and ensure that the group project remains sustainable so that other villagers can learn from the group.

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## LIST OF ACRONYMS

AIDS	Acquired Immune Deficient Syndrome
CBBM	Community Based Beekeeping Management
CBFM	Community Based Forest Management
CED	Community Economic Development
FBD	Forest and Beekeeping Division
FGD	Focus Group Discussion
IGA	Income Generating Activities
MNRT	Ministry of Natural Resources and Tourism
NBKP	National Beekeeping Program
NBP	National Beekeeping Policy
O & OD	Opportunities and Obstacles for Development
PFRA	Participatory Forest Resource Assessment
SPPSS	Statistical Package for Social Science Research
SWORT	Strength, Weakness, Opportunities and Threats
TASAF	Tanzania Social Action Fund
UTUMI	Utunzaji wa Mimitu
TWICO	Tanzania Wood Industries Corporation
VEO	Village Executive Officer
VG	Village Government.
VICOBA	Village Conservation Banks
VLFR	Village Land Forest Reserve
VNRC	Village Natural Resources Management
WMA	Wildlife Management Areas
WWF	World Wide Fund for Nature



## **CHAPTER ONE**

### **1.0 PARTICIPATORY NEEDS ASSESSMENT**

#### **1.1 Introduction**

Participatory Needs Assessment was conducted between February and April 2011, at Mihima village, Namupa Ward in Lindi District council. The aim of Participatory Needs Assessment was to understand and look into what works well and what needs improvement in village. The assessment also aimed at exploring the opportunities and obstacles for the community development. Observation, interview and Focus Group Discussions and transect walk techniques were used to generate information from the community members which was used to determine potential concerns of the village. Participatory methods were used in order to make the community to understand the process, so that the design of the project/ intervention would be effective. This chapter also describes in detail the findings of the participatory needs assessment, economic and environmental assessment.

The methodology used included research design, sampling procedures, research questions, data collection and data analysis. Following findings from various sectors described, the potential concern for the low income earning from the livelihoods interventions in the village. Diversification of household's income options was opted by the villagers that will make them meet their social and economic obligations.

#### **1.2 Community Profile**

##### **1.2.1 Location and Accessibility**

Mihima village is among 135 villages that form Lindi district council. The village is located about 112km from Lindi town and about 24km north of Masasi Road from

Nyangao. Mihima is among 5 villages that form Namupa ward, Mtama division. Other villages include Namupa, Muungano II, Mnamba and Nndawa. The village is also located at about 24km from Rondo Forest Reserve headquarters which has been recognised as the most famous coastal forest in East Africa in terms of biological richness and endemic species. The village is located on the Rondo Plateau rising to an altitude of about 900 m above sea level and it borders Liganga village in the North and Rondo Forest Reserve and Namupa village in the east. On the west side the village borders Ruangwa district while the southern part it borders Namangale village.

The village is accessible by road from Nyangao area at the junction to Masasi – Dar es salaam Road. The road is passable throughout the year, although most of its parts are easily demolished by water during the rain season and several times making it difficult to access to the village. However, there is no reliable public transport to Mihima village; the dependable transport is motorcycles which cost about Tsh 15,000 to hire a motorcycle to Nyangao area. There is no road connecting Mihima village and Ruangwa district which could have easily facilitated mobility and business transactions. There is a road connecting the village and Rondo Forest Reserve, which also can be used to travel to Lindi, through Nyengedi and Rutamba villages if it is well maintained.

### **1.2.2 Topography and Vegetation**

The village is situated at Rondo Plateau/Mwera plateau which is among the most extensive and highest massifs in the southeast of Tanzania, rising to an altitude of about 900m. The upper slopes of the mountain, where Mihima village is situated, support large areas of semi-deciduous hardwood forest, most of which is protected within the Rondo Forest Reserve and within the Mihima village land Forest Reserve. There are two types of forests in Mihima villages, the deciduous miombo woodlands, which are rich in

endangered and favourable timber tree species of *Pterocarpus angolensis* (Mninga), *Milicea exelsa* (Mvule) that were heavily logged by Still Brothers Company during colonial times and thereafter succeeded by the Tanzania Wood Industries Corporation (TWICO). The coastal forest patches form the semi evergreen forest in the massif Rondo plateau. The nearby forest of Rondo Forest Reserve is essentially a typical coastal forest, it contains significant elements and characteristic of montanne forest, and hosts more than 100 plant species found nowhere else in the world, the forest has densest concentrations of endemic plants in east Africa. During colonial period, 'Mvule' was heavily logged by a British company (Still Brothers Limited) that was located at Mnara Village. Community based forest management can retain the vegetation cover of the forest if it is well supported and people receive a proper education.

### **1.2.3 Climate and Precipitation**

The rainfall in Mihima village is uni-modal, which starts in December and ends in May which is controlled by the monsoon wind from Indian ocean reaching 800 -1500mm of rainfall in Rondo Plateau. It is among the areas which receive the highest amount of precipitation along the coastal forests of Tanzania, Kenya and Mozambique. Due to high altitude and high rainfall, in some periods of the years the temperature riches 5 degree centigrade makes the area to be coldest in Lindi region.

### **1.2.4 Population and Ethnic Groups**

According to October 2002 population census the council has a total population of 214,882 of which 102,112 are males and 112,770 are females. Projection for December 2009 shows that the council has 246,246 people. The population growth rate is -0.02 and the population density is about 33 people per sq. km. There are 400 households in Mihima village and a population of 1304. Among them 670 are women and 634 are men. Mihima

is sparsely populated compared to the available land in the village. Migration to big town particularly Dar Es Salaam searching for good pasture was mentioned to be one of the reasons for low population in the village. The dominant ethnic group in the village is Mwera who constitute about 99%. Other tribes are Yao, Makonde and Makua who constitute about 1%. Most of the village residents are Muslims. (Village profile 2004).

### **1.2.5 Administrative Structure**

The village is lead by the village chairperson who was democratically elected during local government elections in 2009 and is assisted by 5 sub village chairpersons and the village council members. The village has one Village Executive Officer who is employed by the Lindi district council. The village has 5 sub villages which are Mangae, Chiwindi, Cheleweni, Mnindi, and Liganga.

### **1.2.6 Education Services**

There is one primary school which started in 1973 just before Ujamaa villagilization. The school has 3 teachers and has about 200 pupils. The first student to pass and join secondary from this school was in 1978/79. This event still remembered by villagers as it took many years since the school was started before students passed to join secondary school. The closest secondary school is Namupa Seminary which is owned by the Catholic Church and Namupa secondary school which was recently constructed to save the Namupa ward. All secondary schools are located at about 15km from the village. There is no kindergarten school in the village which affects performance of the students at primary school ( Pers. Comm, Head teacher)

### **1.2.7 Water and Sanitation**

Mihima River is a year around water flowing river which is saving villagers for both domestic and other uses in the village. The river is also used for irrigation at small scale

levels and for the fishing particularly cat fish. There is no tap water, neither short well in the village which makes it difficult to attain the millennium development goal of getting water within 400m from the household. There are seasonal streams which flow during rainy season; also there is a swamp areas which is mostly used for cultivation of vegetables in the dry season and rice in the rain season.

### **1.2.8 Transport and Communication Network**

There is a road connecting the village and Nyangao where there is catholic hospital. This road also connects the village with other places like Lindi district council. There is also a road network connecting the village and Rondo Forest Reserve and other villages such as Ntene. However, this road is not reliable as sometimes the road gets blocked by trees as it passes through the closed canopy of Rondo forest. The poor road network was reported to affect social and economic activities as most of the goods/crops produced from the village are not easily transported to reach the market. There is no telephone/mobile communication in the village, which makes it difficult to communicate with people outside the village.

### **1.2.9 Agriculture and Livestock**

Mihima village basically consists of subsistence farmers. They cultivate maize, sorghum, cassava, groundnuts, cowpeas, sesame, cashew nuts and few fruit trees of mango and oranges. Some people keep chicken, cows, goats, ducks, guinea falls, and pigeons. Cash crops in the village include cowpeas, pigeon peas, green gram, cashew nuts and sesame. The agricultural production was reported to decline with time due to reduced soil fertility and continuous cultivation without application of fertilizer. This has influenced and perpetuated shifting cultivation within the village, particularly for sesame and maize cultivation. The village has never received any farm input from the government (Pers.

comm). As a result of reduced production, some villagers have been looking for farms in the neighbouring villages of Namangale and Liganga to cultivate sesame and maize. The average production of maize per acre was reported to be 3 bags and sesame was reported to be 2 bags while the same crops and area cultivated in Namangale village production per acre are much higher, for example, one acre in Namangale village produces 8 bags of maize and sesame 7 bags.

#### **1.2.10 Land and Forest**

The village has abundant land which harbours the pristine miombo woodlands suitable for beekeeping and lumbering. The land is suitable for growing cashew nuts and groundnuts as well as pigeon peas and cowpeas and green gram which are currently highly demanded as commercial crops in the Rondo Plateau. Compared to the village population, the village has huge unserviceable land which can be used for growing commercial timber tree such as *tectona grandis* and *pinus* species. Also the abundant land, which is about 20,000ha, is an opportunity for expansion of community based natural resources management including beekeeping, wildlife management areas as well as village land forest reserves.

The forest is dominated by Miombo woodlands and some patches of coastal forests. The Miombo woodland is still comprised of valuable timber species such *Pterocarpus angolensis* (Mninga), *afzelia quazensis* (Mkongo), *milicea excels* (mvule), *brastegia* species (mtondoro), *pirosum* species (Mpairosa), *albizia vescola* (Mpilipili) and many other valuable miombo tree species which are not easily available in other parts of the country. In order to ensure sustainability of the forests in the village land, the government through UTUMI project supported the village to demarcate 2662ha of land as village land forest reserve.. The village has developed a management plan and bye laws to govern management of the village land forest reserve. The harvesting plan for the village indicates

that the village can harvest about 12,000 'Mninga' trees per year (Source: Mihima Village Land Forest Reserve Management Plan 2004). Although the village has set aside areas for forest reserve, still has huge unprotected areas rich in both biological and valuable timber species. A biological survey conducted by UTUMI project in 2004 in Mihima village, revealed presence of many bird species and other biological resources in the village land forest reserve, this is a good opportunity for ecotourism promotion in the village. The Miombo and coastal forest patches within the village, create a huge opportunity for beekeeping which if introduced to this area can diversify the livelihood options and income for Mihima villagers.

#### **1.2.11 Security**

The Village Executive Officer and village security committee is responsible for security matters in the village. The village has trained Mgambo (community security guards) who supports the committee and the Village Executive Officer in day to day enforcement and maintenance of security in the village. Generally, villagers' perception on the security for the village is good, though there has been reported cases of robbery in the nearby villages which can be regarded as leading to insecurity in the village.

#### **1.2.12 Markets and Financial Services**

There are no markets in the village. Petty trading is conducted along roadsides and through vending at homesteads. Commonly sold items include; oranges, tomatoes, sugarcane, mushroom etc. Most of the 'kiosks' sell industrial items such as gametes, sugar, salt, kerosene, etc. The executive officer, raised concern on lack of construction items in the village which hinder people to construct modern houses. The only place to get construction materials is about 112km from the village. He noted that lack of public

transport makes it expensive to transport the construction materials from Lindi town to the village.

Mihima village have no financial services. The only place where you can access bank and financial services is in Lindi town and in Ndanda township where there is National Microfinance Bank. Other financial services such as PRIDE Tanzania are located in Lindi town. Villagers are depending from traditional lending systems which don't provide opportunities for the villagers to get enough loans for commercial purposes.

### **1.3 Community Needs Assessment**

The participatory needs assessment for Mihima village was conducted by researcher in collaboration with JIENDELEZE committee members, Mihima Village leaders and (Village Executive Officer and Village Chairperson) between February and April 2011. The Community needs assessment aim was to understand and look into what works well and what needs improvement in village. The assessment also aimed at exploring the opportunities and obstacles for the community development.

The assessment targeted the following areas; Community, Economic and environment where by obstacles and causes of obstacle and community assets that could be applied to address the obstacles identified. The main concern for the participatory assessment was to identify problems from the community and design relevant project to address the problems to the community need.

#### **1.3.1 The Objectives of the Community Needs Assessment**

The overall objective of conducting community needs assessment was to generate information from the community so as to identify needs, stresses, and concerns/problems



in Mihima village. It also wanted to establish its causes and effects and the existing opportunities which could be utilized to alleviate the negative scenarios.

The specific objectives of community needs assessment were to:

- (i) Identify the current community needs by looking at the causes and effects of them
- (ii) Examine the various community livelihoods that be identified in the village in Mihima village
- (iii) Look at the various solutions to the identified needs problems identified in Mihima village.

### **1.3.2 Research Questions**

The interests in conducting community needs assessment was in areas of problems facing the community, poverty situation, impacts of the problems to the community and also seek opinions on what should be done in solving the problems. In order to explore more information in these areas, the following were the major research questions.

- (i) What are the most important community needs/problems that the Mihima village community is facing?
- (ii) What are the various other community livelihood opportunities that can exploited in the village?
- (iii) What steps should be taken aimed at addressing the prioritized village community needs?

### **1.3.3 Research Methodology**

#### **(i) Research Design**

The research applied both qualitative and quantitative approaches in collecting data in the field. Community members provided relevant information,. Qualitative information was collected through Focus Group Discussions, conducted interviews and observations which

involved in probing on the perception of leaders, village natural resources committee and JIENDELEZE group members' women and youths on the economic status of the community.

## **(ii) Sampling Techniques**

Sampling is a process of choosing a group that is small to be a true representation of the entire population. The study used both random and purposive sampling basing on the different characteristics of the respondents. The village is composed of five sub villages namely, Liganga, Cheleweni, Mangae, Chiwindi and Mnindi. The names of the sub villages were written each on the separate pieces of papers and a rotary method was adopted in selecting the sub villages for study. Three pieces were picked randomly to represent the entire population and they happened to be Chiwindi, Liganga and Cheleweni sub villages as indicated in Table 1, the eight village leaders, the beekeepers, VNRC and leaders for Jiendeleze group were purposively selected due to ex-officio and skills they have in the community. Random sampling was applied to the 60 villagers whom twenty households were randomly selected from the three sub villages. In order to avoid biasness a sex ration of 1:1 was applied and a mixture of different age groups was attentively considered so as to get unbiased information.

The sample size was composed of sixty (60) respondents from five sub villages of Mihima village. Table 2 shows the distribution of the respondents interviewed during needs assessment.

**Table 1: Distribution of Respondents' Sample**

Respondents' Category	Respondents Title	Number of Respondents
Village Leaders	Chairperson	1
	Sub village chairpersons	5
	Village Executive Officer	1
	Chairperson of Economic & planning committee	1
Jiendezeze Group	Chairperson	1
	Secretary	1
	Treasurer	1
	Ordinary members	5
Villagers	Honey hunters/ harvesters	4
	Normal Villagers/households	60
VNRC	Members	12
Elders	Traditional healers	5
	Rituals and sacrifices	3
Total		100

**Source: Field Survey 2011**

### **(iii) Data Collection Methods**

Random sampling of representative households was done through developing a list of households in each sample in each sample sub village was interviewed. Quantitative data were collected by using structured questionnaires that were administered to heads of the households. The interview consisted of 35 open ended questions which facilitated development of dialogues with the respondents. Two youths from the village were

selected and trained on conducting the interview that facilitated the researcher to collect the needed information from Mihima villagers on the people and perception on their livelihood and income generation. Sixty (60) households were interviewed, while secondary data were collected from the documentations from the village office, ward office and at the district council office, department of community development, planning and natural resources management. A checklist was developed to guide informal discussions and dialogue for the Focus Group Discussion.

**(i) Survey Limitations**

Due to limited resources in terms of funds to cover more villages in Namupa ward, the survey focused on only one village constituting ten sub villages.

- (a) The questionnaire was long, rigorous and detailed in availing credible information.
- (b) Some respondents could not provide their true opinions during the interviews because they regarded some of the questions as sensitive.
- (c) The study only captured the circumstances which prevailed at the time of survey.
- (d) Prevalence of illiteracy among respondents posed a great limitation during the survey.

**(ii) Validity and Reliability**

In an attempt to ensure and maintain reliability, the survey questionnaires and the relevant interview guides were pretested to few respondents before the actual data collection exercise. This also ensured that the survey instruments used were relevant and could give the information and data that are both credible and reliable. Validity refers to the accurate presentation of the internal and external results or literally it means reality and truth of results obtained. While reliability is about stability of data gathered using the survey instruments and is a necessary but not sufficient condition for validity. For that case the reliability and validity of the results were ensured by.

Keen selection of the sample which was conducted in order to get the sample generalization. Selection of the true sample increases the researcher's ability to draw valid conclusion.

Involving competent Survey Assistants who collected data from the respondents.

This survey focused at gathering information and comparing the status before and after the project intervention.

#### **(iv) Data Analysis Methods**

Qualitative data collected from the households and the beekeeping groups as well as the village leadership, through questionnaires were coded, processed and entered into computer for analysis. Statistical Package for Social Science (SPSS) was used to analyse the collected data through questionnaires. Descriptive statistics such as frequencies, percentages and means were used to obtain the variability and central tendencies of variables. Qualitative data analysis started in the field after collecting data from the Focus Group Discussions as the data collected were summarised and interpreted.

### **1.4 Community Needs Assessment Findings**

**Table 2: Sex of Respondents**

Item	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Female	28	46.7	46.7	46.7
Male	32	53.3	53.3	100.0
Total	60	100.0	100.0	

**Source: Field Survey November 2011.**

It was found that female respondents were 46.7 percent and male respondents constituted 53.3 percent .On average there was reasonable gender representation in the survey

**Table 3: Age of Respondents in Years**

Item	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 18-35	26	43.3	43.3	43.3
36-45	20	33.3	33.3	76.7
46-60	13	21.7	21.7	98.3
Over 60	1	1.7	1.7	100.0
Total	60	100.0	100.0	

**Source: Field Survey November 2011**

It was revealed that most of the survey respondents were aged between 18-35 years (43.3%) followed by those aged between 36-45 years (33.3%).This indicates that majority were adults and of the productive age and can undertake income generating initiatives towards alleviating grinding poverty in the village.

**Table 4: Marital Status of Respondents**

Item	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	36	60.0	61.0	61.0
No	16	26.7	27.1	88.1
Divorced	4	6.7	6.8	94.9
Widow	2	3.3	3.4	98.3
Widower	1	1.7	1.7	100.0
Total	59	98.3	100.0	
Missing System	1	1.7		
Total	60	100.0		

**Source: Field Survey February 2011**

Majority of the survey respondents comprised of the married category (61%) and singles were only (27.1%). There were divorced (6.8 %) widows (3.4%) and widowers (1.7%). This indicates that majorities were people with family responsibilities and had sufficient knowledge with their environment.

**Table 5: Education Level of Respondents**

Item	Frequency	Percent	Valid Percent	Cumulative Percent
Valid College	3	5.0	5.0	5.0
Secondary	4	6.7	6.7	11.7
Primary	36	60.0	60.0	71.7
None	17	28.3	28.3	100.0
Total	60	100.0	100.0	

**Source: Field Survey February 2011.**

Most of the respondents have attained primary school education (60%) followed by those who didn't attend any education level (28%) and those who attended secondary education were (6.7 %). Whereas 5% Of respondent had attended college education. Findings showed that most of the people in the area were less interested in education and preferred more madras classes. Given the level of education of the respondents, they can attend and run the project and follow the sensitization and training in beekeeping, entrepreneurship and business skills.

**Table 6: Occupation of Respondents**

Item	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Employed	4	6.7	6.7	6.7
Self employed	25	41.7	41.7	48.3
Unemployed	31	51.7	51.7	100.0
Total	60	100.0	100.0	

**Source: Field Survey February 2011.**

The survey found out that most of the respondents were unemployed (51,1%) while 41.7% were self employed. Hence majority would be able to participate in the project fully and hence improve their livelihoods.

**Table 7: Cost of Living for Mihima Village**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Average	17	28.3	28.3	28.3
	Very Expensive	37	61.7	61.7	90.0
	Not Expensive	6	10.0	10.0	100.0
	Total	60	100.0	100.0	

**Source: Field Survey February 2011.**

The survey results from table 2; revealed people are involved in the decision making process in the community and admitted that the village leadership is good (87.3%). Poverty alleviation is a self initiated strategy, as people are struggling individually to earn income for their families; however it is recommended here that a study on poverty mitigation strategies be conducted to understand on this area. Villagers feel that the living condition in the village is high, with transport cost being mentioned as one of the driver for high living standard due to lack of reliable transport and hiking of fuel prices which triggers rise of price items, which are regarded as contributing to the rise of costs of living.

The perception of the villagers in terms of basic needs in the village. Respondents reported that some basic needs are not available in the village, these includes, laboratory services, building materials such as cement , iron sheets, nails etc, as well spare parts for bicycles, motorcycles and farm inputs.



**Table 8: Availability of Basic Needs in the Village.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not easily available	17	28.3	29.3	29.3
	Available outside the village	39	65.0	67.2	96.6
	Available in the village	2	3.3	3.4	100.0
	Total	58	96.7	100.0	
Missing	System	2	3.3		
Total		60	100.0		

**Source Field Survey February 2011**

There is also lack of clean and safe water in the villages, which was reported causing diarrhoea in the villages particularly during the rain season. Other stress which was revealed by the villagers was the lack of entrepreneurial skills for the Mihima villages. Most of the petty trading villagers admitted that they don't have any entrepreneurial skills.

**Table 9: Status of Volunteerism in Mihima village**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Decreasing	24	40.0	40.0	40.0
	Increasing	36	60.0	60.0	100.0
	Total	60	100.0	100.0	

**Source: Field Survey February 2011.**

Assessment of the volunteerism behaviours in the village was important as most of the development projects nowadays demands villagers participation, to build sense of ownership of the project and sustainability of development intervention. Therefore, it was necessary to assess the volunteerism behaviour in the village. As summarized in Table 1

below 60% of the responded reported that volunteerism in the village is increasing as compared to 40% who revealed that it is declining. The increase in volunteerism is probably due to good leadership and democratic decision making process.

**Table 10: Villagers Perception on Village Leadership**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Good	41	68.3	68.3	68.3
Not good	19	31.7	31.7	100.0
Total	60	100.0	100.0	

**Source: Field Survey February 2011.**

It was noted that the perception of the Mihima villagers towards village leaders, had 68.3% of the respondents perceived the village leadership as good, while 31.7% perceived as not good. One can argue that due to high volunteerism of the community members in the villages, self help development activities/ projects can succeed well in Mihima village if the community members are well motivated and capacitated with appropriate skills.

**Table 11: Decision Making Process in Mihima Village**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	37	61.7	61.7	61.7
No	23	38.3	38.3	100.0
Total	60	100.0	100.0	

**Source: Field Survey February 2011**

Majority of the respondents 61.7% admitted that the decision making process is conducted in open minded and in a transparency ways while few 38.3% admitted to be not conducted

in open minded. To justify their perception in decision making process in the village, respondents mentioned that they have been involved voluntary works for the villages, they have been participating in decision making when a new project or information which needs majority decisions in the villages, also they regularly attend village assembly meetings and income and expenditure reports are presented to the villagers.

**Table 12: Perception of the Villagers on Security in the Village**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	33	55.0	55.0	55.0
	Moderate	8	13.3	13.3	68.3
	Poor	19	31.7	31.7	100.0
	Total	60	100.0	100.0	

**Source: Field Survey February 2011**

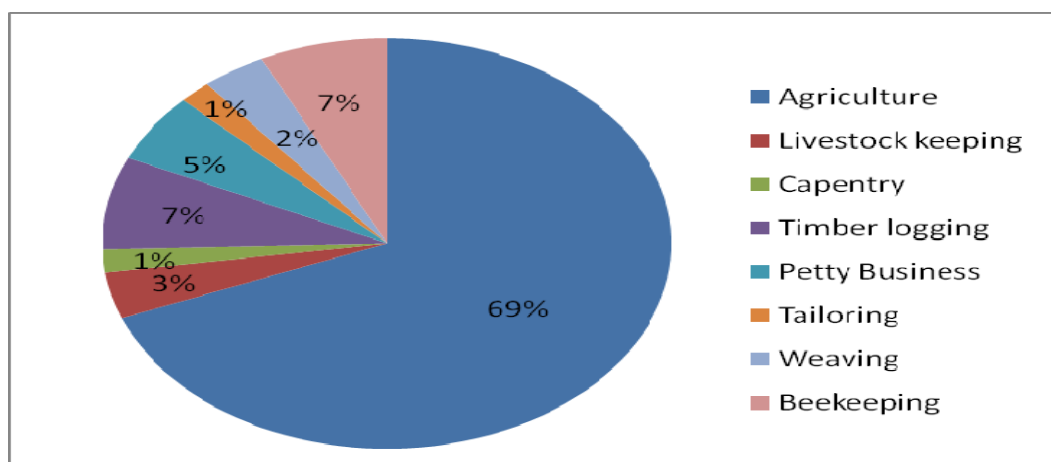
While security is important for the prosperity of economic activities in the community, respondents perceived the security for the villages as good which can favour people to invest into income generation activities. Table 4 below shows that 55.0% ( village Council and Village Natural Resources Committee) of the respondents feel the security for Mihima village is satisfactory while 31.7 % (elders ) feel the security is not satisfactory, the and the beekeeping members feel it is moderate. The two groups of respondents, (Elders and Beekeeping members) who said it not satisfactory or moderate might be due to the reasons that recently there has been a reported case for robbery in the nearby village. However, the available information from the Village Executive Officer revealed that the security for the village is stable and satisfactory as there has no reported robbery cases in the village in recent years.

**Table 13: Households Income**

Item	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 10000-50000	34	56.7	56.7	56.7
50001-100000	13	21.7	21.7	78.3
100001-200000	8	13.3	13.3	91.7
More than 200000	5	8.3	8.3	100.0
Total	60	100.0	100.0	

Source: field Survey February 2011

It was revealed that, the village is characterised by poor economic interventions which are not doing well due to lack of capital and entrepreneurial skills to most to the villagers. Most of basic needs for the community members are obtained outside the village, which are also difficult to access due to poor transport and road networks. Due to the above reasons the income of the community members was reported to be very poor, justifying for most of the community members failing to get basic needs for their households. Table 6 below shows the income of the villagers in Mihima, 56.7% of the respondents reported to earn between Tsh 10,000 to 50,000 per year.

**Figure 1: Main Economic Activities for Mihima Village**

Source: Field Data Survey 2011

The main economic activities undertaken by Mihima Villagers include agriculture which constitute to 69% followed by forest related industries such as timber logging 7% and beekeeping 7%. This also indicated that there is heavy dependency of villagers for household income from the forest related products as they constitute about 14% of the earnings of the villagers. Other economic activities for Mihima village included Petty trade, livestock keeping and weaving. Villagers mentioned cash crops for the village to include cashew nuts, sesame, pigeon pee and green gram. Cashew nut was mentioned to me the most income earning in the village especially after introduction of the “Stakabadhi ghalani” ( this means that the cooperatives are now helping villagers to find markets for their cashew nut and funds are paid by instalments). According to the VEO the price per kilogram of cashew nut last year reached Tsh 1700. Before introduction of this system the price for cashew nut did not exceeded Tsh 500 when business people were directly purchasing from the farmers. However, the respondents reported that although agriculture is the main economic activity in the village, production per area is decreasing as compared to the past time and villagers are hiring farms to other neighbouring villages such as Namangale.

Logging is also contributing to the income of the villagers in Mihima village (7%) as it can be seen from figure 1. Main trees logged are *afzelia quazensis* and *Pterocarpus angolensis* (*Mninga*). According to the Harvesting plan for Mihima Village land forest reserve, the village still has enough valuable tree species for timber which in other areas have been significantly reduced. *Pterocarpus angolensis* is the leading timber tree species in terms of availability in the village land forest reserve. The harvesting plan indicates that the village can harvest more than 12,000 *Pterocarpus angolensis* trees every year for a period of five years to come. Other valuable timber tree species available in Mihima includes *Paurosa*, which in the past years it attracted the international markets. Harvesting

will be legalised in the village land forest reserve after handing over of the village land forest reserve. Other forest related industries such as bee keeping are potentially viable (7%) in the village if promoted. Villagers mentioned lack of extension services as the one of the problem hindering progress of beekeeping in the village. There is no extension officer to support beekeeping interventions in the village. However, if this potential is fully utilized it may significantly increase income for the villagers in Mihima.

The petty Businesses (5%) which are commonly found in the village included retailing kiosks, restaurants, food vending ,mushrooms selling, caterpillar selling ( mushrooms and caterpillar are seasonal businesses and are practiced with few specialized people in the village).

The petty trade apart from being source of income to business people, they are essential to the community members to get the basic needs within the village. There are no wholesale shops in the village, the wholesale shops are found in Lindi town and Nyangao township. It was also noted that petty traders lack basic education on business skills, hence they have been doing basing on the experiences. Responded reported that it is difficult to get loans from the village as there is no any financial services provided in the village. Respondent also reported that there are seasonal petty trading in the village such as mushrooms selling, Caterpillar selling (these are commonly known as ‘Makalati’ are sold in November when the tree start giving out new leaves). ‘Makalati’ are priced at Tsh 3000 per kg and Tsh 500 for about 250gm. Mushrooms are sold between Tsh 500 – 1000 per about 500gm.

Respondent also reported items which are obtained outside the village which included, building materials ( iron sheets, cement, paints and nails), bicycle and motorcycle spare parts, farm inputs (improved seeds and fertilizer), laboratory services for clinical purposes.

However, despite a number of economic activities being available in the village, the community is faced with the four major challenges; poverty, inadequate entrepreneurship skills and knowledge, poor access to micro-credit facilities and low investment capabilities due to inadequate or lack of capital.

**Table 14; Loan Accessibility in the Village**

Item	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Not easy to access loan	58	96.7	96.7	96.7
Easy to Access loan	2	3.3	3.3	100.0
Total	60	100.0	100.0	

**Source: Field Survey February 2011**

The data summarized in the Table 7 and 8 shows that 96.7% of the respondents revealed that they cannot easily accessed loans in the village due to lack of financial institutions, while 3.3% said they can access loans but not from the financial institution rather from individuals in the village and outside the village. Absence of loans facilities was reported to be caused by the lack of poor roads to the village which hinders financial institutions to reach to the village to provide such services in the village and even in the neighbouring villages.

During UTUMI project, the project wanted to support credit and savings groups in the village, however, as it has been mentioned before, the project phased out before completing planned activities hence saving and credit schemes were not established. When asked if they see the need for Microfinance in the village, villagers reported that the need is there as they would like to access financial services, they father advised that if possible, village savings and credit schemes to be preferred as they have heard from other areas on how that model can help poor people to access loans and build the saving culture.

**Table 15: Entrepreneurship Training in the Village**

Item	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	4	6.7	6.7	6.7
No	56	93.3	93.3	100.0
Total	60	100.0	100.0	

**Source: Field survey 2011.**

Entrepreneurship skill is one of the important factors for stimulation and growth of the businesses in a particular society. Lack of the entrepreneurship skills in a community leads to poor existence of the business in the society. Many respondents revealed that they lack business skills and they have never attended any entrepreneurship training in the village. Table 9 below shows that 93.3% of the respondents admitted that they have never attended the entrepreneurship skills. Reasons given by the respondents were difficult to access other places such as Lindi town where most of the training institution such as VETA and SIDO are situated. On the other hand, villagers said that there is no Cooperative and Development Officers at ward and village levels who could train and train them in business venture. When asked if they get profit from the petty trading in the villages most of the business people revealed that they can an average profit as some times they can not keep even records of what they do. Table 10, shows respondents determination of the profits they get from the retails businesses in the village, where by 76.2% of the respondents said they earn a low profit from the business.



**Table 16. Perception of the Villagers on Forest Condition.**

Item	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Good	44	73.3	74.6	74.6
Not Good	15	25.0	25.4	100.0
Total	59	98.3	100.0	
Missing System	1	1.7		
Total	60	100.0		

**Source: Field Survey February 2011**

It was revealed that 74.6% of the respondents claimed the forest condition is good, there has been feeling from the villagers that there are persistent disappearance of natural resources in the village. The reasons given were that the population in the village is increasing with time, leading villagers to search for more land for cultivation and other forest utilizations. Forestry was found to be the most affected by increase in population due to the increasing demand from residents and pressure for land convention to other uses such as agriculture. Fire wood, charcoal and poles are the main sources of energy and construction materials in the village. Shifting cultivation and Forest fires were seen to be main of the drivers of forest loss in the village. Other drivers of forest loss in the village includes, timber logging.

**Table 17: Drivers for Deforestation in Mihima Village**

Activity	Frequency	Percent
Forest fire	18	32.7
Shifting cultivation	27	49.1
Timber logging	5	9.1
Charcoal making	1	1.8
Building materials (poles)	4	7.3
Total	55	100

**Source: Field Survey February 2011**

From Table 18 above, most of the respondent 49.1% admitted that shifting cultivation is the main driver to the deforestation of the village forest. This information was also supported by the research finding conducted by Tanzania Forest Conservation group which revealed that shifting cultivation is the main driver of forest degradation in Lindi region. The reason given for the shifting cultivation was that, shifting cultivation reduces labour intensity in managing the farms. The new farms opened in the forest do not require the farmer to weed, so it helps a farmer to cultivate portions of land enough to feed the household. Villagers also argued that if you continue cultivating the same piece of land every year, the crops are overshadowed with the weeds hence the production decreases and it needs more time and labour to weed the farm.

Although forest fire ranked second, (32.7%), but it was reported by the respondents that it affects the condition of the forest and its biological resources. Most of the small mammals and young tree are killed by forest fire and also it reduces the biomass materials in the forest. Timber logging (9.1%) was reported as one of the drivers of the deforestation due to fact that in the past years, TWICO was logging in the area, and it caused reduction availability of some species in the forest. The heavily logged species was reported to be *militia excelsa* and *Afzelia quazensis*. These trees were logged to feed the saw mill which was located at Mnara village and Mingoyo saw mill in Mnazi Mmoja. Most of the building poles (7.3%) are used for the households construction in the village, respondents revealed that most of the households in the village are constructed by use of poles. The reason given was that the Mihima village land is sandy and it doesn't allow for bricks making, on the other hand there is not modern building materials in the village which could be sold to villagers, the building materials are available in Lindi town and at Nyanga where most of the villagers cannot afford due to lack of public transport to Mihima

village, while charcoaling is almost insignificant in the village as it scored 1.8%. This is might be due to the fact that Mihima village is remote and the road network is poor hence the demand for charcoal is very low.

On the hand responded admitted that community based management has supported protection of the forest in the village land; particularly those species which were highly demanded by the loggers can now be obtained in the village land forest reserve. Respondents mentioned tree species which are still available in the village land as *Pterocarpus angolensis*, *Azelia quazensis*, *Militia excelsa* and *paurosa* sp. When asked on the benefit accrued from the village forest reserve which they have been protecting for 10 years, respondents raised a concern that they have never, benefited from the VLFR. The reason given was that, since UTUMI was phased out they have never been facilitated with forest management yet the village land forest reserve has never been handed over to them. However, they were promised harvesting will start soon after handing over of the forest. One respondent was heard saying that “we have waited for too long now for our forests to be handed over to us, we expected to start benefiting from the forests, but nothing has happen today”. Respondents suggested for other income generating activities such as beekeeping which comply with the conservation of the forest

### **1.5 Community Needs Prioritization**

Pair wise ranking method was used to rank the community needs identified from community, economic, health and environmental assessment to get the community priority problem which ranked higher compared to other problems identified. The table 19 above shows the pair wise ranking results and scores for each need. As it can be seen from the table, low households income scored 4 as compared to the rest of the other problems and therefore it was the priority needs for Mihima Village.

**Table 18: Problem Prioritization.**

Problem	Low household income	Inadequate water supply	Inadequate health facilities	Poor Road network and transportation	Score	Rank
Low household income	Low household income	Low household income	Low household income	Low household income	4	1
Inadequate and unsafe water supply		Inadequate and unsafe water supply	Inadequate health facilities	Poor road network	1	4
Inadequate health facilities			Inadequate health facility	Poor road network	2	3
Poor road network				Poor road network	3	2

**Source: Field survey February 2011:**

From the problem prioritization above, the pertinent issue for the Mihma village is the low households' income. This reveals that increasing household income will enable Mihma villagers to improve their livelihoods and life standards for the villagers. It was therefore necessary to look for interventions or projects that will support increase in households' income for Mihma villagers. The researcher in collaboration with the respondents had to look for existing opportunities in the village that will help in formulating income generation activities for the villagers.

Problem prioritization for Mihma village, lead to identifying possible option for improving household income in Mihma village. This was necessary because there can be

many activities which could be implemented in Mihima village to increase income of the villagers. A list of income generation projects was developed by the villagers basing on their experiences. The proposed income generating micro projects included; establishment of Village Community Banks (VICOBA) in the village so that people can start savings and credit schemes, establishment of the Loan ,a Cow pay a cow scheme ('Kopa ng'ombe Lipa ng'ombe'), establishment of beekeeping activities in the village and improved cash crops production in the village. After long discussions, participants admitted that beekeeping can be opted as a viable income generation activity in the village. The reason given was that beekeeping can be carried out together with other activities and it is not time demanding like other activities. Villagers also thought that bees are supporting cross pollination of the crops, if they are kept in the village they can improve agricultural production by bees cross pollinating their crops. The other reason given to support beekeeping project in the village was, it has relative low running costs, but also it was agreed that there are already experienced people in the village who can guide starting of the project. Another reason for opting beekeeping activity as an income generating activity is the fact that, the village has already started the Community based forest management therefore beekeeping can be practiced within this areas as it helps to improve the conditions of the forests due to the fact that, beekeepers will be mandated to take care of the forest during bee hives inspection. The village has set aside 2662 ha of Village Land Forest Reserve, which was seen as an opportunity for the beekeeping activities in the village. The consensus reached marked a start of modern beekeeping in the village as a means of diversifying household income for Mihima community.

## **1.6 Chapter Conclusion**

The research team which was composed of the student, Community Based Organization (CBO), government officials at the village and Ward managed to conduct participatory

needs assessment in four areas of the community, economic, environment and health. The assessment was completed through application of different methods and tools which included, focus group discussions, questionnaires, documentary review, observation, transect walk in the village and households interview. The findings of the assessment were many, which included; low income, lack of entrepreneurship skills, increasing deterioration of the natural resource base integrity, poor health facilities as well as low production from agricultural activities. The team also found that lack of reliable market for their product, lack of capital and poor prices for their products offered by business people. However, it was revealed by the team that there exists untapped assets in the village if they are utilized can contribute the improvement of the livelihoods of the villages in Mihima. These assets include diverse forest types, arable land, bee colonies, cultural resource base and tourism attraction potentials, water resources, as well as favourable weather condition which can support growth of economy for the Mihima village. The village also lacks development partners which are willing to engage and collaborate with the villagers in various development initiatives. Such stakeholders includes, District Council, Rondo Forest Reserve which is in the process of being upgraded to a Nature Reserve, World Wide Fund for Nature, which has a long commitment working in the Coastal forests of Tanzania as well as Agakhan Foundation which has initiated saving and credit schemes in the Lindi district council villages.

Mihima villagers through participatory needs assessment have prioritized beekeeping as the best option for them to diversify livelihood options for the community members. Beekeeping was opted and prioritised due to the fact that, it can be conducted without compromising other development activities in the village but also it leads to valuing the forest resource when people starts to harvest bees products as well as the capability of the bees to pollinate their agricultural products.

## CHAPTER TWO

### 2.0 PROBLEM IDENTIFICATION

#### 2.1 Background to Research Problem

This chapter describes the direction of the project suggested based on the problem identified during needs assessment. The project to be undertaken is also based on those needs identified in the previous chapter. From the previous chapter, the research team in collaboration with the villagers, through participatory assessment and pair wise ranking, identified low income to the community as the main cause of the grinding poverty in the community. During participatory needs assessment it was learnt that villagers in the community have been trying various initiatives to reduce households' poverty through income generation activities but they lacked appropriate skills and techniques to manage the income generating activities in a profitable manner. They end up producing little which cannot suffice their social obligations or produce more but they lack the reliable markets to sell their products within a profit margin.

The researchers choose one community group, JIENDELEZE beekeeping group, located in Mihima village in Namupa ward. The group was part of the research team and participated in conducting the participatory needs assessment. The group admitted to the researcher that, they lack appropriate skills for improved beekeeping interventions, few among them are traditional beekeepers who have been earning little from their activities.

The low income to Mihima households was seen to be the most grinding problem in the village. Low income was reported to affect the most of the household in the community. The consequences of the low income to the Mihima village is the persistence grinding poverty in the village as well as community members are vulnerable to shocks and unemployment in the village particularly to women and youths who constitute the majority

of the community members in the village. Most of the community members cannot meet the basic needs and social obligations of the community in the village. To reduce the effects of the problem, community members will be facilitated with establishment of the Modern beekeeping project as a means of diversifying and increasing income to the rural poor villagers of Mihima.

## **2.2 Problem Statement**

Community Needs Assessment results analysis identified low income as the main problem facing Mihima community members and learnt that lack of entrepreneurship skills as the main causes of low income to the Mihima households. Therefore, the overall objective of the study will be to tackle the problem of low households income and other problems identified such as unreliable markets, low prices offered to locally produced products and unemployment. These problems has led to poor living conditions of the Mihima Communities, substandard houses ( thatch roofed houses), inability to meet social obligations and basic needs such as meals, school costs, and medical care, The low income in the village has caused labour mobility from the village to cities particularly Dar Es Salaam, where by youths are the one affected most. This problem was identified as the main cause of the early pregnancies and school dropout as parents cannot meet basic needs for their children, forced labours such as prostitution and child employment. To reduce the effects of the problem, community members will be facilitated with establishment of the modern beekeeping project as a means of diversifying income to the rural poor villagers of Mihima.

## **2.3 Project Description**

Diversification of community income through initiating and promoting community based beekeeping project will be implemented by Jiendeleze group in Mihima village. The



village is located in Namupa ward in Lindi district council. The village is located within Rondo plateau which has diverse natural resources of coastal forests and Miombo woodland. The traditional ways of bee products production and processing, and packaging will be promoted in the village. Villagers' capacity to implement this project will be built, through step by step training with application of adult learning skills to ensure that all members understand and gain relevant skills

The project will be owned by the JIENDELEZE group and beekeeping training will be offered to this group to enable them run the project in a sustainable way. The aim of the project is not promoting beekeeping and cash flows to the Jiendeleze group members only, rather it aims at attracting other community members who have not started beekeeping to see and value it as a source of income for their households. The target community or beneficiaries are expected to participate in the project implementation by building their capacities through beekeeping training and entrepreneurship skills training. Bee products processing and products packaging will be among the areas for increasing their capacities through appropriate training. Through training on modern beekeeping, bees products processing and packaging, beekeepers in Mihima village will improve their income and reduce the extent of the poverty in their community.

### **2. 3. 1 Target Community**

The project is meant to serve men and women of Mihima village in Namupa ward, Lindi District council- Lindi region.

The first target group is JIENDELEZE income generation groups based in Mihima village which will be the host organizations that will implement the project and second is men, women, youth, village leaders who are residents of the village. This group which has 32

members have volunteered their time and materials to facilitate training, they have also agreed to attend the training that will be offered by the researcher. The researcher will support the group with necessary facilities to enable them attain their goals of entrepreneurial skills and improved income for their households. The management of the group will be done by Jiendeleze group members.

The project works with the following villagers:

People with interest and with indigenous knowledge of beekeeping practices;

Beneficiaries proving their long term commitment to live in the project location and not those likely to leave for urban areas in search of better opportunities; People with commitment to work in the groups according to pre arranged agreement as stipulated in their group constitution establishing. People who willing to promote long term sustainability, accountability and transparency during project implementation, monitoring, review evaluation and reporting.

### **2.3.2 Project Stakeholders**

The stakeholders for the beekeeping project in Mihima village include the Mihima villagers, the NGOs working in the area, the Beekeeping groups, Jiendeleze group who will be implementing the project as well as elders who have interest in the forest where the beekeeping will be practiced. The stakeholders have thoroughly been discussed below as follows.

#### **Mihima Village**

Mihima village is the major stakeholder for the project. Villagers are expected to perform activities as mentioned above for the project to succeed and in addition they are the host of the researcher who will provide the expertise in carrying the beekeeping project in the village land forest reserve. They are also the beneficiary of the project.

**Bee keeping Groups/Jiendeleze Group**

The bee keepers have the interest to protect the forests. Forests are important places to hang their beehives for bee keeping. Further more trees are needed for flowers which are needed by bees for nectar for honey making. The beekeepers are highly expected to support the CBBM project implementation which is aimed at conserving the forest.

**Lindi District Council**

Another major stakeholder of the project is the Lindi District Council. The roles that the district will perform to make the project is successful are approving the forest bye-laws formed by Mihima Village, approving forest management plan prepared by Mihima Village, monitor if the villagers are managing the forest in accordance with the forest management plan and continue to provide the technical advice to the village on forest and beekeeping management.

**World Wide Fund for Nature (WWF).**

This is an International organization supporting the conservation of biodiversity in the village. The main approach the organization is using is community based forest management and ensuring the communities are benefiting from the adjacent forests. The organization has indicated beekeeping to be one of the livelihood options to be undertaken by the villagers.

**Elders**

There are elders in the community who are using forests as important places for offering ritual sacrifices. It is expected that this group will highly support the CBBM project as it aimed to prevent devastation of the forests in the community. Elders also will have the role of ensuring that ritual places and sacred areas in the village are respected

**Table 19: Project Stakeholders Analysis**

Name of stakeholder	Potential Contribution	Expectation	Assumptions	Priority needs for stakeholders' interests.
Mihima Village	Provide enabling environment for the project to be implemented in the village	Allow and support beekeeping activities to be carried out in the village forest reserve.	Shall allow and sustain the project even after the contract with the CED student has ended.	Effective Management of forest and support of beekeeping.
JIENDELEZE group	Host of the CED Student and the major CBBM project implementer	Fully implementation of CBBM	Will benefit from the project and will sustain it even after the contract with the student has ended.	Effective management of the project in collaboration with village government
Lindi District Council	Provision of technical skills and dissemination and implementation of policies on CBBM in the village.	The district shall approve the CBFM project Implementation in the village. It shall provide fully support on CBBM project implementation	Shall hand over Mihima forests to villagers and remain with the role to monitor its management and provide technical support where required.	Networking and involvement
WWF	Provision funds for PFM and also provision of technical skills	WWF shall support PFM and beekeeping project	Funding will be available	Conservation of the forests will remain a priority in the village
Elders	Shared experience on forests protection and Management.	Support the forest protection and management.	Will be positive to the CBFM project as it meets their interest to protect the forest.	Effective involvement in all CBBM project stages.
Bee keepers	Provide experience on using forests for non wood products.	Support the forest protection and management.	Will be positive to the CBBM project as it meets their interest to increase honey production.	Effective Involvement in all CBBM project stages.
Schools	Raised students/pupils capacity on environmental conservation.	Positive support to the project.	Expected to establish tree nurseries and be centres for tree seedlings supply.	Effective Networking and collaboration with schools.

**Source: Field Survey 2011**

### **Secondary and Primary Schools**

The schools are important stakeholders as they are training pupils and students on the importance of forest protection and conservation. The pupils and students are expected to disseminate the knowledge to their respective families and community at large. They are also expected to be centres for establishing tree nurseries to increase tree foliage in the village.

### **2.3.3 Project Goal**

The overarching goal is to improve Mihima village community livelihoods at household level by raising income, employment opportunities, health and nutritional status and food security through modern beekeeping.

### **2.3.4 Project Objectives**

The following are the objectives of the project:

- (i) Mobilize and train 32 members on modern beekeeping to improve productivity by July 2011.
- (ii) Raise household income, employment and food security of the beekeepers in Mihima village by December 2011.
- (iii) Maintain health and nutritional status of Mihima village community by December 2011.

## **2.4 Host Organization**

The name of the organization hosting the project is JIENDELEZE GROUP based in Mihima village. This is a consortium of income generation activities groups which have agreed to engage into bee keeping to tap the potential of bee keeping opportunity in the village. The group has 32 members among them 22 men and 8 women.

The group is led by the chairperson: Hamisi Ngulangwa, Secretary: Juma Hokororo and the Treasurer is Amina Athumani and other two committee members. The Group members meet every Sunday to discuss various group issues and normally organize the Annual General Meeting towards the end of December every year.

The researcher will have the responsibility of providing expertise on initiation of the community based beekeeping in the village. Specific roles will include providing training to the group members and community at large on the beekeeping and entrepreneurial skills based on the beekeeping and community based forest management in Tanzania. The role of the village will be to guide the group to operate as per their constitution. The vision of the JIENDELEZE group is to attain better life to every group members and honey vendors as well as to the improvement of the health status of the beneficiaries. Its mission is to enhance the capacity of the group members on bee keeping and entrepreneurship skills.

#### **2.4.1 The JIENDELEZE Group Objectives**

- (i) To foster agricultural activities in the production of cash and food crops e.g. maize, sesame, cassava, sweet potatoes, millet.
- (ii) To propagate and plant fruit crops like oranges, mangoes and other fruits
- (iii) To engage into the livestock keeping activities such poultry like chickens, turkeys, ducks, geese and guinea fowl and other live animals like, cattle, goats and sheep
- (i) To support beekeeping development in order to foster income and employment opportunities and the backward linkage of promoting high level of biodiversity conservation and improvement of ecological functions of the village and enhancing plant regeneration

- (ii) To participate in the cross cutting issues such as HIV/AIDS, environmental conservation, gender participation and ensure village sanitation is well maintained
- (iii) To cooperate with other organizations of the similar nature within and outside Tanzania in conducting and implementing various activities and programs beneficial to the needy people of Mihima village.

The group raises its funds through contributions which they used for making local hives and purchase of items for making bee hives. However, the funds they contribute are not enough to enable them undertake their activities properly. They are now preparing to register the group so that they can be able to start raising funds for their activities.

#### **2.4.2 Institutional Assessment of the Host Organization**

An institutional assessment conducted to assess capacity and gaps revealed that JIENDELEZE group is a new group which has just started. However, the group has started implementing its activities. The activities are implemented through voluntary ways whereby they have mobilized bee hives. There are bye-laws to bind the group on member's activities participation and disciplinary actions are normally taken to the bye-law violators. This study revealed also that there is reliable human labour in volunteerism for activities which are owned by the group for instance collection of logs for making beehives. The level of volunteerism is high and the group projects are well performed. The assessment further discovered that the group has expertise on the activities they are doing, there are group members who are traditionally knowledgeable on beekeeping activities. However there is a gap on modern beekeeping management expertise as the district has few beekeepers that are not enough to visit each village in the district to provide the required expertise. The gap was integrated in my project where by beekeeping

group established and trained effectively on modern beekeeping management in order to provide expertise to the village government and other villagers.

### **2.4.3 SWOT Analysis of Host Organization**

The main strength of JIENDELEZE is the use of good leadership procedures in its operations. The group has a constitution which governs day to day operation of the group activities. Decisions on key issues are made by the general assembly which is the highest governing body in the group. In addition there is the group Executive Committee that deals with day-to-day activities of the group. The committee constitutionally assumes group activities for a period of two years and thereafter an election is done by the general meeting for new leadership. Strength of the group is the unity among group members putting into consideration that, they used to work together for about two years ago. The group however lacks skills and knowledge on project planning and management. It also lacks some leadership skills on specialization and division of labour that makes everyone accountable and responsible on his/her respective job area.

The main opportunities, among others, was the existence of the WWF that is willing to support the group and the presence of large village forest land in the area in which the group could carry out a number of environmental conservation activities including beekeeping. Permanent water source in Mihima River was another opportunity that could support a number of economic activities such as vegetable cultivation, fishing, and irrigation in the area including beekeeping. This water can be used for irrigation in case of tree planting and vegetable cultivation activities and also is a good source of water for bees in case of beekeeping project.

Important threats to the group are wild fires as well as wild animals abundant in the area that might hinder group performance in beekeeping and environmental conservation



activities. Honey burgers were reported to be available in the village which may affect the beekeeping activity in the village. In case persistent draught occurs may also affect beekeeping activities in the village considering that most of the vegetations are Miombo woodlands.

#### **2.4.4 Chapter Conclusion**

The major problem identified during economic assessment is low income for a household which is attributed by lack of diverse income generation activities in the village. Consequently the availability of poverty in the villages is persistent and people cannot afford meeting basic needs and social obligations in the community. If the problem will not be addressed life standards of the villagers will be highly affected.

Beekeeping Management under which the community has been facilitated to undertake will lead them to sustainable forest management as beekeeping had a direct relationship with forest conservation if practiced in a sustainable ways. Better management of the forest will also contribute to the livelihood improvement to entire community basing on the management plan and harvesting plans which were developed in 2004.

## **CHAPTER THREE**

### **3.0 LITERATURE REVIEW**

#### **3.1 Introduction**

This chapter describes the theoretical, empirical and policy literature review through published and unpublished materials to make the research problem simple. Theoretical literature review was undertaken from reputable sources like books, websites, and reports from intermediaries in order to review how the problem was identified, the existence of the problem, the magnitude and benefits of solving the problem, while empirical literature review provides literature which resemble to this project and show how other researchers approached similar projects. Policy review provides opportunity to revisit regional and national, designed to provide a framework to the project and provide guidance in fostering community development initiatives.

#### **3.2 Theoretical Literature review**

##### **(i) Beekeeping and Sustainable Livelihood**

Bees are natural resources that are freely available in the wild. Where bees have not been poisoned, damaged or harmed, they will collect wherever they are able, provided the natural conditions include available flowering plants. Wild or cultivated areas, wasteland and even areas where there may be land mines all have value for beekeeping. Beekeeping is possible in arid areas and places where crops or other enterprises have failed; the roots of nectar-bearing trees may still be able to reach the water table far below the surface. This makes beekeeping feasible in marginal conditions, which is important for people who need to restore their livelihoods or create new ones (Bradbear, 2003).

Although beekeeping can only rarely become the sole source of income and livelihood for people in the third world, its role as a source of supplementary earnings, food, and employment should not be underestimated. Beekeeping promotes rural diversification and hence is an alternative source of income and employment, particularly in areas where arable land is restricted and demographic growth is resulting in insufficiently profitable land holdings. Beekeeping is an activity that can successfully be adopted by women in many parts of the continent. Beekeeping allows for a degree of risk avoidance by providing a reliable, high value product that enables rural farmers to survive in times of economic crisis (Bradbeer, 2003)

#### **(ii) Beekeeping as Source of Food and Income**

Beekeeping has been explained as an effective way for poor people to improve their livelihoods through increased income. Beekeeping is therefore potentially valuable in poverty alleviation, as well as for the maintenance of biodiversity. It is also potential resources for agricultural production through crop cross pollination. By providing beekeepers in developing countries with advice about simple, sustainable methods, it could help them increase their income without destroying the environment (Bradbeer, 2006). Beekeeping is a source of food (honey, pollen and brood); raw material for various industries (beeswax candles, cosmetics, textiles, lubricants etc.), medicine and income for the people (URT, 1998).

Both honey and brood are important sources of food. For instance, a mixture of honey and sorghum is an emergency food in parts of southern Tanzania because it can be stored for a long time. In several old publications it was recorded that amongst the Maasai, honey was the main food of the warriors when they were on hunting excursions. Only young children would normally eat honey, whilst old men would eat brood (Fischer, 1993).

On the other hand Marigat (2004) argued that beekeeping is a good source of income and food to rural communities. Honey could be used as part of food security programme when facilitated well through funding and training to community groups interested in beekeeping projects. Citing Tukum women development group in Pokot Kenya that received a grant of 150 beehives, Marigat said the project is expected to provide food and income to women and youth in the village resulting from surplus income from honey being sold. "These women belong to the Pokot tribe, they are among the poorest ethnic groups in Kenya, the environment in which they live is hostile, eroded by the daily sun and wind and when it rains the community is inaccessible" (Marigat, 2004). These people's lives are expected to improve as a result of the beekeeping project in their area. Beekeeping has been proved to be supportive to the rural poor to secure themselves and their families from hunger and send their children to school using the extra income from honey sold.

Beekeeping is a good example of a project that uses natural resources in a sustainable manner. Bees are probably the best natural pollinating agents for trees, shrubs and grasses. Also there is a connection between beekeeping and watershed protection, soil conservation, and biodiversity conservation in a long run.

### **(iii) Beekeeping Techniques**

The use of different hive types however has their pros and cons. For example the use of open colony is of low cost, in terms of investment capital because these are natural hives created by bees themselves on caves or trees in the forest. Another advantage is that the management of these hives is simple and they are difficult to steal . On the other hand yields from these types of hives are relatively low and mostly with unripe honey. Also open hives could easily be invaded by invaders such as animals, human being, insects and

other bee enemies. During the rainy season it is also easy for rainwater to get in the hives and cause bees to abscond.

The use of log hives provides protection of bees from invaders such as animals, insects, rainwater and other bees' enemies. Log hives' yield potential is also high. The disadvantage with this type of hive is the high initial cost. It is also attractive to thieves and bees tend to abscond. Kenya Top Bar Hives (KTBs) have higher yield potential and as opposed to log and open hives, honey combs here are recyclible because of the use of frames in hives. Furthermore With KTB hive, bees are protected against external elements and invaders. The negative features with KTB almost are similar to those of log hives. They involve high cost especially the initial investment capital. Also they are attractive to thieves and bees tend to abscond. Different from log and open hives KTB hives are complex to manage.

#### **(iv) Beehives Technology in Africa**

Frame hives are being used successfully in North Africa and also in South Africa. They are and have been used intermittently throughout Africa with varying degrees of both success and failure. In Tanzania frame hives were promoted in 1960s but despite the extensive work with experts from the Forest Department there is no significant use of frame hives in the country remaining.

In Kenya, enthusiasts mostly hobbyists have used frame hives successfully over many years but on a very limited scale and today there is virtually no frame hive except for one outfit Honey Care International that is endeavouring to promote Longstroth frame hives. In Rwanda and Burundi Longstroth frame hives have been used to some good advantage and produce excellent honey. There are good tamer in Rwanda and Burundi but even so the use of frame hives are still limited (Paterson, 2000).

Oliver (2000) refers to KTB hive as a very productive hive in Africa in which most places are temperate. Oliver however insists on move forward from KTB hive to Longstroth hive which is more sophisticated, most reliable and most recommended worldwide. Beekeepers must make a step forward by adapting Longstroth hives for sustainability since honey extracted from Longstroth hives is of the best quality in the world market. The use of Longstroth hives will therefore guarantee exportation of the honey to international market and hence improve the livelihood of the farmers. Oliver however, recommends for effective use of local available skills of the indigenous people to make the Longstroth hives so as to reduce investment cost. Also training of the farmers on how to effectively utilize the new beekeeping technology (use of Longstroth hives) is essential for best results. This will eliminate the absconding problem that is a daily cry by the African beekeepers.

### **3.3 Empirical Literature Review**

In Tanzania beekeeping plays a major role in socio-economic development and environmental conservation. It is a source of food (e.g. honey, pollen and brood), medicine (e.g. honey, propolis, beeswax, bee venom), raw materials (e.g. beeswax candles and lubricants) and source of income for beekeepers. Beekeeping employs about 2 million rural people and estimated to generate about US\$ 1.7 million each year from sales of honey and beeswax (Mwakatobe, 2005).

Approximately 95% of all the hives in the country are traditional including log and bark hives and this account for 99% of the total production of honey and bees wax in the country (Kihwele, 1991). During colonial and early independence period the production of bee products was higher than what it is today and was an important non-wood product from forests with higher contribution to the national Gross Domestic Product (GDP). In

1950s honey was estimated at an annual average production of 10,000 tons, all consumed locally. After independence Tanzania exports averaged 368 tons of beeswax and 467 tons of honey per year. In the year 1996/1997, the country exports totalled to 359 tons of beeswax and 2.46 tons of honey worth US\$ 1,019,020 and US\$ 2058 respectively (Kihwele, 1991). The Customs department, 1997, Kihwele and Bradbear, 1989, TFAP 1988, and Mlay 1997, estimated that the production of bee products could increase by 50% if its potential is optimally utilized.

It is estimated that Tanzania has about 9.2 million honey colonies where production potential of bee products is about 138,000 tons of honey and 9,200 tons of beeswax per annum (URT, 1998). These are worthy US\$ 138,000 million and US\$ 18.4 million, respectively (using average prices of the year 2003, i.e. US\$ 1 per kg of honey and US\$ 2 per kg of beeswax) (Mwakatobe, 2005).

The beekeeping policy (URT 1998), estimates the current production level of beekeeping sector of Tanzania is only about 3.5% of the actual potential, which is mainly from apiaries managed by individual beekeepers or organized beekeepers economic groups. The bee colony productivity is dependent on the following factors: size (volume) of the hive; amount of bee fodder (bee forage) available within the vicinity of the apiary, protection of colony against damage - by fire, honey badger (*Mellivora capensis*) and other pests.

According to Seegeren (1996), showed the export of honey in 1984 was 270,000 tonnes of which 60% came from the tropics. The prices varied between US 0.7 and 2.4 per kg. Bees wax which is used in cosmetics, candles, batik , bee combs foundations, medicines and polishes, had a good and stable markets.

**(i) Bee keeping Resource Potentials in Tanzania**

Tanzania is endowed with favourable environment for production of honey, beeswax and other bee products. The country has about 33.5 million hectares of forests and woodlands that are scattered throughout the country and are ideal for developing beekeeping industry approximating to 20.5million hectares out of this area are unreserved forests and woodlands, while 13 million hectares of forest and woodland have been gazetted as forest reserves. More than 80,000 hectares of the gazetted forest reserves consist of forest plantations that are also suitable for beekeeping. The mangrove forests of mainland Tanzania that covers about 115,500 ha are also valuable as bee fodder. High potential for beekeeping is also found in agricultural land where substantial bee products can be harvested from agricultural crops e.g. sunflower, green beans, coffee, coconut and sisal. The presence of both stinging and non-stinging honeybees coupled with existence of indigenous knowledge in beekeeping is also a great potential (Mwakatobe, 2005).

**(ii) Contribution of Beekeeping to the Economy**

Beekeeping in Tanzania plays a major role in socio-economic development and environmental conservation. It is a source of food, (e.g. honey, pollen and brood) raw materials for various industries (e.g. beeswax, candle, lubricants), medicine (honey, propolis, beeswax, bee venom), also source of income for beekeepers and other business people. (URT, 1998). Mwakatobe and Mlingwa (2005) estimated that beekeeping sector generates about USD 1.7 million each year from sales of honey and beeswax. It employs about two million rural people. It is an important income generating activity with high potential for improving incomes, especially for communities living adjacent to forests and woodlands. Latham (2000) described that beekeeping is a good and useful source of supplementary income to farmers to cutter for expenditures like school fees for kids,



medical expenses for the family and other socio-economic costs in life. This hence speeds up people's development

Beekeeping contributes a lot in development when properly managed and seriously taken as an economic activity in a specified area. Beekeeping can therefore change people's life socially and economically when introduced to a community with proper training and facilitation

### **(iii) Beekeeping Activities and Gender in Tanzania**

(Lalika, 2008), in his study to the southern Tanzania found that beekeeping activities involved both genders at different stages of honey and beeswax processing and marketing. Traditionally, men are responsible for honey harvesting which is normally carried out at night because they are scared of honey bees during the day. In Milola and Kinyope villages in Tanzania, division of labour was evident (Lalika, 2008). While men specialize in the construction of hives and honey harvesting, women are involved in carrying unprocessed honey from the forest to homesteads. The dominance of men in beekeeping activities in the Milola and Kinyope villages in Lindi rural seemed to have downplayed the role and contribution women have made with respect to managing bee reserves and habitats, harvesting of crude honey, and the processing of bee products (Lalika, 2008).

Smallholder beekeepers in Tanzania have rich indigenous knowledge of beekeeping. They also have good knowledge of different types of hives, bee smokers and honey containers. Beekeepers also have rich knowledge on suitable microhabitats to hang their bee hives and even the tree which are favourable for hanging bee hives. In terms of hive types, it was found that most smallholder beekeepers use local style gourd hives. The reason is that they are cheaper than other types of hive and are locally available (Lalika, 2008).

**(iv) Beekeeping Experience from Njiro Wildlife Research Centre (NWRC)**

NWRC is the only institute in Tanzania with responsibility for research on bees and functions as a centre for appropriate technology and information on tropical apiculture (Bradbear, 2006). NWRC occupies an area of 23 ha, out of which 70% is reserved as unique Acacia forest, where honeybee colonies are maintained in 13 small apiaries. Apart from the main apiary at Njiro, the Centre also has two field stations in different ecosystems: Mount Kilimanjaro (West) and Rift Valley (Magugu). Beekeeping in these areas protects the land from degradation and provides income to the people at the same time through the sale of beekeeping products (Ibid). NWRC insists that beekeeping for income generation and environmental conservation is possible especially when appropriate technology is employed. Also this centre reserved acacia forest for its beekeeping project; this implies that in the study area in Bagamoyo where acacia trees are indigenous in the area, beekeeping is very potential.

**(v) Beekeeping Experience in Pemba Island**

In Pemba Island, there has been a long time tradition of beekeeping for particularly in combination with clove production; since clove honey commands high prices and is in high demand in Oman. However, honey production has recently declined due to the decline of clove industry resulted by the competition from Indonesia. Regardless of this competition from international market, still the demand for clove honey in Pemba exceeds its actual supply. This calls for a need for improving beekeeping in the area so as to take advantage of the available market.

Ellman (2000) observed that steps taken to raise the quantity and quality of clove honey production would not only increase rural incomes with relatively little investment but also give farmers an incentive to improve clove plantations in Pemba. The challenges for

small-scale beekeepers are on the choice of the appropriate hive type to use in terms of cost, productivity and manageability. Other constraints are selection of optimal colony management and honey harvesting techniques and also improved procedures and channels for marketing honey and other bee products.

Most of bees in Pemba are kept traditionally in open colonies up to 1.5m long with combs drawn down from the branch of a tree and minimal protection against wind, rain and invaders (particularly ants). Some farmers use Kenya Top-bar hive (KTB) and log hives (Ellman, 2000).

#### **(vi) Beekeeping Experience in Ethiopia**

According to Paterson (2000), statistics available for Ethiopia between 1980-1983 shows that Ethiopia was producing a first class honey and yields were increasing from year to year. The apiaries in Ethiopia are in group ownership with up to 40 Zander frame hives per apiary and with average yield of 20 kg of honey per hive. In 1980 Ethiopia harvested 30 hives with a total yield of 914kgs of honey at an average yield of 30kgs per hive. Between 1981 and 1982 the hives harvested were 112 and 138 with a total yield of 1,823 and 2,694 kg; and with average yield ranging from 16 to 19 kg of honey respectively. For the year 1983 the country harvested 241 hives that gave a yield of 4,637 with an average yield of 19 kg of honey per hive.

#### **Beekeeping Experiences in Democratic Republic of Congo**

Honey hunting has been a traditional activity in Bas Congo, as in much of Africa. Modern beekeeping technologies were introduced in 1980s. Christian Aid Organisation funded training to the villagers near Mbanza Nzundu in the Bas Congo region. This was followed by villagers adoption of beekeeping technology and by 1990 there were nearly 400 beekeepers each with a hive; producing an average honey surplus for sale of 7.3kg per year.

In the year 2000 Bas Congo had over 1000 beekeepers with an estimated production of 14 tons of honey per year. Some villagers possessed up to 40 KTB hives, while the majority had one or two KTB hives. The money obtained from sale of honey was a significant supplementary household income (Latham, 2000).

It was not uncommon to find up to ten hives in a hectare of forest yielding from 50 -100 litres of honey per annum in which in the year 2000 it was selling at USD 2 per liter. Latham also adds that, beekeeping is worthy especially when villagers are committed with the project. Beekeeping can act as a useful supplementary income and cutter for most necessary socio-economic expenses. However it is the reality that external assistance is essential at the initial capital investment due to the poverty situation of the rural people.

#### **(vii) Beekeeping Experience in Kenya**

Honey Care Africa Limited (HCA) in Kenya has demonstrated the important links between environmental conservation, poverty reduction and beekeeping. It gives emphasis that beekeeping is an appropriate enterprise in many parts of rural East Africa because the vegetation and climate are near perfect for the activity. HCA was established in 2000 as a private company in Kenya with a 'tripartite' agenda: to simultaneously generate economic, social and environmental value through beekeeping. HCA mobilized the communities across Kenya by training them on modern beekeeping technology using Longstroth hives. The communities were facilitated to acquire loans from donors to buy the pine wood Longstroth beehives produced by HCA. The company guaranteed to buy all the honey produced by the communities on a fair price by paying cash on the spot on delivery of honey. Honey Care helped to establish 14,000 hives across Kenya, and about 2,500 small-scale subsistence farmers in villages in Kenya were involved in beekeeping (UNDP, 2004).

It was estimated that with four hives and about 15 minutes of work every fortnight, most of the farmers are able to earn an income of around US \$ 250 per annum - an amount that often makes the difference between livings above or below the poverty line. Honey Care Africa Ltd has succeeded to use beekeeping for environmental benefits. The company has now embarked on an intensive tree/beekeeping program called Bees for Trees as a more attractive and sustainable enterprise than cutting down trees for charcoal burning in areas where these activities are common.

### **3.4 Policy Review.**

#### **(i) The National Beekeeping Policy**

The Government of Tanzania developed the National Beekeeping Policy (NBP) in 1998. The overall goal of the National Beekeeping Policy is to enhance the contribution of the beekeeping sector to the sustainable development of Tanzania and the conservation and management of its natural resources for the benefit of present and future generations. NBP encourages active participation of all stakeholders in establishment and sustainable management of bee reserves and apiaries, promoting beekeeping-based industries and products and promoting sustainable management of beekeeping in cross – sector areas for ecosystem conservation and management. To enable effective implementation of the NBP, two instruments have been put in place which is the national beekeeping Act and the national beekeeping program.

#### **(ii) The National Beekeeping Program**

The National Beekeeping Program (NBKP, 2001) is an instrument designed to put into practice the NBP with emphasis on stakeholders' participation in the planning, management, ownership and sustainable utilization of bee resources for poverty eradication, improved biodiversity development and environmental conservation. The

program has three sub programs including Beekeeping Development Program, Legal and Regulatory Framework Program and Institutional and Human Resources Development Program.

**(iii) The Beekeeping Act No. 15, (2002)**

The Beekeeping Act no 15 of 2002 was enacted by parliament in April 2002 with the following main objectives (i) To make provisions for the orderly conduct of beekeeping (ii) To improve the quality and quantity of bee products (iii) To prevent and eradicate bee diseases and Bee pests and (iv) To improve revenue collection. The Beekeeping (General) regulations of 2005 apply in relation to the keeping, hunting, storage and business in apiary products or bee products. Special attention is given on (i) Beekeeping and gathering of apiary products or bee products (ii) Quality assurance and standards (iii) Movement of apiary or Be products or beekeeping appliances (iv) Restrictions in Bee reserves (v) Licence and permits (iv) Export of apiary or bee products (vii) Import standards for apiary or bee products. Guidelines for Quality assurance of Bee products in Tanzania of June 2007:- produced by the Forestry and Beekeeping Division in accordance with part iii, of Beekeeping General Regulations of 2005 to guide beekeeping staff, beekeepers, dealers and other stakeholders on quality assurance of bee products.

The National Forestry Policy of 1998, Provides opportunities for beekeepers to practice beekeeping in all categories of the forest reserves and on public land. It creates an enabling environment for beekeepers to practice beekeeping in the forests as an incentive for the conservation of the forest resources.

**(iv) Wildlife Policy of Tanzania, 1998**

Beekeeping activities are encouraged to be carried out in Wildlife Management Areas (WMA) by involving local communities. With special permission from the Director of

Wildlife beekeepers are allowed to carry out beekeeping in game reserves and game controlled areas.

**(v) Village Land Act, 1999**

The Village Land Act 1999 is one of the most important legislative texts that support community based natural resources management (Wily, 2003). It empowers the community at local level (village) to recognizing it as the appropriate representative structure to implement natural resources management. In view of this, through village land use management system beekeepers can be allocated land for beekeeping development. The main challenge now is to use this enabling environment created by the Policy, Program and legal framework to encourage Tanzanians and other investors to take up beekeeping so that they can benefit in terms of income, poverty reduction and conservation of environment.

**(vi) National Strategy for Growth and Poverty Reduction (NSGRP)**

NSGRP addresses cross cutting issues especially environment, income generation and poverty reduction. The strategy emphasizes that; poverty, environment and natural resources destruction has a clear link. Such cross cutting issues magnify the causes or manifestation of poverty (URT, 2005). Beekeeping could be used as a means to address these cross cutting issues since it will reduce poverty, conserve environment and prevent natural resources destruction like deforestation.

**(vii) The Rio de Janeiro Conference on Environment and Development**

According to UN (1992), forests are an integral part of sustainable development and are essential to many indigenous people and other forest-dependent people practicing traditional lifestyles, forest owners and local communities. It also adds that, all aspects of

environmental protection and social and economic development as they relate to forests and forest lands should be integrated and comprehensive. These statements imply that conducting beekeeping project in an area would mean sustainable development of forests and hence social and economic development of the people. This is due to reality that, forest conservation and management is one of the major roles of beekeepers in trying to maintain bees' forage.

#### **(viii) Millennium Development Goals (MDGs)**

United Nations describes that by the year 2015, all 191 United Nations Member States have pledged to meet the eight-millennium development goals. Among these goals to be achieved, goal number two reads; 'eradicating extreme poverty and hunger' and it focus on reducing by half the proportion of people living on less than a dollar a day and also reducing by half the proportion of people who suffer from hunger. Goal number seven advocates environmental sustainability, and focuses on integrating the principles of sustainable development into country policies in order to reverse loss of environmental resources. Conducting beekeeping projects in communities will mean participating in attaining the MDGs mentioned above at village and national level at large. Beekeeping can contribute to poverty reduction and conservation of environmental resources and hence changing lives of the poor.

### **3. 5 Literature Review Summary**

From the literature review, it has been noted that beekeeping has the potential to help many people to increase their income and crop yields as very little space is needed, beekeeping is ideal for people who have no land and little space and little money. On the other hand beekeeping has many attractions in rural farmers, it is cheap and it does not involve mass feeding of bees, because the insect can provide their own food all year



round. Bees do not require daily attention and beekeeping does not take up valuable land and time, which could be having been spent on other farming activities. Male and females of all age groups can practice it and it help to create self reliance. Generally through beekeeping communities are empowered to utilize the available natural resources for local economic development on a sustainable basis. Studies have revealed that the beekeeping sector has generally not provided a pathway out of poverty, however, in areas where there are little or no alternatives sources of income; beekeeping does play a vital role in preventing households from sinking deeper into poverty. This project will contribute to the improvement of the household income through utilization of the potentials natural resources available in the village. Beekeeper will be facilitated with the appropriate knowledge and skills to enable them practice profitable beekeeping so help increase family income.

## **CHAPTER FOUR**

### **4.0 PROJECT IMPLEMENTATION**

#### **4.1 Introduction**

Participatory assessment conducted early in February , 2011 where both quantitative and qualitative method were used during data collection ended up by the community identifying and prioritizing the low household income as main grinding problems in their community which is leading to poverty that is facing the community and hence the need to address it. Through participatory approaches, participants agreed to plan a project where income generating activity (IGA) groups would be trained on modern beekeeping and entrepreneurship skills.

This priority reflected the host CBO strategic plan which among other activities is to support group members with relevant skills and technologies. In connection to provision of trainings, there was a need to help the villagers secure the permanent place where they could use for beekeeping in the village. However, in order to increase quality of the products, honey will be processed and packed in well labelled containers to add value of the products. This was found to be more applicable as respondents acknowledged that beekeeping is among economic activities that is not doing well. Jiendeleze group has been supported with the training and technical knowledge on honey handling and marketing to ensure that it benefits from the honey industry in the village.

#### **4.2 Outputs and Products**

During the project implementation period it was expected to achieve the following project outputs and products

#### **4.2.1 Project Outputs**

- (i) The 32 Beekeepers Group Members trained on modern beekeeping and an entrepreneurship skill as well as bee hives fabrication by July 2011.
- (ii) To facilitated beekeepers secure a safe and sustainable place for beekeeping activities in the village

#### **4.2.2 Project Products**

The important project product is the improved community livelihoods in due to the introduced beekeeping initiative. This would be realized through sale of honey, bees wax, propolis and other bee products. In addition to that members would be trained and have modern entrepreneurial and business skills which would enable them expand the business venture and also become creative and innovative.

#### **4.3 Project Planning**

The project was planned to be implementation from February to December 2011 as it is seen in the Gantt chart. This is the time the researcher was implementing the project together with the community. But the project continued to be implemented by the villagers who were led by the Village Natural Resource Committee and beekeeping group members to implement the forest management plan and forest by law which were prepared by the villagers for sustainable management of their forest.

The project plan is summarized in the project implementation matrix which showed the project objectives, project activities, time frame, required resources and the responsible person.

**Table 20: The Project Implementation Plan**

Objectives	Activities	Project Month (2011)										Resources Needed	Person Responsible
		2	3	4	5	6	7	8	9	10	11		
Awareness created in Mihima Village on Community based beekeeping management by April 2011	Activity 1.1 Conduct one sensitization meeting to Mihima village Government on Community based beekeeping management.											Flip Chart Marker pen	The Researcher  The supervisor and student
	Activity 1.2 Conduct meeting with beekeeping stakeholders to create awareness on community based management.											Flip Chart Marker pen	
Beekeeping group of 32 people formed in Mihima village and trained by July 2011	Activity 2.1 Conduct one meeting for beekeepers in Mihima villa											Flip Chart Marker pen	The Researcher, VG chairperson  The Researcher
	Activity 2.2 Train Village beekeeper group members in modern beekeeping skills											Flip Chart Marker pen, pens Note books	

Develop agreement with the village government to allocate a place for beekeeping activities and to use the village land forest reserve for beekeeping	Activity 3.1 Conduct meetings to agree on the use of the Village Land Forest Reserves for beekeeping										Flip Chart Marker pen	The Researcher VNRC, Jiendeze group
	Activity 3. Facilitate securing of the new area for keeping activities.											The Researcher
	Project activities monitoring and evaluation.											

**Source: Field Survey 2011**

### 4.3.1 Project Implementation Plan.

The project was implemented as indicated following the sequence in the table 21.

**Table:21 Project Implementation Plan**

SN	Implemented Activities
1.	Conduct one sensitization meeting to Mihima village Government on Community based beekeeping management.
2.	Conduct meeting with forest stakeholders to create awareness on community beekeeping forest management.
3.	Conduct one village general meeting to create awareness on community based beekeeping management.
4.	Conduct one village general meeting to form beekeeping group
5.	Train Beekeepers I Mihima village on their modern beekeeping and best practices.
6.	Conduct participatory Beekeeping resource assessment in the Village Land Forest reserve.
7.	Review of the Forest Management plan based on forest assessment results.
8.	Facilitate approval of reviewed Village Land Forest reserve management plan by village general assembly and Lindi district forest officer.
9.	Facilitate the amendment and approval of forest bye - laws based on forest management plan.

**Source: Field Survey 2011**

**Table 22: The Project Log Frame Matrix**

	Intervention logic	Objectively verifiable indicator	Source of information	Important Assumptions
Project Goal	Sustainable Community Based Modern beekeeping Established in Mihima Village and is contributing to the improvement of the livelihoods of community members.	Livelihood of beekeepers improved by end of year 2011 Improved livelihoods of household by end of 2011	Interview of the beekeeping group members. Interview the community members.	The village will effectively put in to practice the forest management plan and forest by laws.
Overall Objective	Community based modern beekeeping management initiated in Mihima Village by July 2011.	Secured area for beekeeping Number of beehives with bee colonies	Interviewing Mihima Village Government and beekeeping groups. Reports	The Community will adopt Community based forest management practices after they have understood.
Objective 1	Beekeepers awareness on modern beekeeping rose July 2011.	10 awareness creation meetings conducted by July 2011. Village Government and community members can explain the meaning and benefits of CBFM by July 2011.	Interviewing community members and VG members	The community will clearly understand the Community Based Forest Management Practices after awareness creation meetings.

Objective 2	Establish and train beekeeping group members on modern beekeeping by July 2011	One village natural resource committee of 20 people formed by July 2011.	Interview community members.	The elected people will volunteer to take all the responsibilities which are required to be done by the village natural resource committee.
Objective 3	Review the VLFR management plan and bye laws July 2011	Presence of Forest Management plan which is in use by July 2011.	Review village documents	Local people who have knowledge on beekeeping are will to give the information
Activity 1.1	Conduct one sensitization meeting to Mihima village Government on modern beekeeping	One sensitization meeting conducted.	Training report prepared by Village Government. Meeting minutes	The village council members will attend the meeting.
Activity 1.2	Conduct meeting with forest stakeholders to create awareness on community based modern beekeeping management.	One meeting convened.	Meeting minutes kept in Mihima village office.	The stakeholders invited will all attend the meeting.
Activity 1.3	Conduct five sub village meeting to create awareness on community based forest management.	Five sub village meetings conducted.	Minute for village general meeting.	The villagers will attend the meeting.



Activity 2.1	Conduct one Village assembly meeting for beekeeping group formation.	One meeting beekeepers convened.	Minutes of the village assembly.	The community members will attend the meeting.
Activity 2.2	Train beekeeping group members on modern beekeeping skills.	Modern Beekeeping skills training conducted	Training reports Interview beekeeping members.	The Village Natural Resource Committee will attend the training.
Activity 3.1	Review of management plan to incorporate beekeeping activities	Reviewed the forest management plan is in place and use	Interview the village VNRC members	The village will identify the areas to be used for beekeeping.
Activity 3.2	Facilitate the preparation beekeeping bye laws based FMP.	Beekeeping bye laws in place and in use.	VNRC records, Interview the community member	The community will participate on the preparation of forest bye - laws.

**Source: Field Survey 2011**

### 4.3.2. Project Inputs

Table 11; bellow shows the actual cost involved in running the project. The project has a total budget of Tshs 1,700,000/=. The contributors for the budget were the researcher, village government for Mihima village and Lindi district council

**Table 23: Project Inputs and Budget**

SN	ACTIVITY PLANNED	BUDGET	SOURCE OF FUNDS	REMARKS
1.	Conduct one sensitization meeting to Mihima village Government on Community based beekeeping management.	175,000/=	Researcher	Bus fare and soft drinks
2.	Conduct meeting with forest stakeholders to create awareness on community beekeeping forest management.	100,000/=	Researcher	Stationery
3.	Conduct one village general meeting to create awareness on community based beekeeping management.	10,000/=	Mihima Village Government	Advertisement ( Mgambo)
4.	Conduct one village general meeting to form beekeeping group	10,000/=	Mihima Village Government	Advertisement ( Mgambo)

5.	Train Beekeepers in Mihima village on their modern beekeeping and best practices.	500,000/=	Researcher	Stationery, meals and bus fare
6.	Conduct participatory beekeeping resource assessment in the Village Land Forest reserve.	250,000/=	Mihima Resercher	Transport, Meals, Stationery, hiring equipments
7.	Review of the Forest Management plan based on forest assessment results.	300,000/=	Mihima Researcher	Stationery
8.	Facilitate approval of reviewed Village Land Forest reserve management plan by village general assembly and Lindi district forest officer.	105,000/=	Mihima Researcher Lindi district council	Transport
9.	Facilitate the amendment and approval of forest bye - laws based on forest management plan.	250,000/=	Researcher	Stationery and Transport
<b>TOTAL BUDGET</b>		<b>1,700,000</b>		

**Source: Field Survey 2011**

### **4.3.3 Staffing Pattern**

The project did not require staff; communities were required to form a group of at least 20 people in a voluntary but participatory way as all villagers were involved during awareness creation meetings. The group will pioneer the beekeeping activities in the village and implementing the beekeeping management activities. All villagers were required to participate in activities regarding forest protection, and management and utilization as directed by forest management plan which were prepared by the village

### **4.3.4. Project Actual Implementation**

This section provides a description regarding the actually implemented project activities. The activities which were implemented were mostly those planned before.

(i) Community Based beekeeping Management established in Mihima village

Twenty (20) modern beehives has been mobilized and strategically set in the village land forest reserve. The beehives were mobilized by the group members by agreeing each member to contribute one bee hive to the group. Apart from that the group members who are knowledgeable on making local bee hives from the left over of the dead logs from the forest. Group members also contributed Tsh 10,000 to facilitated fabrication of the bee hives. The fund was used to purchase nails paints and to pay for the carpenter who also were trained to fabricate the bee hives.

The researcher managed to conduct various meetings with village government to brief them on CBBM and the relation with forest management. The meetings were conducted to various stakeholders such as village government, other forest users and to the bee keeping group members. In order to reach many people in the village, sub village meetings were organized and conducted to create awareness on beekeeping in the village.



Traditional methods for harvesting honey are destructive to the environment.



Beekeepers inspecting their      Researcher inspecting a beehive at Mihima village Bee hive

(ii) Awareness created in Mihima village on Community Based Forest Management by  
July, 2011.

During training and awareness creation meetings people were informed on basic concepts of Community Based beekeeping Management (CBBM) and secondly it's planning process. After training and sensitization the community was comfortable with the meaning of CBBM and Participatory Forest Management, processes for initiating CBBM and Legal basis for CBBM. The understanding of the community on CBBM enhanced their participation on project implementation. Villagers were also informed on the market and demand for the honey in the country as well as the potential for beekeeping in the country,

International markets for the bee products were also presented during the training and awareness creation meeting. Specifically, the following meeting were conducted in the Mihima village;

- (i) Conducted one meeting with forest stakeholders to create awareness on community based beekeeping management.
- (ii) Conducted 5 sub village meetings to brief the community on CBFM and CBBM
- (iii) Beekeeping group of 32 people formed in Mihima village and trained on beekeeping practices

The group is composed of 24 men and 8 women. Members were trained on modern beekeeping management. Other training offered included; Forest Management basic concepts, legal basis for CBBM ( Policy and beekeeping laws), advantages of CBBM to the communities, the CBBM planning process the roles and responsibilities of VNRC in relation to the beekeeping groups. The beekeepers were also trained on bee suitable forages habitats which supported them to allocate suitable areas during resource assessment inventory. Apart from training the beekeepers members, two carpenters and tailors from the village were trained in fabrication of the bee hives and tailoring of the bee gloves and bee suit. This was important to ensure that bee hives and beekeeping gears can be obtained in the village. It was also a means of creating employment opportunities in the village.

After the trainings the group members demonstrated the sense of ownership of the project and were committed to make sure that they achieve their objectives of increasing household income. As the group members became active in beekeeping activities, it was learn that more people now are building interest to join the bee keeping activities in the village. Specifically the training was offered as following;

- (iii) Conducted one Village General Meeting to encourage villagers to voluntarily form beekeeping groups from any member of the community.
- (iv) Trained beekeeping group members on the basic concepts of beekeeping practices and also trained carpenters on the modern bee hives and other beekeeping gears fabrication.
- (v) Management Plan for Mihima Village Land Forest reserve reviewed to guide on Village Land Forest reserve management and beekeeping management by, June 2011.

One of the important activities to be conducted by the project was to review the village land forest management plan. It was important activity because the village started the management of the village land forest reserve since 2000, during the UTUMI project. By that time it was expected that beekeeping will be implemented in the village land forest reserve. However, UTUMI project phased out before accomplishing its objectives. The management plan for the village land forest reserve did not include beekeeping component. However, the beekeeping group thought it is important if the beekeeping will be practiced in the village land forest reserves as they believe it will add value to the forest management. The review of the management plan involved incorporating the beekeeping component in the village land forest reserve and also amending the bye laws to allow for the beekeeping to be practiced smoothly. The following activities were implemented and accomplished as indicated below.

Researcher and in collaboration with beekeeping members conducted participatory beekeeping resource assessment in the Village Land Forest reserve. This involved visiting the village land forest reserve with experienced traditional beekeepers from the village to

Identify suitable areas for the apiary. Before the visit, it was agreed that the areas should be far away from the village and from the cashew nut farms. This was important to avoid contamination of the honey with chemical used to protect crops such as cashew nuts. Also villagers were advised to produce organic honey which can catch the market easily.

The Researcher in collaboration with the beekeeping members identified suitable area for beekeeping management within the village land forest reserve which meets the beekeeping qualities to avoid hazards such as forest fires. Group members prepared fires breaks and also set thorns and tree branches around the trees where the bee hives were hanged to avoid honey burgers.

The Participatory beekeeping Resource Assessment (PBRA) was conducted to provide information about areas suitable for beekeeping in the forest. The forest management plan was reviewed to guide the villagers in managing the forest and beekeeping in the village land forest reserve, bye - laws were amended to facilitate the implementation of beekeeping in the village land forest reserve. The Village Natural Resource Committee represented the villagers in bee resource assessment exercise and in reviewing of the management plan and amendment of the bye laws.

### **(ii) Forest Management**

The forest was protected by the villagers themselves. All villagers are responsible to protect the forest and inform the village government, Village Natural Resource Committee and village patrol team of any illegal actions observed in the forest. In addition there was a team of 6 villagers that will be responsible in patrolling the forest and provide a patrol report to the village government and Village Natural Resource Committee. The team was elected in the village general assembly and works for three years after which another new



team will be elected to resume the work. The team shall compose one patrol commander, two members from VNRC, one other community members, one members from beekeeping group and one community member who clearly no the forest boundaries

Fire breaks were cleared between the forest and the farms and are supposed to be clean throughout the dry season (from May to November) to protect the forest from fire whose sources are said to be from farms around the forest. Beekeepers were tasked to ensure that there is no forest fire starting from the areas where they changed their hives. They have also prepared fire breaks to all areas where bee hives are set within the forest to prevent forest fires from destructing their hives. It is a responsibility of any villager to report to the village authority in case he/she find forest fire; this also requires all villagers to participate in putting off fire in case it catches the forest reserve. Villagers were alerted to make sure that they control fires when cleaning their farms.

On the other hand beekeepers have been blamed for bad practices which lead to the destruction of the forest. Such practices include; using fire during honey harvesting which if not taken care may lead to forest fire. Therefore it is important to include beekeepers in the management of the forest so that they can instead help in management and monitoring of the forest during daily operations. Beekeepers will support the management of the forest by informing and preventing any illegal activities in the village land forest reserve. Beekeepers are important stakeholders of the forest resources as it is a source of bee forage. Any destruction in the forest will mean affecting bee keeping activities which will lead to poor performance of the beekeeping in the village.

### **(iii)Forest Products Utilization**

Apart from the beekeeping, the management plan identified sustainable forest utilization activities in the villages, tree species which were found to be very few in the forest during

the assessment namely “Mbambakofi”(Afzelia quazensis), ‘Mvule”(Miltea excelsa), “Paurosa (Swartzia madagascarensis)”,” were not supposed to be harvested for any product to allow their regeneration in the forest. However it was allowed to hang the beehives over them. The community allowed the utilization of forest products from other tree species which were found to be enough in the forest. The utilization should be in accordance to forest products utilization plan. The species include ‘Mseni” for fire wood, timber and rope, “Mtondoro” (Brastegya sp) for firewood, timber, rope and medicine,” for fire wood, “Mrama” (Combretum sp) for firewood and charcoal

**(iv)The Bye – Laws Amended by the Villagers**

This bye - laws were made under the local government Act No.7 of 1982 section 120(1) and 163 which was amended in 1992 and 1999. The aim of formulating the village land bye – laws is to enable facilitation of the management of the village forest reserve. The Villagers approved the following bye laws to meet the forest management objectives;

The general procedures for using the forest products

People who will be allowed to enter in to the Village Land Forest reserve for the forest management activities and other allowed activities will be Mihima villagers only. Other people outside Mihima village will only enter in to the forest by special permit from Village Natural Resource Committee if they will be having the activity which will be allowed in the forest. The villagers who are disabled, chronically ill, and too old people who are cared for themselves and are known by the community in the village for that matter are liable for receiving forest products from the forest for free upon the approval of their requests by village natural resource committee.

The forest products meant for domestic use that cannot interfere with the forest management like fruits, vegetables, mushroom, dry firewood, medicine, thatch grass for roofing and “Makalati” ( caterpillars collected in November during sprouting of the new leaves of miombo tree species) be allowed to be taken for free from the forest. Other forest products meant for business will only be allowed to be taken from the forest after payment has been made and special permit provided by village and harvesting will be done under supervision.

Conditions for utilization of the Village Land Forest reserve The utilizations that are allowed without permit or payments. The village approved hanging of beehives, Honey harvesting without using fire, Collection of dry firewood for home use, Collection of fruits, mushrooms, vegetables and thatch grass for roofing, and Going to the forest for sacred ceremonies. However, a person is required to report to the authority (VNRC) when wants to collect or make use of the fore mentioned activities in the village land forest reserve. This helps to make follow up in case any restricted use is found in the forest particularly fire. For honey harvesting, the harvesters are required to make sure that they do not cause fire in the forest. Use of the modern honey harvesting equipment was encouraged to avoid causing fire in the forest. Honey harvester they are required to report to the VNRC before starting honey harvesting. They must show date and time for harvesting so that the VNRC will be able to monitor their operations.

Villagers also approve utilizations which is allowed after the license has been issued and payments made to the VNRC. Activities that requires permits includes harvesting of poles, timber, collection of logs for bee hives making, conducting research in the village land forest reserve, camping in the forest and tourism and any other forest products collected from the forest for business.

The village assembly also approved prohibition of some activities in the village land forest reserve; farming within the forest, charcoal burning, grazing in the forest, harvesting honey by using of local methods (fire and felling of trees,) and setting fire in the forest for any reason with exception of early burning and scientific research purposes. Harvesting of trees with diameter below 150cm for timber and trees with diameter below 100cm for logs, and debarking of the trees for rope and bee hive making were also prohibited. A fine of Tsh 20,000 for offenders of the above bye law was set to make sure that the forest condition is improving as expected. Any assets which will be found to be used to violate the forest and forest products utilization together with the harvested forest products will be seized as Mihima village assets. In case any person refuse or fail to pay the set fines under this bye- law will brought to court. Any Village Natural Resource Committee member who will be involved with corruption of any kind shall pay a fine of Tsh 50,000= . It was also agreed that if the Village Executive Officer will not attend the bye - laws violators, then the violators will be sent to the Village Government and the issue will be sent to the Ward Executive Officer if also the village government failed to attend the matter.

Matters regarding issuing of permits, fines, penalties and decision on all matters concerning forest bye - laws will be the prime responsibilities of VNRC. The Village Government shall be the overall supervisor. The VNRC shall be the manager of the Village Land Forest reserve. The following conditions will apply:

The Village Natural Resources Committee members and any person who will capture or seize the illegal properties in the forest will be awarded 20% of the fine or penalty fee collected and the rest 80% will be deposited in to VNRC account; A numbered receipt must be offered for forest product sales, fees and penalties and seized assets or products.

Any villager or leader from Mihima village have the mandate to arrest any body found to violate the forest bye - laws and take him or her to either village government or VNRC for Mihima village.

It is the responsibility for all Mihima village resident to provide information on bye - laws violation to the village leadership.

The permits issued by the VNRC should bear a stamp for VNRC, and clarify the type of products allowed for harvesting, the place in the forest where the products are allowed for harvest, amount to be harvested and the time for harvesting. After the harvested products have been measured the permit should be returned to the Village Natural Resource Committee.

#### **4.3.5 Challenges that Faced the Project**

The project is at infancy stage and it has just started picking up after its inception. With this stages of project development challenges are inevitable the following challenges were learnt during the course f implementing the project

- (i) Lack of beekeeping knowledge. Preior to the commencement of this project, there were few villages which had indigenou knowledge and who were practicing beekeeping in the villages. Most of the villagers did not have have knowledge and also they were not practicing beekeeping. It took time to encourage villagers that bees can be kept and needs to monitored to determine their performance. This challenge was mitigated by conducting training and practices which enables beekeeping members to gain confidence and had adopted the beekeeping in the village.

- (ii) Accessibility to the village. The village is located in a remote area and in the mountains with poor road network. This made it difficult to access during the time of community needs assessment and also during project implementation. It was also learnt that after the project take off, the Beekeeping Officer, did not manage to make regular follow ups due to lack of transport and also distance from the district council. This challenge was mitigated by handing over the beekeeping project to WWF, coastal forest project, whereby they have been providing transport to the Beekeeping Extension Officer to reach the village on time.
- (iii) Beekeeping members also faced challenge in selling the bee products as they harvested about 40 litres of honey, which was a lot to be absorbed within the village market. The implication of this challenge is the need for exploring more markets outside the village boundaries and also to link the beekeeping members with exhibitions such as national beekeeping exhibition, Nane Nane exhibition and Saba Saba exhibitions. These initiatives will open up the market outlets for the beekeepers in the southern regions.
- (iv) Bee enemies were also reported to pose a challenge to the beekeeping activities in the village. The bee enemies identified included; Honey Budger, Bees wasps, ants and forest fires. To mitigate this challenge, beekeepers had to set thorns around the trees which the hives were hanged, also fire breaks were set around the bee apiary. Honey Burdger were reported in the earliest stages of the project development as one bee hive was destroyed by the Honey Budger.
- (v) Use of pesticide for cashew nuts. High quality honey needs to be produced from pesticide free areas. Mihima village is as many other villages in Lindi region is cultivating cashew nut. Cashew nut has been reported to use pesticides for boost production and control of diseases. This challenge was mitigated by

selecting a remote apiary in the middle of the Village Land Forest Reserve. This created environments which prevent bees from reaching the agricultural fields.

#### **4.4 Chapter Conclusion**

Community Based beekeeping Management has been initiated in Mihima community, The Participatory Forest Resource Assessment (PFRA) was conducted to know the situation of the forest, after which a Forest Management Plan and bye - laws were prepared to guide the village in protecting and managing the forest. Village Natural Resources Committee (VNRC) was formed and trained for them to be working as a forest manager in the village

**Table 24: Project Actual Implementation**

Activities	Months											Resources used		Remarks	
	1	2	3	4	5	6	7	8	9	10	11	12			
1.Introduction of the project to the Community														Beekeeping equipments and consultants	Completed
2.Conducting of beekeeping training to group members														Materials, facilitator, beekeeping materials	20 beekeeping members trained
3.Acquisition of apiary for project intervention														Slashers ,holes and pangas	work accomplished
4.Review of VLFR Management plan and by- laws														Funds, facilitator and community members	Accomplished
5.Mobilize beehives														Timber, funds, carpenters, nails, paints	Hives mobilized through members contributions
6.Setting of beehives at the apiary														Wires ,pangas, hives, beekeepers, expert	Apiary established
7.Hive inspection														Beekeepers	Conducted
8.Monitoring														Record keeping materials	Regular monitoring
9.Evaluation														Stationeries	will be implemented on due time

**Source: Field Survey 2011**



## **CHAPTER FIVE**

### **5.0 PARTICIPATORY MONITORING, EVALUATION AND SUSTAINABILITY**

#### **5.1. Introduction**

This chapter explains the Participatory Monitoring, Evaluation and Sustainability for the Community Based beekeeping Management project undertaken in Mihima village in Lindi region.

#### **5.2. Participatory Monitoring**

The participatory monitoring was conducted to measure the progress of activities against the original plan. It was done routinely to be able to keep the project implementation on track in order to realize the intended project outputs. During monitoring the project indicators and the achievement of the targets were traced. In addition to indicators and targets, work plan activities, cost and expenditures, products and results were also monitored. However, the researcher admits that the time for the project is very short for any project related to the conservation and utilization of the resources. Bee keeping takes at least three months before realizing the profit; this also depends on the weather and time of the year. It is therefore expected that the beekeeping project will start realizing income at least after six months from the commencement of the beekeeping practices particularly after hanging the bee hives.

##### **5.2.1 Project Monitoring Information System**

Table 11: shows the project monitoring information system. It shows the category of the information to be monitored and what should be monitored. It also shows record to be kept and who collects the information as well as how the collected data will be used and the appropriate decision to make on regard to data collected.

**Table 25: Project Monitoring Information System.**

Categories of information	What to monitor	What record to Keep	Who collects data	Frequency of information collection	Who use data	How to use information	What decision to make
1. Work plan Activities	CBBM awareness creation meetings conducted	Minutes	Researcher & VEO	Monthly	The researcher, VNRC	Reading and track the project progress, success and failure.	Proceed, review or replicate the project and approaches.
	Trainings on CBBM	Training reports and attendance	Researcher	Weekly	Beekeeping group members	Assess the rolling up of community based beekeeping management.	
	Train bee keeping groups on bee keeping practices and responsibilities	Training report	Researcher	Weekly	Beekeeping group members		
	Conduct forest inventory	Inventory report	Researcher & VNRC and Beekeeping members	Monthly	VNRC & beekeeping members	Assess the rolling up of community based beekeeping management.	
	Review forest management plan	Forest management plan document	Researcher & VNRC	Weekly	VNRC & beekeeping members		
	Amend the forest bye - laws.	The bye - laws which govern the forest management.	Researcher & VNRC		VNRC & Beekeeping members		
	2. Cost and Expenditure	Stationery costs	Activity expenditure report.	Researcher	Daily	Community (for transparency)	
Transport costs		List of participants involved in the		Community (for transparency)		Review or retain the	

Categories of information	What to monitor	What record to Keep	Who collects data	Frequency of information collection	Who use data	How to use information	What decision to make
		incurred costs.					budget.
	Meal costs	Expenditure against the budget.	Beekeeping groups		The Researcher CED program Stakeholders.		
	Printing Costs	Financial reports.					
	Forest survey costs	Expenditure against the budget.	VNRC, Researcher				
	Meeting costs	Pay rolls, list of participants					
3. Products	Community is aware with CBBM Forest reserve inventory status understood.	Progress report	Researcher VNRC	Monthly	The researcher VNRC	Reading and track the project progress, success and failure.	Proceed, review or replicate the project and approaches.
4.Results	Well managed beekeeping in the village. Income of the beekeepers improved	Progress report Income & expenditure statements	Researcher Beekeeping groups	Monthly	The researcher VNRC The researcher instructors	Reading and track the project progress, success and failure. Assess the rolling up of	Proceed, review or replicate the project and approaches.
	Uncontrolled fires are less frequent. Bee hive colonised with bees	VNRC reports VNRC reports	Researcher VNRC	Monthly	Researcher Beekeepers & VNRC	based forest management and beekeeping management	

Source: Field Survey 2011

### **5.2.2 Participatory Monitoring Methods/Tools**

Three participatory methods were applied in monitoring the project implementation. These were Semi-structured interviews, direct observation, Focus Group Discussion. These were treated as the primary source of data which were collected directly. Semi-structured interviews were used to collect information and we didn't use formal questionnaires, instead a checklist of questions related to project performance. It is a flexible tool which was none the less systematically used in order to produce valid results. Observation is a classical method of social science inquiry where eyes were used rather than ears in observing and noting the items like feeders, drinkers, equipments, vaccinations and drugs, chickens, and was recorded accordingly. Focus Group Discussion was applied by involving a small group of only 10 people in discussing issues related to project performance in detail and were allowed to talk freely and spontaneously about project issues. The CED student acted as a facilitator to keep the discussion on and to stop on an individual dominating the discussion. Secondary sources were also used which included review of existing literature like project progress reports (are key monitoring tools), project documents and other related materials. Data was processed to produce a report for presentation to stakeholders who participated in the monitoring process.

#### **(i) Sampling and Sample Size**

In this monitoring exercise non probability (deliberate/purposive) sampling was applied whereby Jiendeleze Group Executive Committee members were the major players while other players were the Ward Natural Resources Extension Officer and CED student for that matter these participants were involved in the monitoring exercise.

#### **(ii) Monitoring Findings and Results**

Information gathered during the monitoring process was raw hence had to be analysed. All

data and information on all project activities conducted as compared to what was planned was recorded in note books. Later the researcher used laptop to keep all the data and information collected during the monitoring process and compared different responses and information gathered. The data was used to see whether the planned activities of the project were going well and challenges encountered during implementation and what action should be taken to overcome those challenges.

### **(iii) Validity and Reliability**

Data collected were directly related to the project activities at Mihima village and the checklist was focused on the project. The summary of the monitoring findings outlined in the table below:

### **5.2.3 Participatory Monitoring Plan**

During implementation of the project activities monitoring was conducted. It is a surveillance system used by those responsible for a project to see that everything goes as nearly as possible to plan, and that resources are not wasted. It provides the management with information needed to analyse the current situation, identify problems and find solutions, discover trends and patterns, keep project activities on schedule, measure progress towards objectives, formulate future goals and objectives and make decisions about human, financial and material resources (CEDPA, 1994:52). It was important to conduct monitoring in order to ensure those different activities and that appropriate strategies and sequences of action are followed.

Thus monitoring was conducted in order to keep control if the project was on the right track, which enabled the project stakeholders to understand if human and non human resources were available as anticipated and were used effectively and efficiently during project implementation.

**Table 26: Summary of Monitored Project Activities**

Objectives	Planned activities	Activities implemented	Data Source	Method or tools	Person Responsible	Time Frame
1. Awareness created in Mihima village on CBBM.	1. Conduct one sensitization meeting to Village government on CBFM.	1.sensitization meeting was conducted to village government on CBFM	Minutes for the meeting.	Interview	Researcher	April 2011.
	2.Conduct meeting with forest stakeholders to create awareness on CBBM.	2. Conduct one meeting with stakeholders to create awareness on CBBM.	Minutes the Meeting ,Activity report	Interview, FGD	Researcher	April 2011.
	3.Conduct ten sub village meeting to create awareness on CBBM.	3. Ten sub village meetings were conducted to create awareness on CBBM.	Minutes the Meeting. Activity report	Interview, FGD Key informants	Researcher	July2011.
2.Beekeeping group formed and trained.	1.Conduct one village general meeting to form beekeeping group	1. One village meeting was conducted and 20 members formed the bee keeping group.	Meeting minutes	Documentary review,Interview Observation	The Researcher	July2011.
	2. Train beekeeping members in Mihima village on the best practices of beekeeping.	2.group members were trained on best practices of beekeeping	Training report	Documentary review, Interview	Researcher, Forest officer	July2011.

3. Forest management plan for Mihima Village Land	1. Conduct Resource Assessment in the Village Land Forest reserve. To identify suitable habitats for beekeeping	1. participatory assessment conducted	Reports.	Documentary review	Researcher ,VNRC Forest officer	October 2011.
Forest reserve reviewed to accommodate beekeeping activities	Facilitate the amendment of Forest bye - laws based on forest management plan.	3. Forest bye - laws were amended Based on forest management plan.	Forest bye - laws	Documentary review, Key informants	Researcher VNRC	December 2011.

Source: Field Survey 2011

### **5.3 Participatory Evaluation**

It is a collaborative process that involves stakeholders at different levels working together to assess a project and take any corrective action that is required. Whereas evaluation in general is an assessment at one point in time that concentrates specifically on whether the objectives of the project have been achieved and what impact has been made. It is about judging the merit or worth of interventions or outputs, generally focusing on the quality, quantity and/or performance of the outputs of a piece of work. In other words evaluation focuses at assessing the Effectiveness, efficiency, relevance, appropriateness and sustainability of project activities within the project objectives and their impact in relation to the achievement of the results. It is an ongoing activity, which is essential at every stage of the project. There are various types of evaluation depending on the basis of categorization. The basis may include coverage or scope, timing, who does the evaluation and comparison of input-output relationship. The following is the importance and need of carrying the project evaluation tasks:

Improving performance; the findings and recommendations from the evaluation should be used to improve implementation; it should derive lessons from completed projects so that the lessons may be used to guide future strategies. It is a management tool used to improve activities still in progress and aiding management in future and decision making also used to find out reasons for delay and to seek remedial actions.

Enhancing accountability; an evaluation can be used to improve the ways in which projects communicate the objectives, strategies, achievements and shortcomings with various stakeholders. Evaluation justifies the allocation of scarce funds, time and efforts by all the project participants. Promoting communication; evaluation promotes effective communication between the various stakeholders in the project, staff and donors.



Promoting learning and empowerment; evaluation is part of the learning process through which project participants develop new skills in planning and social and technical change. It increases motivation to participate in planning and implementing future activities

### **5.3.1 Types of Evaluation**

There are various types of evaluation conducted depending upon the basis of categorization or the assignment. The basis might include coverage or scope, timing, who does the evaluation and a comparison of input-output relationship.

#### **(i) Coverage or Scope;**

There are two categories under this type; first Partial Evaluation which covers some aspects of the project as opposed to the entire project and the second is the Comprehensive Evaluation which covers all aspects of the project and is usually done mid-way through the project implementation to determine which course the project should take or after project completion to determine what impact it has made. This category of evaluation was used during conducting the project evaluation during mid May 2011.

#### **(ii) Timing;**

This has four categories-first the Ex-ante Evaluation which is carried out before activities are undertaken or before project initiation to gauge viability and need assessment of important information related to the expected results. Sometimes is called Baseline survey or project appraisal. The purpose is to establish feasibility or viability, decide whether to start or abandon an idea, establish nature and extent of a problem (Needs Assessment and take stock of available resources).The primary user is donor, implementing agency, beneficiary community and is collected by an external expert, internal staff (M&E unit), community through Participatory Rural Appraisal. This was partly done in November 2010 while conducting the Community Needs Assessment. Second category is the Ex-post

Evaluation or Impact Evaluation which is carried out when the activities have been completed normally one to ten years after project completion. The purpose is to establish sustainability of results of the project, establish direct and indirect changes and benefits, and draw lessons learned for future project planning and inform policy formulation.

It is collected by the external evaluator or researchers. This is planned to be conducted towards the end of Process evaluation of December 2011. Third category is the Ongoing Evaluation (Formative or Midterm). This takes place at intervals during the projection or implementation in order to ascertain the continuing validity of the assumption of the project to establish whether it is on track to meet its purpose. Also to justify decision to make modification or improve work style, assess progress and efficiency. The information evaluated includes; inputs used outputs attained, financial status and accountability.

The primary users of the information are donors, project planners or implementers and the target group, normally is done by external / internal evaluators, project staff and beneficiaries. This type of evaluation was applied in conducting the project evaluation during mid May 2011. Fourth is Terminal Evaluation (Summative, Post Project, Final or End of Project). Normally is done at the end of the project or final funding cycle phase to determine its relevance. Its purpose is to assess results and effects of intervention activities, draw lessons, assess impact to justify resources and replication. Information evaluated is on outputs or results, effect and some impact. The primary users are donors, planners, implementers and target group It is conducted by external evaluator, internal evaluator, project staff or beneficiaries. This is planned to be conducted in five years to come.

### **5.3.2 Evaluation Objective**

The objective of this midterm (formative) evaluation carried in mid May 2011 was to reveal the performance and successes of the project in achieving its specific objectives and the overall goal (developmental objective). The evaluation exercise looked at the successes, challenges and lessons learned in the course of project implementation.

### **5.3.3 Evaluation Questions**

The facilitator administered the following questions to the group members so as to allow for group participation:

Has the capacity building for the group conducted as planned?

Are the members of the group competent in running the project on their own?

How many hives the group managed to have?

Are the hives active?

How many trees were planted? Are they surviving?

### **5.3.4 Evaluation Focus Areas**

The extent of the project goal achievement

Achievement of project objectives

Challenges that faced the project implementation

Existing opportunities for the project and

Suggestions for future improved performance of the project

### **5.3.5 Evaluation Design**

This project was evaluated in a participatory manner where there was an opportunity for stakeholders to reflect on the past and made important decisions about the future of the project. There was only one internal participatory midterm evaluation. The evaluation was

interested in concrete, measurable CED outcomes that derived directly from the project. It included formative CED outcomes such as new skills and knowledge on improved indigenous chickens' husbandry in terms of productivity, entrepreneurship and business development skills, increase in income and employment opportunities. It also looked for guidance and recommendations to strengthen and improve the project and make it sustainable and enhance its performance.

### **5.3.6 Performance Indicators**

Indicators are signs or variables that show the extent of change that resulted from the project. They help to measure what actually happened in terms of quantity, quality and timeliness against what was planned. They measure progress in achieving outputs and outcomes. They show relevance, performance and effectiveness of the project as well as progress towards meeting its outputs and outcomes.

There are many types or categories of indicators commonly used in monitoring and evaluation. It is advised to use a mixture in order to ensure that the objectives can be measured effectively and that monitoring and evaluation needs can be met.

Formative indicators (also called Milestones) are used during an activity, phase or project to show whether progress is on track.

Summative indicators are used at the end of the project for evaluation

Direct indicators-they measure the variables directly such as number of constructed chicken houses, number of procured equipment etc.

Indirect/ Proxy indicators-used for monitoring issues which are difficult to measure directly that is indicators that can provide estimates for impact and an outcome indicator

that are difficult and expensive to measure directly and can be measured after the project has ended.

Qualitative indicators -are analysed in numerical form-who, what, when, where, how much, how many, how often.

Qualitative indicators-measure things that cannot be counted

Normally indicators are established at the project formulation stage by stakeholders and project management team on the basis of the key project variables targeted in the project matrix or work plan. These variables may relate to project activities, inputs, outputs or methods of implementation and should define the aspects to be calculated, determine the unit/criteria of measure, state the time element and determine the spatial/location aspect.

When selecting the indicators to adopt for the project we based the decision on the following considerations.

Information that shows whether or not project objectives are being achieved;

Information required for effective management of project activities;

Information that responds to the priority interests of the different groups involved in the monitoring and evaluation process;

The data that is available and can be collected accurately in order to ensure that the monitoring and evaluation information is up to date,accurate,timely,relevant and reliable.

In view of the above four types of indicators were used in monitoring and evaluating the project.

Input indicators –describe the means by which the project is being implemented and are used to assess the extent to which resources are being used in the project to achieve the objectives also used as the basis for performance measures of outputs.

Output indicators- they show whether the outputs that were targeted are being achieved as planned and in the right quantity and quality. They measure the extent to which the project is delivering what is intended to deliver that is they are indicators for the results and are also of interest to the project beneficiaries. They specify a target quantity, a quantitative standard and the date by which the target should be met.

Process indicators-show whether the activities that were planned are being carried out as effectively as planned.

Impact indicators- Measure the project's impact upon the target group of beneficiaries. The project could create either a positive or negative socio-economic change like on income levels, employment creation, and environmental protection/degradation, health and other social hazards etc

The first step in the evaluation of the project was to define indicator of success basing on the development objective of the project that of improving community livelihoods by raising income, employment opportunities, health and nutritional status and food security through keeping of improved indigenous chickens. Hence the success of of the project was to be assessed by looking at the impact brought by the project to the Group in particular and the Mihima village community.

### **5.3.7 Participatory Evaluation Methodology**

#### **(i) Evaluation Methods /Tools Used**

Data is crucial to project evaluation as it is to monitoring. An important requirement for collecting good quality and adequate data is to choose appropriate methods and tools. The following methods were used in collecting data during the project midterm evaluation exercise conducted in May 2011; Semi structured-Interviews, Participatory Observations, Focus Group Discussions and Documentary and Records Review. While meetings, checklists, effective listening, group discussions, and appreciative inquiry and review of monitoring reports, Executive Committee minutes were the major evaluation tools applied during the midterm evaluation exercise.

#### **(ii) Sampling and Sample Size**

The sample and sample size were as applied in the participatory monitoring earlier discussed and it involved the major stakeholders of the project.

Data collection methodology used in evaluation

Research methodology employed in evaluation exercise includes; observation, documentary search/record review, interview and Focus Group Discussion and transect walk to apiary area.

#### **(iii) Evaluation Data Collection**

##### **(a) Observation**

Observation was employed to observe whether the hives were placed at the apiary and if the bee hives have been colonized by the bees. It aimed at assessing specific issues like the number of hives at the apiary, number of active hives, apiary management, and forest fire protection measures. Observation helped the evaluation team to compare the group records with the actual outcome observed.

**(b) Documentary /Record Review**

Documentary review was conducted to acquire information on hives and trees planted. The review was done on the village government meetings' minutes obtained from the briefing meetings with the group, the group meeting minutes, group hive inspection records, and tree planting records. Also training register was reviewed to see to it if all members attended training. Furthermore routine hives' inspection record was also reviewed to know if each member participates in the project.

**(c) Interviews**

Interviews were conducted to all members of the group and village officials (the Chairman and VEO) so as to acquire information on each individual perception and the village government towards performance of the group. Interviews allowed gaining insight on individual rating of their competence in running the project basing on the training conducted. It was a good method to test the individual skills and knowledge about the project as well as his or her participation in the whole process.

**(d) Focus Group Discussions**

Focus group discussion was conducted separately to two groups one of which was all eight female members of Jiendeleze group and another one the five male members who were randomly chosen from the group. This gave room to have information from both men and women separately so as to also assess gender issue in the project. FGD guideline was used to guide the discussion.

**5.2.8 Evaluation Results and Implications**

The table below shows the evaluation results as obtained from the survey that based on the evaluation criteria (derived from the evaluation questions). These criteria were: (1)



capacity building that aimed at whether training was conducted as planned; (2) members competence that aimed at assessing as to whether members are competent on their own to run the project; (3) hives kept that was looking on the number of hives the group managed to keep; (4) Colonized hives which aimed at exploring colonized hives out of the hives kept.

**Table 27: Summary of the Evaluation Results**

Evaluation Criteria	Indicator	Result	Average ranking by members
1. Capacity building	-members trained -members knowledge	All members were trained	Satisfactory
Hive colonized	Numbers of hives colonized	14 bee hives colonized	Satisfactory
Hives kept	Numbers of hives kept	20 hives were kept	Satisfactory

**Source: Field Survey 2011**

Evaluation has revealed that capacity building was conducted as planned to the group members in which all members were trained for beekeeping project implementation. Evaluation findings also showed that members were knowledgeable and competent enough after training, and in addition they practically participated in each stage of project circle. The interview with individual members showed that each one is knowledgeable in catching bees, managing the apiary, (i.e. cleaning hives, inspecting hives) and honey harvesting. Group members are also knowledgeable with bee calendar that is they know exact timing for setting bee hives and also the harvesting time. More interesting was that Mihima bee keepers argued that if bee hives are set closer to water sources, they tend to consume more honey as compared to if bee hives are set far from water sources. The

reason given was that bees tend to store more food when they feel that there is drought or shortage of forage. Their experience showed that more honey will be harvested when bee hives are set far from the water sources than when set closer to water sources. This argument contradicts many findings which suggested that bee hives should be set within 2km from water sources. At time of project evaluation the group was about to harvest honey from these hives. Out of the fourteen hives, eight were to be harvested within a month after the evaluation time. It was also reported that the group members had already contributed some money to buy ten more hives.

It was also noted that the group is keeping records as they were trained. These records include hive inspection record, forest condition record and group meeting minutes. Hive inspection record for instance was designed in such a way that it indicates the date of inspection, identity number of the hive inspected, insects/foreign bodies detected, action taken, remarks and a date for the next inspection. A series of all inspection records that were conducted fortnightly were available with the group.

### **5.3.8 Evaluation Data Analysis and Presentation**

Information collected was analysed using summary sheet and was presented using written and oral forms. Stakeholders gave their views in regard to project performance in a participatory manner and were accommodated during the analysis.

### **5.3.9 Project Evaluation Summary**

During evaluation three major project objectives were examined using several performance indicators for each objective. Expected outcomes and actual outcomes were also examined and noted in detail during the midterm evaluation exercise which was conducted in May 2011. Below here find the table which presents the evaluation summary.

**Table 28: Project Evaluation Summary.**

Objectives to be accomplished	Information needed	sources	Techniques/Metho	Instrument
1. Explore whether training was conducted to members to enable run the project	-Members knowledge on beekeeping -Members participation on their capabilities	Members to be interviewed	Interview Focus Group discussions	-Interview checklist -focus group discussion guidelines
2. Assess whether the group managed to keep bees as planned	Group performance in Beekeeping	-Project records -site visits -meeting minutes	-Documentary -observation at the apiary	-Reviewing checklist -Observation guideline

**Source: Field Survey 2011**

### **Composition of Evaluation Team**

The general meeting of the group members and key stakeholders appointed the evaluation team. The evaluation team consisted of two group members and one outsider. The outsider was the researcher who volunteered to help members retain their knowledge where as the members participated as part of their duty as project owners. Members were already trained on how to conduct evaluation for their project. The results of the evaluation team were presented to the same meeting within a week after evaluation to allow timely decision.

Table 15 shows summary evaluation covering evaluation objectives, their performance indicators, and the expected and actual outcomes for each. The evaluation revealed that the group received the necessary training to enable it perform its activities as planned. Members were trained on modern beekeeping techniques, apiary characteristics, monitoring and inspection of beehives, harvesting techniques, processing bee products

(honey and wax) and also training were provided on the group management and governance issues related to bee management.

Beehives were mobilized by the group members through individual contribution of materials and funds. The materials contributed included those which can be available in the village for free such as left over pieces of timber (Mabanzi), which were used to make the top bar hives. Each member contributed Tsh 10,000 the fund was used to purchase the wires, nails and paints also to pay for the carpenters who fabricated the bee hives.

Among the twenty bee hives mobilized by the group members, all were set at the apiary and fourteen were colonized by the bee hives by July 2011. This is about 70% of the hives have been colonized, the rest of the beehives which haven't been colonised were reported to be due to the fact that they were recently set at the apiary, but also they did not put enough materials to attract the bees. The researcher advised them to repeat adding more attraction to all uncolonized hives.

**Table 29: Summary of the Evaluation**

S/N	Evaluation objective	Performance indicator	Outcome	
			Expected	Actual
1	Explore whether training was conducted to members to enable them run the project	-conducted trainings -Members participation and knowledge in beekeeping	-Training conducted to all members - all members are competent	Training was conducted to all group members - good members participation -Members are knowledgeable
2	Assess whether the group managed to keep the bees as planned	-Number of hives kept -Hive colonized with bees	-20 bee hives kept -20 hives with bees	-20 bee hive mobilized -14 colonized

**Source: Field Survey 2011**

#### **5.4 Project Sustainability**

This project is considered sustainable due to the reality that it is a community-initiated project. It is a demand from the group members themselves after participatory needs assessment conducted by both the researcher and the group. The group decided to opt to this project because it is within their goal, mission and vision. The group feels the ownership of the project and hence it will take measure for its development.

Secondly the initial funds for the implementation of this project were contributed by members. This proves that the group doesn't depend solely on external funding implying that the project could be sustainable regardless the changes in external funding sources. This make us assume that the group is capable of adding more hives as time goes putting into consideration that harvesting and selling of honey will generate supplementary income to members. In the future group members can diversify economic activities by establishing more projects which can utilize the bee products. The group can start making candles and Batik which are demanded by the community members and in townships such as Nyangao and Lindi.

Lastly, the project members were involved in each stage of the project to ensure knowledge acquisition among themselves on project planning, implementation, monitoring and evaluation. In addition the training on bee keeping assured new skills on the project and developed more interest to the group members. This implies that even in the absence of a facilitator the group can run itself sustainable.

The project is guided by the Beekeeping Policy, 1998 and the Beekeeping Act, number 15 of 2002. The money which will be obtained from the sell of bee products will be under the control of the group members. Mihima village will continue to manage the forest

according to the management plan and after every three years the village should review and revise their management plan based on what has been done so far. The beekeeping group members will support the conservation of the village land forest reserve as they will be monitoring the forest condition during the bee hives inspection. Also they will be avoid using traditional methods of using grasses to set fire and chase the bees from the combs, modern honey harvesting methods has been proposed to be applied by the beekeeping group members. This will have dual impacts to the sustainability of the forest resources and also the bee resources as the mortality rate of bees caused by application of the traditional methods will be avoided. Forest firebreaks will be made around the apiary and also along the village land forest reserve to protect the forest from being invaded by fire, which might be detrimental to the bee forage and bee resources.

#### **(i) Project Sustainability Plan**

It describes how planning should make the project sustainable overtime, the steps taken so far and the expectations for future sustainability. There are various elements or factors which are likely to contribute towards the sustainability of the project and normally they are presented as project sustainability indicators. The following are key indicators which will enable the project to be scaled up and replicated in other neighbouring villages.

#### **(a) Sustainable Development**

The project will continue to get funds from selling the bee products. Beekeeping members will open a bank account which will be used to keep funds collected from the contributions from the sell f the bee products and from other sources. The fund will be used to fabricate modern hive and also to support knowledge development for the group members through training etc. Other source of funds will be fund raising through development of project proposals, donations from the government and donors. The project

will also contribute to the economy of the people and poverty eradication by providing the opportunities for the sustainable supply of bee products for sell or self employment like carpentry and or other business with bee products. Honey vendors will also benefit from the project as they get easy supply of the honey from the group. Candle makers and Batik makers will also benefit from the project and it can trigger these activities to be conducted with other income generation groups in the village.

The project also will ensure food security to the villagers and will contribute to the nutrition status of the villagers. The project will contribute to sustainable management of the environment and control of environmental pollution as the villagers prepared the forest management plan which facilitates protection of the forest and guide on the utilization of the forest products in the sustainable way there by providing room for the forest regeneration and avoiding depletion of the forest due to over utilization. The involvement of men and women in the bee keeping groups will provide a good opportunity for them to advocate for the equal opportunities (equity) to benefit from the natural resources available in their village land.

The project was designed and implemented in a participatory manner. This will enhance project ownership and sustainability. The beekeeping group members have been trained on bee keeping management practices for them to be able to work efficiently. The group will continue to be guided and supported by the district bee keeping officer and other natural resources officer available in the village.

Lindi district council through the district beekeeping officer will continue to keep an eye on progress and problems of the project knowing when to support, when to step back and when to intervene if the group is not meeting the obligations has made. In the future the

group can be guided to establish and own a beekeeping reserve which will support improvement of the beekeeping qualities through promotion of the organic honey as it is happening in Inyonga in Mpanda district.

### **(b) Policy Sustainability**

The project is in line with the National Beekeeping Policy of 1998 and the Beekeeping Act number 15 of 2002 which provides a clear legal basis for communities, groups of people or individuals across mainland Tanzania to practice beekeeping in the adjacent forests. Most of the costs and benefits relating to management and utilization are carried by the owner and the central governments and districts only have a role in monitoring.

Being in line with the government policies, the project will be getting a great support from the government.

## **5.5 Chapter Summary**

In summary chapter five explains the participatory monitoring, evaluation and sustainability for the project being undertaken at Mihima village-Lindi District between February and mid May 2011. The first section covers participatory monitoring, the second section shows how participatory evaluation was carried out and the last part is about project sustainability. The objective of conducting participatory monitoring was to compare the progress of activities with the original plan. This was done by analysing the current situation, identifying any problems, discovering trends and patterns, keeping project activities on schedule, measuring project progress towards success and making decision about resources.

The monitoring method applied was the Participatory Rural Appraisal. The following tools and techniques were used; Semi-Structured Interviews, Focus Group Discussions



and Direct Observation. The participatory evaluation was conducted based on both Ex-ante evaluation and Formative evaluation (ongoing evaluation) both applying comprehensive approach of evaluation. Ex-ante evaluation was partly covered during conducting CNA in November 2010 while the Formative evaluation was conducted in mid May 2011 to look into the guidance and recommendations designed to improve the project and make it sustainable, enhance performance and its productivity. The same tools used during participatory monitoring were also used in participatory evaluation and added the documentary reviews as the fourth tool. Project sustainability plan was assessed in terms of institutional, financial/economic, political and gender equality indicators. The project effectiveness and efficiency was taken into consideration to ensure accountability, transparency and create sense of ownership and project continuity. All these were done in a participatory manner at Jiendeleze Group in Mihima village. The research design used the same tools as used in the participatory monitoring exercise.

## **CHAPTER SIX**

### **6.0 CONCLUSION AND RECOMMENDATIONS**

#### **6.1 Introduction**

This chapter presents the conclusion and recommendations for the beekeeping project implemented by Jiendeleze group members. Conclusion is made right from the evaluation of the project in relation to objectives attained. It summarizes the findings of the Participatory Needs Assessment. Literature review, report on the project implantation and indicates objectives which have been achieved so far. It explains the project participatory monitoring, evaluation and sustainability plan.

#### **6.2 Conclusion**

The participatory assessment conducted in Mihima village on community, economic environmental and health revealed the stresses in the community as being, lack of water for domestic use, inadequate medical facilities, lack of loans for business, lack of skills enough to succeed in business for entrepreneurs and low household income.

The sources for the identified stresses in Mihima village were found to be absence of reliable water sources like rivers and springs in the village, inability of the government (Lindi District) to supply medicines in the village to match with the population growth, absence of nearby micro financial institutions in the community where people could get loans for business and absence of training Program for business people in the area and lack of ownership and responsibility to managing utilize the available assets such as forest in poverty alleviation.

Low household income was identified as a priority problem among the aforementioned stresses. This has been the reason for the selection of the project. The community addressed the problem through initiating the Community Based Beekeeping Management (CBBM) under which the community owned and prepares and started implementation of the beekeeping in the village.

The Literature review revealed that, Tanzania is among the countries in the world with high potential for producing quality bee products such as honey and beeswax which meets the international markets.

Community Based Beekeeping Management has been initiated in Mihima village to ensure that the Villagers diversify the current income sources through better utilization of the village forest reserve and also support protection of forest. Awareness on CBBM was created in the village through conducting meetings to all sub villages. The village land forest management plan was reviewed to allow for beekeeping practices in the forest and also the be laws were amended to accommodate beekeeping activities. The monitoring of the project revealed the implementation of the activities was on schedule.

Participatory evaluation was not completed as the project just started, so it was important to monitor progress of the start of the project and then the researcher identified the indicators for monitoring of the activities in the future.

In the period of 4 months, beekeeping members had mobilized 20 bee hives which have been colonized by the bee colonies. Furthermore the evaluation revealed the successful achievement of the planned objectives as follows: 10 awareness creation meetings were conducted in the community to create awareness on CBBM, One Village Natural

Resource Committee was formed and all 20 members of beekeeping were trained to be able to participate in CBBM initiation processes and take the responsibility managing beekeeping activities in the village.

### **6.3 Recommendations**

The Participatory Needs Assessment is the best way of identifying the communities' priority need and problem and it give easily entry to the community. It's therefore recommended for any project or study aimed to be implemented or done in a particular community for their support to start with participatory assessment in order to identify their priority need or problem.

The project designing and implementation should be done with the project beneficiaries as it is proved to enhance success through beneficiaries participation, project ownership by the beneficiaries and the capacities gained in course of designing and implementation together with beneficiaries ensures project sustainability.

The training of the Beekeeping members did not include topics on finance management; it is therefore recommended for members to be trained by Lindi district council as they will be handling money from the sell of bee products. Beekeeping Members and VNRC should ensure that the fire breaks are cleared around the forest to reduce fire risks as agreed in the forest management plan.

Bee keeping members should continue collecting forest status information during inspection of the beehives and present to the village government and village natural resources committee.

For better record keeping, beekeeping members should be producing a report to the village council and district council on the progress of their activities including the revenue from their interventions.

The district council and other partners such as WWF should patronage the group so that it's success can be replicated to other areas.

It is recommended that in order to tap the potential of the beekeeping in the village and other adjacent villages, a bee reserve to establish.

It is proposed that a sting less beekeeping project be established to add more values to the income generation groups in the villages. Sting less bees are easy to handle and can be kept on the home back yards

The village lacks the reliable water for domestic use, the health services do not meet the requirements of the villagers, and there are no reliable micro financial institutions. More study is therefore required on how the community should get rid of these problems. Another area of study is on how best the Village Land Forest reserve should be improved to bring, income through tourisms.

It is also proposed that a study on value chain analysis of the forest products from Mihima village be conducted as well as development of a business plan for the village.

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## **APPENDICES**

### **Appendix I: Focus Group Discussion Questions. (For Community Assessment)**

#### **A. Community Assessment**

Is volunteerism increasing or decreasing in your community?

a) Is community decision making an open mind process?

b) Does it encourage new ideas and alternative points of view?

c) Are all kinds of people involved?

How is the quality of local leadership?

Is the community a good place to raise children?

How does safety in this community compare with other area?

Is the community dealing adequately with poverty?

Do you get the essential human needs in this area? For whom essential needs are not fulfilled.

Is adequate health care accessible by all residents?

How is the cost of living compared to other areas/communities?

Is housing adequate in this area?

a) What are the local cultural traditions in this area?

b) Which ones promote development or quality life in this community?

c) Which ones hinder development or quality of life in this community?

Are educational facilities sufficient?

b) Are they being used to help business and labor?

What are the community assets?

What is the situation are they increasing or decreasing?

#### **B: ECONOMIC ASSESSMENT**

What kinds of business/economic activities which are done in this area?

Which kind of business or economic activities among those ones which are not doing too well?

Does local economy success make housing more or less affordable in this area?

Is it usually difficult to get a business or home loan in this community?

Do private investors tend to invest or shun the community?

Are current patterns of economic expansion helping or hurting business?

Do business provide adequate employee benefits?

Do business people in the community feel they are operating in a supportive business environment?

Do businesses tend to buy supplies locally or outside the community?

Does much money or resources “leak” from the local economy?

Is there any situation that triggers business recruitment , retention or expansion?

Do business people have the skills necessary to succeed?

What is the size of informal business in the community?

How important is the role of informal business in the community?

What percentage of the community benefit from informal business?

Are public services and infrastructure adequate in the community (eg. schools, police, fire, sewer, water, and health)?

Are there any plans to expand the existing ones? If so who will pay for the costs?

### **C: ENVIRONMENTAL ASSESSMENT**

What are the conditional of the local natural resources? (Wood and water)

Do you have a reserved forest in this community?

a)Where do you get firewood for cooking?

Is that source sustainable? If not what is to be done?

4.a) Did you happen to have a big forest and water spring in your area in the past?

b) If yes, do you still have them? Do you still need them, How to make them more sustainable?. If it is not there anymore, how can we revive it?

5.a) Do you have any groups, CBO or local NGOs that are dealing with Environmental conservation?

b) What activities are they doing specifically? And how do the community participate or support them?

c) Which more could be done to properly conserve the environment than what has been done and what is the best way for the people to participate?

6.0 What activities done in this area which you think they are accelerating the environmental degradation?

a) What can be done?

7.0 Are there any natural resources or ecosystem services being used faster than they are being replenished?

8.0 Are there any problem /source of pollution?

9.0 Is there any economic activities which depend on the health of natural local resources and ecosystems?

10. Are there ways in which resources were once used, but are no longer being used to create jobs?

11. Have any Natural resources been exhausted through unsustainable practices?

12. Given current trends in what conditions are your children likely to find the community's natural resources and ecosystem services?

b) What should we do in order that they may find them and also benefited from them?

13. What type of crops are you cultivating?

Cash crops. ....

Food crops. ....

**HEALTH ASSESSMENT**

What kind of health facilities if any are available in your community?

What kind of health services (malaria, HIV-AIDS, Cancer, prenatal, etc are available in your community?)

a) How far is the closest referring or major health facility from your community?

b) Is transportation readily available and affordable for the community member to reach the facility?

a) Do members of the community pay for health services?

b) Is it a cost sharing system?

c) Who is the major contributor of health services provider in your community?

(Government, Church, Mosque or private?). If it is a combination of all or part of these providers indicate the contributions in percentage.

Is medicine provided for free of charge?

Have recent surge in population in the community resulted in increased and improved health facilities and or health services?

Will any pending plans or proposal increase health facilities or enhance health services in the community?

Health units Questionnaire

What are the top ten diseases in the area?

a) How many Nurses in the health unity?

b) What is the Nurse patient ratio in the health Facility?

c) How many doctors in the health unity in the health facility?

d) What is the doctor/patient ratio at the health facility?

e) Are Nurses and doctors in those facilities well trained?

Are there medicines for top ten diseases enough in the health facility?

Is there frequent diseases outbreaks? If Yes which diseases?

**Appendix II: SURVEY QUESTIONNAIRE ON ENVIRONMENT (For Community Assessment)**

Region	District
Ward	Village Name
Division	Date
Name of Respondents	Name of interviewer

The interviewee wealth category

1. Rich
2. Medium Wealth
3. Poor

Interviewee Age

Below 18 years

Between 18 years and 40 years.

Above 18 years.

Interviewee education level

Have not gone to school

Adult education

Primary education

Secondary education

University Education

Others Please mention.....

Are you a residence of Mihima village?

Yes

No

What activities are you doing which gives you income?

Agriculture

Self employment from forest products.

Business

Government employment

Others. Please mention.....

If it's Agriculture, do you have a farm?

Yes

No

How do you get the farm?

Through buying

Hire (please mention the costs for hiring.....)

Clearing the forest

Inheritance

Others. Please mention.....

What types of crops are you cultivating in your farm.....

What is the type of your farm?

Temporary farm

Permanent farm

Both of the two

What ways are you used for farm preparation.

Clearance and burning

Felling trees and burning

Clearance, debris collection and burning

Felling trees, debris collection and burning

Others. Please mention.....

Mention the names of the forest found in your village.....

What activities which are contributing to deforestation in this village.

Clearance and Farming

Fire

Timber harvesting

Charcoal burning

Cutting for the building poles

Others. Please mention.....

What ways do you think can be effective in managing our Village Land Forest reserve?

Participatory forest management/Community based forest management.

The Government to manage the forest by itself (Traditional management)

The community to manage the forest itself without government involvement.

What kind of forest product is available?

Name of Forest Product	Type of trees/plant	Collection period
Fruits		
Fire wood		
Timber		
Charcoal		
Traditional medicine		
Building poles		
Thatch grass		
Carving species		
Honey		
Green Vegetables		
Mushroom		
Animals		
Edible insects		
Glue species		
Dye		
Ropes		
Mat making materials		
Others (Mention)		



**Appendix iii: SURVEY QUESTIONNAIRE FOR COMMUNITY,  
HEALTH AND ECONOMICS. (Community Assessment)**

Region	District
Ward	Village Name
Division	Date
Name of Respondents	Name of interviewer

The interviewee wealth category

Rich

Medium Wealth

Poor

Interviewee Age

Below 18 years

Between 18 years and 40 years

Above 18 years

Interviewee education level

Have not gone to school

Adult education

Primary education

Secondary education

University education

Others. Please mention.....

Are you a residence of Mihima village?

Yes

No

What kind of activities are you doing which gives you income?

Agriculture

Self employment from forest products

Business

Government employment

Others. Please mention.....

A: Community Assessment

2. Is volunteerism increasing or decreasing in your community?

a) Yes

b) No

2. Is community decision making an open mind process?

a) Yes

b) No

How is the quality of local leadership?

a) Yes

b) No

Do you get the essential human needs in this area?

a) Yes

b) No

If no which ones are not available .....

Are the public services and infrastructure adequate in the community ?

(eg. schools, police, fire, sewer, water, and health).

a) Yes

b) No

#### Economic Assessment

Is it usually difficult to get a business or home loan in this community?

a) Yes

b) No

Do private investors tend to invest or the community?

a) Yes

b) No

Does business provide adequate employee benefits?

Yes

No

Do businesses men tend to buy supplies locally or outside the community?

a) Yes

b) NoDo business people have the skills necessary to succeed?

a) Yes

b) No

How important is the role of informal business in the community?

a) Yes

b) No

## HEALTH ASSESSMENT

Are the health facilities available in your community enough?

a) Yes

b) No

Do members of the community pay for health services?

a) Yes

b) No

Do you have enough medicine in the village dispensary?

a) Yes

b) No

Health units Questionnaire. (For the Doctor in charge)

a) What are the top ten diseases in the area?.....

b) What is the Nurse patient ratio in the health Facility?.....

c) How many doctors in the health unit?.....

d) What is the doctor/patient ratio at the health facility?.....

e) Are Nurses and doctors in those facilities well trained?.....

3. Are medicines for top ten diseases enough in the health facility?.....

4. Is there frequent diseases outbreaks? If Yes which diseases?.....

**Appendix iv: Survey questionnaire (for the evaluation)**

Name..... Sex.....

Age.....

Is there any control over the use of forest products from the Village Land Forest reserve?

a) Yes

b) No

Is the incident of fire occurred in the Village Land Forest reserve in the past six months?

a) Yes

b) No

Do people still open up farms in the forest?

a) Yes

b) No

Does the initiation of Community Based Forest Management makes any difference in the Village Land Forest reserve management?

a) Yes

b) No

If yes what happened.....

If no what happened.....

Are the bye - laws prepared effective enough in managing the Village Land Forest reserve?

a) Yes

b) No

Does the village have forest management plan?

- a) Yes
- b) No

Is the management plan properly guide on sustainable management of the Village Land Forest reserve?

- a) Yes
- b) No

Are the villagers proud of their forest?

- a) Yes
- b) No

Do you know the meaning and benefits of Community Based Forest Management

- a) Yes
- b) No

If yes give the answers.....

.....

.....

**Appendix v: Evaluation Tool for forest condition. (For Transect walk)**

Check list for Forest walk

Fire incidences

Note the evidence of recent fires in the forest

Note the recovery of the parts once burnt.

Cleared forest areas

Note if there any new cleared area in the forest

Note if there farms found in the forest?

Tree cutting

Look the recently stumps for the cut trees. Is the cutting involved the ones which were prohibited in the management plan?

Is there evidence of newly excessive felled tree and pole wood harvesting

Agree if the recent tree cutting intensity has been high/medium/low.

Enquire whether the people found in the forest in the period of walk had been allowed by the VNRC.

Improvement on forest condition

Note if there more undergrowth than before

Note whether the cattle and people trails are closing

Note if there signs of water discharge

Note if the wild animals' species are increasing in the forest

Note for tree seedlings

Look for the re-appearance of the rare and valuable tree species.

Forest boundaries

Are there any changes in the forest boundary?

**Appendix vi: Letter of Introduction and Acceptance**

NicholausA. Kinyau

P.O.Box 277

Lindi.

20/02/2011

Mwenyekiti wa Kijiji

Kijiji cha Mihima

S.L.P 98

LINDI

Ndugu,

**YAH: Ombi la Kutekeleza Mradi wa Maendeleo kwa Ushirikiano wa Wanakijiji wa kijiji cha Mihima.**

Mada tajwa hapa yahusika.

Mimi ni mwanafunzi katika chuo kikuu huria Tanzania. Ninasoma shahada ya uzamili katika maendeleo ya uchumi wa jamii. Kutokana na utaratibu wa chuo wa kuelimisha wanafunzi kwa vitendo. Ninatakiwa kutafuta sehemu ambayo nitashirikiana na wanajamii katika kubuni na kutekeleza mradi wa maendeleo kwa pamoja.

Napenda kukujulisha kuwa nimependelea kushirikiana na wanajamii wa kijiji cha Mihima katika shughuli hiyo. Mimi sina fedha lakini ninao utaalumu wa kuisaidia jamii kubuni na kutekeleza miradi endelevu. Hivyo naomba uwe mwenyeji wangu katika kipindi cha miezi Sita yaani (February – July 2011), nitakapokuwa nikisaidiana na wananchi katika kutekeleza mradi tutakaobuni kwa pamoja kutokana na vipaumbele vyetu hapo kijijini.

Ni matumaini yangu kuwa ombi langu litakubaliwa.

Wako katika ujenzi wa taifa

.....

Nicholaus Kinyau.