

Bale Eco-Region Sustainable Management Programme (BERSMP) of FARM-Africa, SOS Sahel Ethiopia and Oromia State Forest Enterprises Supervising Agency



The Bale Eco-Region Sustainable Management Programme (BERSMP) has been operating in the Bale Massif since the end of 2006 and aims to bring local communities into a central role in sustainable natural resources management supported by government services, across the whole Bale Massif.

The programme is supported by the Irish, Netherlands and Norwegian embassies.

**BALE ECO-REGIONAL SUSTAINABLE MANAGEMENT
PROGRAMME**



**A STUDY ON PRIVATE SECTOR LINKAGE FOR BEES
PRODUCTS PRODUCERS IN BALE**

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TABLE OF CONTENTS

0	EXECUTIVE SUMMARY	3
1	INTRODUCTION	5
1.1	Background and Rationale of the Assignment	5
1.2	Purpose of the Assignment	6
2	METHODOLOGY	7
2.1	Secondary Data Collection	7
2.2	Primary Data Collection	7
3	OVERVIEW OF BEEKEEPING IN ETHIOPIA	8
3.1	History and State of Resource Base	8
3.2	Economic Importance	8
3.2.1	Production and Consumption of Honey	8
3.2.2	Honey and Beeswax Export in Ethiopia	10
3.2.3	Employment	11
3.3	Domestic Markets for Honey and Beeswax	11
3.3.1	Price of Honey and Beeswax	12
3.3.2	Key Actors and their functions	12
3.3.3	Principal Value Chains	15
4	CURRENT PRACTICES OF HONEY PRODUCERS IN THE BALE AREA	17
4.1	General	17
4.2	Production Technologies	17
4.3	Beehives Management	20
4.4	Harvesting of Honey	20
4.5	Storage/Packing Practices	21
4.6	Processing Practices	21
4.7	Marketing of Honey	21
4.8	Constraints and Opportunities	22
5	FELT NEEDS AND CONCLUSIONS	24
5.1	Technological Needs	24
5.2	Packaging and Handling Needs	24
5.3	Business Development Service Needs	24
5.4	Product Development and Promotion	25
5.5	Institutional support Needs	25
5.6	Marketing Infrastructure Development Needs	26
5.7	Policy Support Needs	26
5.8	Knowledge Gaps	26
6	RECOMMENDATIONS	27
7.	ANNEXES	31
	Annex1: The Position of African Honey in the EU Markets and Niche Markets	31
	Annex2: European Union Requirements and Legislations	34
	Annex3: Honey Supply Chains and Purchasers' Requirements	35
	Annex 4: Principal Market Opportunities	36
	Annex 5: Honey and Beeswax Specification Standards	37
	Annex 6: Trade Standards for Honey	38
	Annex 7: SOS Sahel's Experience in Amhara region	39
	Annex 8: Good Beekeeping Practice	40
	Annex9: Terms of Reference for the Study	43
8	REFERENCES	45

EXECUTIVE SUMMARY

The Bale Region has been historically known as an important producer of honey reaching as far as Addis Ababa. But, this has been declining over the years especially during the last 35 years that saw three governments come and go. This decline is attributed to expansion of agriculture, over grazing and annual bush fire and resulting in decline of the forest area. This change of land use and natural resource decline has drastically reduced the supply of nectar and pollen supply for beekeeping. The beekeeping sector has failed to modernize. It remains largely traditional impacting negatively both quantity and quality of products with the attendant hazard to the men that hung and harvest the honey. This tradition has also excluded women from participating in the production of honey. Its direct linkage to the market and the private sector has also remained absent or weak.

The purpose of **BERSMP** and the **Bale Forest Enterprise** is two fold; (a) **NRM/EP** and, (b) **enhanced livelihood of HHs and communities**. One of the important livelihoods identified by BERSMP is the honey and bee products sector whose implementation will be integrated with other livelihoods such as forest coffee, based on sustainable management and utilization of other natural products (**NTFPs**).

Beekeeping is an environmentally friendly and non-farm business activity that has immense contribution to the economies of segments of the society and to a national economy as a whole. Ethiopia has a huge natural resource base for honey production and other hive products, and beekeeping is traditionally a well established household activity in almost all parts of the country. However, the benefit from the sub-sector to the nation as well as to the farmers, traders, processors and exporters is not satisfactory. Therefore, it is important to identify alternative mechanisms in which the honey producers and other actors can overcome and add value to their products, and become stronger negotiators in local, regional, and international markets, thereby securing their income and livelihoods.

The overall purpose of this mission, therefore, was to undertake a Honey and bee products producers - Private Sector linkage creation initiative and implementation in the context of the Bale areas.

It attempts to identify interventions required at different stages of the honey value chains in order to make the sub sector more competitive in the domestic and export markets, and thereby improve the livelihood of, particularly, the rural poor.

Besides thorough review of literature and collection of factual secondary data, primary information was gathered using different approaches. These include focus group discussion and interview with key informants.

An overview

The study noted a low level of integration of beekeeping with other production and land use systems, including eco tourism and watershed management as means of effectively integrating beekeeping by both smallholder farmers and commercial plantation agriculture. Soil and water conservation (SWC) measures, through the wide-spread application and use of terraces on sloping lands under agriculture, needed in the Bale Region are absent even when barley and wheat crops are grown on sloping lands where economic trees and woody perennials should be established and managed on these conservation structures.

Unfortunately, **barley** and **wheat** assisted by **teff** are, instead expanding in Bale.

Beekeeping, through increased bee forage availability year-round is possible from such systems of land use. However, the planting and cultivation of trees and perennial crops is to be advanced over the traditional rain-fed arable crop farming which depletes tree and woody vegetation cover and over all land productivity over time

The **absence of the private sector**, especially in the honey and bee products processing and marketing is at present a highly pronounced problem and needs to be developed. The role of the private sector will be facilitated by an organized producer group and the transformation of the subsistence farmers into commercial ones will be facilitated by the private sector. Based on the level of technological advancement, three types of beehives are used for honey production in Bale. These are traditional, intermediate and box beehives. It is estimated that the traditional beekeeping accounts for more than 95% of the honey and beeswax produced in the area. In the area, honey has long standing traditional values, for instance, as an important ingredient for processing honey-wine locally called *tej* brewery, and beeswax is used to produce local candle.

Honey production practices: Conditions of honey and other bee products production, harvesting, processing and marketing in the Project Area (Bale) are generally poor resulting in reduced yields of market value as explained next. Delo Mena Woreda (one of the surveyed Woreda) reported to have 37,000 beehives with an estimated average yield of 3-5 kg/hive. There are reportedly two harvests per year. Nearly all traditional hives in the Bale region are hung on native trees. The penetration of improved bee hives such as the Box Hive is significantly low (only 250). Traditional bamboo hives are becoming more common and are sold at 30 Birr/hive by those who make them. The traditional hives are still being made from local tree logs. The box hives are made from sawn timber and are distributed to farmers at a subsidized price of 300 birr per hive from 510 birr. In general, there are no improved production practices in use by the producers as further explained below.

Honey harvest and yield: Bee hive management is currently not practiced by farmers, especially seasonal management of the colony to reduce absconding and increase yield. The overall colony number appears to be on decline caused by several factors. Seasonal fluctuation of bee forage supply and cold temperatures in the Wurch and Dega zones may be major factors, but field workers look at the forest and dismiss this while farmers report migration of colonies from highland (dega and woina dega) area to lowland, based on seasons. There is no evidence of bee forage cultivation and provision of supplementary resources, i.e. sugar, flour and adequate water for colony management. Because of their ecological differences, the main harvesting period of the three high potential target Woredas (Goba, Delo Mena and Harena Buluk) are different. All the three Woredas have one major harvesting season and one minor harvesting season.

Post harvest handling and processing: Majority of the beekeepers used plastic containers and okolee (made from animal skin) to store honey for short periods and transport it to the local and village markets. Other farmers still use traditional containers such as sacks, animal skin and tin can to store honey, which are technically not appropriate storage facilities as they result in serious quality losses. Only few beekeepers were found to strain their honey (just separating honey jelly from wax) before selling by draining or sometimes by hand. Processing of crude honey into table honey and the crude beeswax into pure form was not generally practiced in the area by the beekeepers.

Honey Marketing: The study noted that typically producers sell their fresh and unprocessed honey to the local markets or to the local trader. The *tej* house is important buyers in the local market. The local traders bulk and sell to bigger towns such as Bale and Robe. The product then moves to other farther destinations such as Negelle Borena, Awassa and Addis Ababa. Smaller quantities move with individuals traveling from Goba/Robe to other destinations, including to Addis Ababa.

Local unrefined honey sells for 13 Birr/kg (11 to 14 ranges). Processed honey (*wolela mar*) sells for 22 birr/kg in the region and still higher in Addis Ababa. The processing of honey into table is reportedly more profitable while it takes a much inferior quality of honey compared to table honey.

Market channels and value chains: Beekeepers, honey and beeswax collectors, traders and tej brewers are identified to be the key actors in the value chain of the honey sub-sector in the Bale area. Three principal channels were identified in the value chain of the sub-sector. These are tej brewery channel, honey processing and marketing channel and beeswax channel. These channels are complex and interconnected that implies absence of organized marketing channel and lack of formal linkages among the actors. Presently, most of the harvested honey goes through tej brewery channel. Beekeepers directly sell their honey to local honey collectors (trader or cooperatives) at Woreda or zonal levels, which directly deliver the honey to tej brewery houses in their localities and/or transport it to the big honey dealers for breweries in Goba, Negele or Addis Ababa. Some beekeepers who are producing large quantities of honey also directly supply it to tej houses in their areas. Honey marketing channels also start from beekeepers and goes through the local traders, which supply the honey directly to traders, the processing plants either with partial refining or as it is or to consumers. The processing plants further refine the honey using advanced processing devices and pack into labeled containers for local markets (super markets, food groceries and big hotels) and very often to export markets. Unlike the two channels mentioned above, the beeswax channel starts mainly from tej brewery, which collects the wax as a by-product of tej or berz. The tej brewers either sell the crude beeswax or semi-processed to the local beeswax collectors who supply to beeswax refiners in Addis Ababa. The beeswax processors produce the final pure beeswax suitable for export market and local markets. Sometimes beekeepers buy beeswax from the wax collectors and/or processors to use as a starting input for honey production using intermediate and box beehives.

Problems and challenges: Low quality and limited supply of honey are the most critical problems in the value chain in the Bale area, which is mainly caused by backward technology, poor pre and post harvest management, shortage of trained human power, lack of access to credit services and weak road and market infrastructures in production areas. Absence of organized market channel, lack of market information and poor access to international markets are also the other critical challenges facing the sub sector in Bale.

Opportunities: There is still huge potential to increase honey production and to improve the livelihood of the beekeepers (farmers). Besides the existing natural base, the regional government has recently put in its agenda the need to develop apiculture as one of the strategies to reduce poverty and to diversify national exports. Many NGOs are also giving more attention to the sub-sector than ever before as an important intervention areas to support the poor. This will give farmers the opportunity to access improved technologies and capacity building (training on apiculture). The recently started establishment of processing plants in the zonal town Goba and some other areas in the area by the BERSMP is a big opportunity to invest in the area.

Recommendations: Increasing introduction (adoption) of transitional and box beehives and encouraging larger participation of households in beekeeping and scaling up the level of their production by integrating with agriculture using agro-forestry technologies and conservation of natural forests are critically important to increase production and quality of honey and wax in on a sustainable base in the study area. Furthermore, enhancing the knowledge of the producers and traders through training on pre and post harvest handling and on basics of business development services, providing institutional supports (such as credit, market information), and facilitating formation of honey marketing cooperatives will have enormous importance to empower the poor and to promote the apiculture sub sector.

1 INTRODUCTION

1.1 Background and Rationale for the Study

Beekeeping is as old as human history itself. In Ethiopia, especially in Bale Region beekeeping has not made a strong departure from traditional ways and practices. **Its economic and social value remains undisputable.** In addition to honey and beeswax harvests for home consumption and for sale, **its role in crops and fruits pollination and enhancement in biodiversity is being recognized more and more. This second role and value is said to be ten times more than the direct economic contribution of honey products.** Pollination by bees is said to increase the yield of coffee (30-50 %), oil crops such as noog (30-40%), and that of horticultural tree crops in general. Biodiversity is maintained and enhanced by bee pollination. Rural and urban households know the medicinal and nutritional value of consuming honey, especially in its crude form as well as its economic contribution to household economy. **It is often the most profitable rural livelihood enterprise** if done in large enough scale and if well managed. Commercial scale operations are highly profitable. But despite this fact, beekeeping in Ethiopia remains a minor economic activity on both rural and urban centers. **The commercial value of beeswax as an exportable product has not been well recognized in Ethiopia, (more so in Bale as established by this study).** Traditionally, it is often a by-product of *tej* making and is often made into long *tiwafs (traditional long candles)* for use in religious ceremonies and some in jewelry crafts. **But in the global market, beeswax is in great demand and is utilized to make some 300-market products or used for industrial processes.** The most common products that are made from beeswax or used in products include; **candles, ointments, lotions, lipsticks, polishes, paints, varnishes, and pharmaceuticals,** among others. In the country, it is estimated that around one million farmer households participate in beekeeping and 20,755 households participate in the sub-sector in the three target Woredas alone. In addition, a significant number of people are engaged in production and trading of honey at different levels and selling of honey wines (local beverage *tej*) which create job and self employment opportunities for large number of citizens. Recently, the contributions of beekeeping in poverty reduction, sustainable development and conservation of natural resources have been recognized and well emphasized by the government of Ethiopia and Non-Governmental Organizations (NGOs). Beekeeping in the Bale areas is still very traditional. It is carried out dominantly in forest/high trees, and only few in home gardens. The bees and the plants are constantly under threat because of land degradation and removal of vegetation cover for increasing crop production and demand for fire wood. Thus, production, productivity and quality of honey produced in the area is generally poor and below the potential. In addition, the smallholder producers have currently limited access to market due to low level of productivity; poor product quality and market barriers, such as poor infrastructure, shortage of finance and lack of collective bargaining power.

Therefore, it is necessary to identify alternative mechanisms in which the honey producers and other actors can improve and add value to their products, and become stronger negotiators in local, regional, and international markets, thereby improving their income. In general, this mission aims at collecting data and providing analytical information that help BERSMP in the formulation of public-private partnership mechanisms, institutions and infrastructural development affecting honey sub-sectors, and the introduction of new honey production and processing technologies, and to promote public and private sector investment decisions agro-processing industries and agribusiness development and participation in local, national and international markets. The mission also aims to assist government and non-government organization, especially BERSMP, to design intervention strategies to help farmer and other business groups in meeting the increased demand for food and address the challenges existing across the value chain of honey that hinder smallholder producers and business groups from maintaining and expanding their market bases to increase their income from honey production.

1.2 Purpose of the Study

The Project planners have identified three important livelihoods that will enhance both forest and habitats protection and enhances livelihoods. One of these is the honey and bee products. This program will be based on traditional knowledge of rural communities as regards to production, harvesting and trading, both in rural and urban settings. But at the very outset all steps in the value chain are considered to have major problems needing to be addressed by the sector involving the **project stakeholders, the communities and the private sector**. The linkage of the private sector and honey and bee products producers and their institutions (**Farmers Groups, Primary Cooperatives or multi purpose Coops, and Farmers Unions**) is considered essential along the **value chain to effectively link production, processing, value additions and the market**. The **objectives of the study** were therefore to:

- Identify honey business development challenges and opportunities using the value chain analysis
- Identify private sector investor(s), and;
- Establish working linkages between the private sector & local producers

The study has resulted in the **preparation a value chain analysis report on apiculture sub-sector and of a business plan** for the sector with due regard to other related livelihoods. The implementation of the Project will thus contribute to the socio economic betterment of the producers and those involved along the value chain and will stop further natural resource degradation. Eco tourism will thus flourish and wildlife and natural habitats conserved.

2 METHODOLOGY

This task used a range of different methods, both qualitative and quantitative; and worked at Local, Regional and National levels. The major methodology used for the mission was sub-sector and value chain analytical framework. This framework recognizes the fact that the value chains need to be more efficient and more effective if the producers and traders are to be competitive in both domestic and international markets. This requires not only the competitiveness of individual producers but also improving the efficiency of all of the elements of the sub-sector from production, to processing, handling, distribution, and marketing.

2.1 Secondary Data Collection

Readily available secondary data were collected and analyzed. The secondary data were collected on honey production and post-harvest operations at farm gate, rural market, wholesale market, retail market and processing operation. The secondary data collected include: production, yield, prices and level of exports from the Central Statistical Authority (CSA) and the Customs Authority. Other sources of the secondary data were SOS Sahel's reports. The information collected includes honey production and export, existing processing industries (agro-industrial operations) and marketing systems. In addition, review of relevant literature on honey production, processing marketing, and utilization was undertaken.

2.2 Primary Data Collection

To collect primary information, interviews with focused groups and key informants and personal observation were undertaken. Two major honey production Woredas were selected for the field visit. These are Goba and Delo Mena Woredas of the Bale administration zone. The Woredas were selected in such a way that any future honey production and marketing interventions in these areas have significant impact on the livelihood of the smallholders. Focus group interviews with producers and traders were conducted at each Woreda by the consultants themselves. Discussion guide lines were developed and used to facilitate the

focus group interview. Key informants (knowledgeable observers of the sub-sector) were also identified and interviewed in order to obtain their views, opinions and suggestions about constraints and opportunities. For this purpose, semi-structured guiding questions were prepared for use in interviewing different types of key informants in the sub-sector. The key informants interviewed include: experts, local traders, wholesalers /retailers, processors, distributors and end users, the staff of BERSMP, BFE, local staff of ministry of agriculture and association of honey processors and exporters.

3 OVERVIEW OF BEEKEEPING IN ETHIOPIA

In this section, the historical tradition of honey production and use, economic significance and market channel of the sub-sector are discussed.

3.1 History and State of Resource Base

Historically, Ethiopia has been an important honey and beeswax producing country dominated by local consumption. Traditionally honey consumption is in the form of *Tej* (honey wine) and *birz (non-alcoholic)* and some for medicinal use. Annual honey consumption nearly equals annual production, currently estimated at 43,000 tones. In the country, beekeeping is an integral part of the life style of the farming communities, and except for a few extreme areas, it is a common practice in every place where humankind has settled. In addition, Ethiopia has probably the longest tradition of all the African countries in beeswax and honey marketing. The time is immemorial as to when and where marketing of honey and beeswax has been started in the country. Plentiful forage availability coupled with favourable and diversified agro-climatic conditions of Ethiopia create environmental conditions conducive for the growth of over 7000 species of flowering plants which has supported the existence of large number of local honeybee colonies (*Apis mellifera*) in Ethiopia. It is estimated that over two million bee-colonies in the country exist in the forest and crevices. The density of hives occupied by the honeybees on the land may be the highest, at the present moment, of any country in the African continent (Ayalew and Gezahegn, 1991). In general, the potential areas for honey and beeswax production in the country include Southwestern, Western and Northwestern parts of the country (ARSD, 2000; Gezahegn, 2001). These are grouped into high, medium and low potential areas. More specifically, southwestern and western areas of Kefa zone, Masha, Tepi, Dembi Dolo, Gerra, Limu, Metu, Yayu-Hurumu, Seka Chekorsa, Shebe do have high honey production potential. These areas are covered with abundant forest, shrubs, bushes and comparatively less cultivated. Areas covered with moderate forest trees, shrubs, bushes, herbs and cultivated crops such as the southern, southeast and the northwest zones, and Central high lands of the country have medium potentials for beekeeping. These include most of the areas in west Gojam, south Gondar, Jimma, west shewa, Bale, Borena and Gofa. On the other hand, many of the districts in Tigray, Wollo and Hararge and in some other parts of the country which are covered with marginal forests do have relatively low potential in honey production.

3.2 Economic Importance

3.2.1 Production and Consumption of Honey

Based on their level of technological advancement, there are three types of beehives used for honey production in the Bale area. These are traditional, intermediate (transitional) and frame hive (box) beehives. The traditional beekeeping accounts for more than 95% of the honey produced and nearly all the beeswax produced in the area. However, the intermediate hive is said to be the most appropriate for the resource poor as it requires low skill and low cost of production, but significantly higher yield than the traditional one. The average productivity of the three types of hives is indicated in Table 1. Information from the Ethiopian Quality Standard Authority indicated that, regardless of the type of hives, both honey and

beeswax produced in Ethiopia do fit to the internationally required qualities if properly handled (for details see in the Tables A1, A2 and A3 in the Annex).

Table 1: Productivity of Crude Honey in Ethiopia

Hive Type	Yield (Kg/hive)			
	Farmers Yield	Research centre Yield	National Average Yield	Potential Yield
Traditional	3-5	Na	5	10
Transitional (Intermediate)	10-15	15-20	18	40
Box hive (Framed hive)	15-20	20-30	15-20	60

Source: Holota Bee Research Centre, 2003

Na: Information not available

As stated by Ayalew and Gezahegn (1991), Ethiopia is the leading honey producer in Africa and one of the ten largest honey and beeswax producing countries in the world. Volume of production of crude honey and wax has been slightly increasing over the period of observation (Table 2). The national average honey produced for the year 1997 to 2004 was estimated at 30 thousand, which accounted over 23% of the total African production and about 2% of World honey production (MoARD, 2005). The annual honey production of the country in 2007 was estimated at 43,000 tones. Production of beeswax was 3.0 thousand tons per annum placing the country among the four largest world beeswax producers.

Table 2: Trends in National Production of Honey and Beeswax ('000 tons)

Years	Hive Products	
	Honey	Beeswax
1997	28.0	2.8
1998	28.5	2.85
1999	28.5	2.85
2000	29.0	2.9
2001	30.7	2.9
2002	31.0	3.1
2003	32.5	3.2
2004	32.5	3.2
National Average/year	30.1	3.0

Source: MoARD Report, 2005

Honey has long traditional and cultural values in Ethiopia, like as article of trade in old days, as a gift largely in dowries during marriage, as an important ingredient for honey mead (honey-wine) locally called tej and beeswax used to produce light particularly in the Orthodox churches. Beekeeping as a business is a recent development. Presently, Honey is a cash crop for almost all beekeeping households. The large portion (70%) of the marketed honey goes to the production of local beverage called (tej) and around 30% is used as a table honey. However, today, many table honey processing plants are flourishing and some have started to process and market table honeys for local and export markets. Hence, even if production technology is still far behind, honey product is being highly commercialized (Dr. Beyene, 2007).

3.2.2 Honey and Beeswax Export in Ethiopia

Honey Export

Honey and beeswax contribute considerably to the national economy through export earnings. Before economic reform (1984 to 1990), an annual average of about 4.6 tones of honey was on the world market and sold at an average price of 7.2 Birr per kg, resulting in a total average annual earnings of about 33,120 Birr. Both national export supply and world price of honey at that period was highly fluctuating. After the reform (1992-2004), the average annual quantity of supply to the world market surprisingly decreased to an annual average of 3.5 tones, but the world price rose to an average of 20.8 Birr per kg (partly due to devaluation). During this period, the country obtained over 82,000 birr from the export (more than two fold higher than before the reform). Thus, increase in total return from export of honey was largely due to the price effect (Dr. Beyene 2007).

As can be observed in Table 3, Ethiopia's honey export is negligible compared to the estimated production per year. This is mainly because of four reasons. First, the largest portion of the marketed honey goes to the production of a local beverage called tej. Second, there is a high domestic demand for crude honey, and as a result it appears that local prices are most often higher than the world prices for honey. For instance, while the international price ranges from 15.46 Birr/kg to 20.60 Birr/kg the local price was 23.10 Birr/kg on average during the years 2000-2004. Third, significant amount of honey is being exported informally to the neighboring Arab Countries and the Western world. For instance, the Addis Ababa Bureau of Agriculture estimated that 48 to 85 tons of honey is moved out of the country by passengers to various countries of the world between 1994 and 2000. Fourth, honey obtained from traditional hives is crude and cannot compete in the world market. Recently, many table honey processing plants are flourishing and some have started to process table honey for local markets. According to the Ethiopian Customs Authority and Export Promotion Agency (2006), export of honey is destined to Middle East Countries namely Saudi Arabia, Kuwait, United Arab Emirates, Iran, Yemen and others like Djibouti, Sweden, Israel, UK, Canada, etc. As a result of the EU accreditation the Ethiopian honey export is expected to increase in the years to come.

Beeswax Export

The potential export market as well as the domestic market for beeswax is better than the general quality honey. Wax, instead is largely wasted especially in rural areas due to lack of awareness of its market value.

The country has been well known in beeswax trade for a long time. It is one of the important agricultural export products in Ethiopia. The country ranks 4th in beeswax export. Indeed, despite large amount of beeswax produced in the country, less than 10% of the total estimated beeswax production of the country is exported.

Presently, Ethiopia obtains up to 9 million Birr per annum from beeswax export. However, similar to honey export, the volume of beeswax exported drastically decreased after the policy reform as compared to earlier periods. While an annual average of 320 tones of beeswax was exported during 1984 to 1990, the amount declined to an average of 279 tons during 1992 to 2004. Before the reform, the average earning was estimated at 2.1 million birr per annum and the amount increased three fold to the estimated amount of 6.1 million birr per annum after the reform. Similar to the case of honey, price of beeswax increased from an average of 6.6 birr before the reform to 21.0 birr per kg after the reform, and hence the rise in the total value of export from beeswax could also be attributed to the price effect.

Similar to honey, the international price for refined beeswax is lower than the domestic price. It has been observed that an average of Birr 22.75 is generated per kg of beeswax. However

the international price of wax is currently increasing up to Birr 48 per kg. Adulteration of beeswax with animal fats and petroleum has also become a great threat to the industry. These may contribute to the fall in the export volume of the country's beeswax. Export of beeswax from Ethiopia is mainly to Germany, UK, Switzerland, France, Greece, Italy and Japan. Presently, Ghion Industrial & Commercial PLC (GICO) is the largest exporting PLC followed by BWAP PLC (Ethiopian Customs Authority and Export Promotion Agency, 2006).

Table 3: Volume, Price and Value of Honey and Beeswax Export before and after Market Liberalization

Year	Honey			Beeswax		
	Quantity (tons)	Average Export Price/kg	Total Value (Birr)	Quantity (tons)	Average Export Price/kg	Total Value (Birr '000)
1984	18.40	5.93	109,161	756	6.96	5,260
1985	5.90	7.53	44,422	229	7.13	1,632
1986	0.31	6.16	1,885	134	7.01	939
1987	0.56	7.78	4,382	210	6.74	1,416
1988	3.80	12.06	45,845	373	6.66	2,483
1989	0.83	7.62	6,289	325	4.56	1,483
1990	2.20	3.35	7,365	215	6.78	1,458
<i>Average before the reform</i>	<i>4.60</i>	<i>7.20</i>	<i>31,336</i>	<i>320.30</i>	<i>6.60</i>	<i>2,096</i>
1992	0.22	8.23	1,810	130	10.22	1,329
1993	0.86	17.18	14,759	229	17.65	4,050
1994	1.44	17.19	24,759	304	20.19	6,138
1995	0.21	25.12	5,125	325	23.50	7,636
1996	1.29	24.54	31,672	339	26.55	9,000
2000	1.49	18.84	28,083	295	24.93	7,352
2001	2.66	24.33	64,609	226	21.02	4,750
2002	2.99	26.23	78,447	233	20.36	4,743
2003	8.03	15.28	122,704	402	20.02	8,052
2004	15.72	30.61	481,266	305	27.43	8,366
<i>Average after the reform</i>	<i>3.50</i>	<i>20.80</i>	<i>82,159</i>	<i>279</i>	<i>21.20</i>	<i>6,142</i>

Source: Ethiopian Export Promotion Department, 2006

Note: Data for 1997 to 1999 was not available.

3.2.3 Employment

The exact number of people engaged in the honey sub-sector in Ethiopia is not well known. However, it is estimated that around one million farm households are involved in beekeeping business using the traditional, intermediate and box hives. It could be also observed that a large number of people (intermediaries and traders) participate in honey collection and retailing (at village, Woreda and zonal levels). Thousands of households are engaged in tej-making in almost all urban areas, hundreds of processors are emerging and exporters are also flourishing. Therefore, the role of the sub-sector in employment generation is immense.

3.3 Domestic Markets for Honey and Beeswax

There are traditionally two routes of honey processing and marketing, namely:

- Honey into tej and birz and some liqueur route, and;
- Table honey route

In the Bale Region, one can observe that beekeeping is practiced in all of the agro ecological zones. The colder areas (helichrysu, Erica and Hypericum) often produce honey destined for table honeys while the savanna (dry lowlands/savanna zone) for tej and birz end product. The zone lying between these two eco zones produces an area of honey types that if harvested as mono flora makes table honey and the multi flora, mostly for tej and birz depending on the degree of honey processing employed.

Beeswax is the result from the above two major honey products. Traditionally, beeswax separation is little done at production source as done in modern honey processing. Like the honey product, beeswax also uses similar marketing routes i.e. **Delo Mena** to Bale/Robe to Shashamani, or Awassa and to Addis Ababa before it is exported. Unlike many products of most peasant farms, honey is primarily produced for the market. It is estimated that over 90% of the total honey produced in the country is for market sale and very little is consumed at home (SOS-Sahel, 2006). However, for a long time honey market has been all in crude form. Moreover, honey in the local market is sold in poor quality containers such as okolee (made from animal skins), bamboo stems, skin, bags, etc, which are generally not suitable to keep honey in its original quality. Just recently, table honey processing plants are emerging and some started to process and market table honey for local and export markets.

3.3.1 Price of Honey and Beeswax

Time series data on domestic prices of honey and beeswax could not be available, and thus the trends could not be observed. Yet, information from key informants indicates that prices of honey and beeswax are generally increasing over time. The emerging processing plants, development of honey collection and marketing cooperatives, and increasing scarcity of bee fodder largely contribute to the rise in the prices of the products. All crude, processed and/or centrifuged honey have a good domestic market all year round but with significant price change at different market points and seasons. The price variation could be due to spatial and temporal differences and depends on quality of the honey, and color of honey, consumers' preference and choice. Generally, price of honey is high in towns and in off-seasons and very low in remote rural areas and during harvest seasons. That is, the price decreases markedly during harvesting season when supply is high and slightly increases in the off-seasons. Light colored honey, commonly called white honey, commands a higher price than other types of honey. Average market price for crude honey and centrifuged and/or strained/draind honey ranges from Birr 8-16/kg and Birr 18-35/kg respectively. As mentioned earlier, beeswax is another marketable item in the field of beekeeping. However, little is collected and rarely processed at honey production sites due to farmers' lack of information on its market value and know-how regarding harvesting techniques. Official statistical data regarding beeswax price for different locations is not available. However, survey made at Markato (major market place in Addis Ababa) in the year 2000 revealed that crude wax (sefef) was sold at price ranging from Birr 8.00 to Birr 12.00, partially processed wax (keses) from Birr 15.00 to Birr 18.00 and the refined beeswax from Birr 24.00 to Birr 35.00 per kg. Similarly, survey made in 2005 revealed that 'sefef', 'keskes' and the refined beeswax were sold at a price ranging from Birr 12.00 to 15.00, 17.00 to 25.00 and 35.00 to 40.00 per kg, respectively (MoARD, 2005).

3.3 2 Key Actors and their functions

Beekeepers (small scale farmers), local honey collectors, cooperatives, tej houses, big honey verandah (wholesalers) in Addis Ababa, honey processors, beeswax processors, retailers, input suppliers and exporters are the major actors in the apiculture sub-sector. Classically, it is often used to refer to a middleman/small trader who can pick smaller quantities. It was also noted that there could be overlapping activities. For instance, it appeared that the collectors and the wholesalers also do retailing activities. Table 5 summarizes the major functions of the key actors along the value chain of the sub-sector. There are no reliable data on the number of these actors in the country.

- **Beekeepers**

Traditional hives for honey production are produced by the farmers themselves, and the improved hives and their accessories are usually supplied by the Woreda Agriculture and Rural Development Offices. The other functions undertaken by the beekeepers include honey production, harvesting, transportation and selling at local markets. These functions are largely undertaken by men. The majorities of bee keepers sell crude honey and only in few instances undertake some form of intermediate processing; that is, separating wax from crude honey. Bee-keepers sell crude honey (never produce beeswax) to tej brewers (which is a major outlet) and/or to collectors and transit consumers at the local market.

- **Honey and wax Collectors**

Collectors play important roles of bulking, grading and sending the products to the various market outlets. The collectors (particularly the cooperatives) undertake semi-processing to just separate honey from wax, and produce honey jelly and crude wax and store independently for sale. Besides, semi-processing activities (without totally removing the honey from the wax) , the collectors add value to honey by making spatial and temporal differences (i.e., collecting from distant location to make easily available to the user and storing for future use for long).

Alike the beekeepers, the collectors sell the largest proportion of crude honey and crude wax to tej-makers. They sell selected crude honey or semi-processed honey to processing plants predominantly located at Addis Ababa. Small collectors also sell honey to local or transit consumers or dealers at zonal towns and then to the big markets in Addis Ababa (verandah). Recently plastic pails with airtight lid and fertilizer bags have come to a wide use for transporting.

- **Tej Brewers**

Tej brewers are seemingly processors of honey and beeswax. Their primary function is to produce tej and birz (non alcoholic tej) out of crude or out of semi processed honey. Wax is the by-product of tej. Tej producers remove the crude beeswax (called *sefef*) from the tej and allow drying. They produce partially refined beeswax (called *keskis*) by melting the crude beeswax (*sefef*) with sufficient water and then straining using sisal sacks. Therefore, in addition to tej, these actors produce a significant amount of wax. These actors normally sell the crude or refined wax to wax collectors; though there is a possibility that a few large brewers may directly sell crude wax to wax processors.

- **Retailers**

As described above, collectors and wholesalers in Ethiopia do also act as retailers since they sell small quantities of honey directly to consumers. Retailers comprise some of the integrated suppliers who sell both honey and wax products to local consumers. These include supermarkets (especially in Addis Ababa), small shops in rural villages and urban centers.

- **Processors/Exporters**

Processing companies are usually exporters of honey and beeswax. Exporters search for information on world price and create market linkages. To date, not more than 10 exporters of honey and beeswax are present in the country.

Table 4: Summary of Actors and Functions in the Apiculture Sub-sector

Value chain	Actor	Function
Input supply	<ul style="list-style-type: none"> • Farmers • Woreda Agriculture and Rural Development office • Woreda/Zonal level merchants 	<ul style="list-style-type: none"> • Provide bee colonies • Prepare hives • Produce supplementary feeds • Provide training & technical advice
Production	<ul style="list-style-type: none"> • Small scale farmers using subsistence methods and practices 	<ul style="list-style-type: none"> • Attending, shelter preparation and cleaning • Provide supplementary feed • Forage plant planting • Inspecting (honey bee management)
Harvesting and post harvest handling	<ul style="list-style-type: none"> • Small scale farmers 	<ul style="list-style-type: none"> • Honey harvesting • Gathering price information • Handling and transporting to market places
Honey and wax collection at local markets, Woreda and zonal towns	<ul style="list-style-type: none"> • Local traders/merchants • Honey collector and marketing cooperatives • Agents of processor 	<ul style="list-style-type: none"> • Collect honey from farmers at local markets • Collect wax from tej houses • Checking quality, grading • Form market linkages with other regional or local dealers
Honey collection (wholesalers) in Addis Ababa	<ul style="list-style-type: none"> • Honey verandahs 	<ul style="list-style-type: none"> • Honey collection • Store honey • Preliminary processing (sometimes) • Gathering market information
Tej processing	<ul style="list-style-type: none"> • Tej processors 	<ul style="list-style-type: none"> • Produce tej and berz • Produce wax & partially refine it

Honey and wax processing and Export/domestic marketing	<ul style="list-style-type: none"> • Honey and wax processing units (Addis Ababa) • Exporters 	<ul style="list-style-type: none"> • Collect, temporarily handle, grade and process honey and wax to their purest form • Distribute the processed products to foreign buyers and local super markets
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Source: SOS-Sahel, 2006

3.3.3 Principal Value Chains

A value chain is the full range of activities which are required to bring a product or service from conception, through the different phases of production (*involving a combination of physical transformation and the input of various producer services*), delivery to final consumers, and final disposal after use. *Kaplinsky and Morris, 2004 p4*

Generally, there is no well organized market chain for honey and beeswax in Ethiopia. Based on the consultant's observation, the channel of the sub-sector could be broadly viewed in terms of honey and beeswax value chain (for better understanding of the channel see Figure 1).

Honey Value Chain Mapping

The honey channel consists of the tej brewery channel and the honey processing/exporting channels.

- **Tej brewery Channel**

Presently, most of the honey harvested goes through tej brewery channel. In this channel, many actors are involved at different levels. Yellow honey is usually preferred for tej and berz. Beekeepers directly sell their honey to local honey collectors (dealer or cooperatives) at Woreda or zonal levels. Then, the collectors sell the honey to tej houses in their localities and/or transport it to the big honey dealers at Addis Ababa. The big honey dealers supply the honey to tej houses. Some collectors (e.g., cooperatives) also sell crude honey to tej processors from which they can make berz or use for coloring. Some beekeepers who are producing large quantities of honey also directly supply to tej houses in their areas. It was also noted that beekeepers directly sell to consumers in their locality. Although economically not so significant, tej is informally exported through country visitors and transitory.

- **Honey Processors and Exporters Channels**

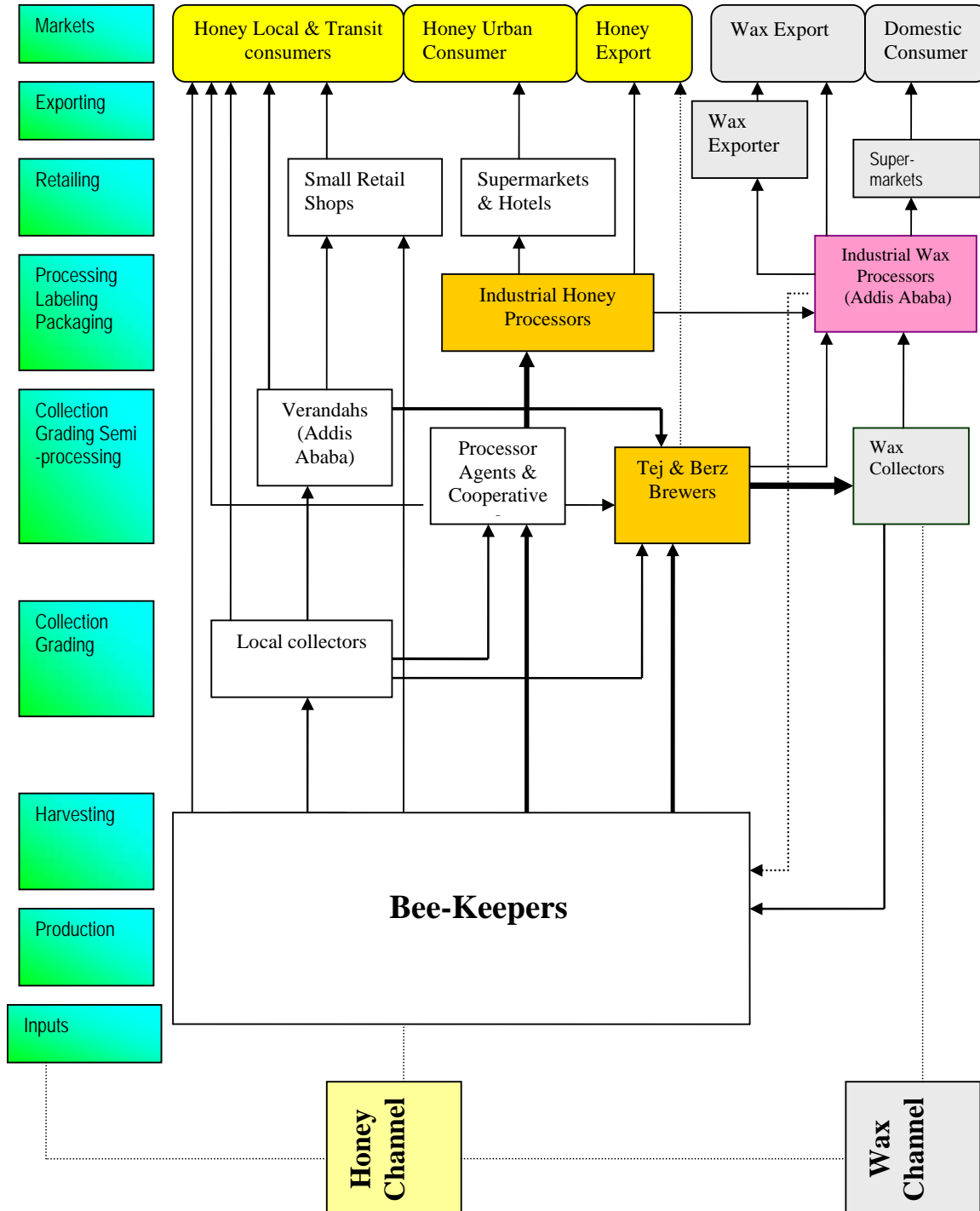
Honey processors and exporters channels also start from beekeepers with stronger supply chain linking along the value chain to maintain sustainable supply with a desired quality. The local honey dealers (local agents of honey processors) and/or honey collectors and marketing cooperatives collect selectively a good quality honey from beekeepers that can be processed into table honey. As mentioned earlier, these actors sometimes undertake semi processing to separate the honey jelly from beeswax. Then, agents and cooperatives sell the honey to the high level honey processing plants either after partial refining or as crude. The processing plants further refine the honey using advanced processing devices and pack into labeled containers for local markets (super markets, food groceries and big hotels) and very often to export markets. It was also noted that the cooperatives do also sell crude or semi-processed honey directly to consumers.

Beeswax Value Chain Mapping

Since most of the crude honey goes for tej production, the primary suppliers of crude beeswax are tej houses, after collected as by-product of tej or berz products. The tej brewers either sell the crude beeswax as it is in the form of *sefef* or *Keskes*. The local beeswax

collectors buy the sefef and/or the keskes from tej houses and supply to beeswax refiners in Addis Ababa. The beeswax refiners process both the sefefe and keskes into final pure beeswax suitable to export market and local markets. The refined beeswax is also demanded by the beekeepers particularly as an establishment input (foundation sheet) for the improved beehives. Note that had the farmers known the values and methods of extracting beeswax, they could have obtained two benefits: add value to their honey by offering more refined honey to the market, and obtain beeswax for sale and get additional revenue or reuse for further production and reduce cost of inputs.

Figure 1: Honey and Wax Market Channels (SOS Sahel Ethiopia 2006)



4 CURRENT PRACTICES OF HONEY PRODUCERS IN BALE AREAS

4.1 General

Beekeeping, through increased bee forage availability year-round is possible in Bale areas. However, the planting and cultivation of trees and perennial crops is to be advanced over the traditional rain-fed arable crop farming which depletes tree and woody vegetation cover and over all land productivity over time

The livelihood of the people in the Bale areas is based on subsistence farming. Major sources of income include crop production, forest coffee, livestock husbandry and beekeeping. This area receives relatively high rainfall and has forest areas suitable for beekeeping. High wild bee colony population, long experiences of beekeepers coupled with available natural flora (honey plants), presence of forest coffee and water sources have created good opportunities to produce honey with high yield. Production system of honey is purely organic that has high potential in the world market. The area also has high potential for mineral water and eco-tourism that attracts private investors.

4.2 Production Technologies

Three distinct types of technologies were observed in beehives used by the visited beekeepers. These were traditional, transitional and box type of bee hives. The intermediate and box (improved) beehives have been recently introduced in the area. The use of top bar beehives was presently absent in the visited areas except in Delo Mena and Harena Woredas which is a recent phenomenon and the number is insignificant compared to the number of beekeepers. Beekeepers usually make the traditional beehives by themselves and all of the intermediate and improved beehives were purchased. The price of traditional beehives in the area is about Birr 30.

Table 6: Type and Number of Beehives Owned by beekeepers in the three Woredas

Type of Beehives Owned	Woreda		
	Goba	Delo Mena	Harena Buluk
Traditional	19,803	37,500	21,423
Transitional		24	13
Box/frame	95	170	28

Source: Survey data

As portrayed in Table 6, beekeeping was practiced at a very small scale level. The number of bee colonies owned by household beekeepers was generally low and varied from 2 to 60 colonies as revealed in the focus group discussion in Goba Woreda. The beekeepers do not have the skill of reproducing bee colonies as one of the sources of obtaining additional colonies. During the dry seasons, bees migrate from low land areas to highland areas in search of feed. Colony marketing is not widely practiced in the areas. The box hives are distributed to beekeepers at a subsidized price of Birr 300 per hive from Birr 510. But the accessories are not complete and some of the hives have dimensional problems. The producer group in the Robe area reported a better penetration of box bee hives. The over all rate of empty hives was 30% where traditional hives had a lower rate of absconding. This group also reported a higher yield per hive and reported a gradual decline of bee forage resource. No modern apiary exists and all source of forage is the forest. Regarding the introduction and use of frame (box) hive, farmers reported problem of some hives not well

made with wide space affecting the colony performance (dimension precision problem). The purchasing price was reported to be high for them to buy on cash and the harvesting equipments and accessories are not complete and they lack adequate training which was disputed by the technical staff from the government who did not accept this complaint from farmers in full. The farmers reported that fuel wood from the forest is becoming increasingly an important economic activity instead of the honey business.

Table 7: Differences Between Traditional, Low-cost Top-bar and Frame Type Hives

No.	Parameter	Traditional Beehive	Low-cost Top-bar Beehive	Frame Type Beehive
1.	Cost of the hive	Low - In most cases farmers make their own hives with locally available materials, if not it is still very cheap.	60 birr - The main hive is constructed from locally available materials and can therefore be free, but top-bars need precessions and often have to be purchased from carpenters. If the main body of the hive is constructed from timber then the hive will be expensive.	Birr 550 (without subsidy) - the whole hive is made from timber, which ensures a high price. In addition the manufacture requires a high level of precision, which increases the expense and ensures dependency on external manufacturers (carpenters cannot achieve the necessary level of precision).
2.	Accessories	Farmers keep bees in traditional hives without using accessory materials like extractor, casting moulds etc.	Top-bar hive management needs protective clothing more than the traditional hive since it is opened more than the traditional hive	This technology is very dependant on other inputs: honey extractor; casting moulds; protective clothing, queen excluders, frame wires, etc.
3.	Management	There is a long-standing local knowledge, which is passed from farmer-to-farmer, and from generation-to-generation.	Top-bar hives are easily managed, but as this is a new technology, training on how to take the maximum advantage of the new hive is necessary.	It needs a high level of skill.
4.	Comb condition	Fixed comb – difficult to inspect, and during harvesting many bees and the brood are killed.	Moveable comb – easy to inspect and harvesting doesn't kill bees and brood.	Same as top-bar hive.
5.	Swarming	Swarming is not under the control of the beekeepers	Swarming is partially under the control of the beekeeper. There is the potential to manage swarming.	Same as top-bar hive.
6.	Honey production	Low production (up to 18 kg crude honey) and inferior quality as the honey is mixed with the brood, died bees and unripe honey. Production in subsequent seasons will be much reduced because of damage during harvesting.	Harvest of up to 45 kg is often achieved annually. Good quality as it is possible to separate the ripe honey from the remaining hive content. Honey harvest will remain consistent, as the hive is not damaged during harvesting.	Harvest of up to 45 kg and sometimes more is achieved annually. Good quality as it is possible to separate the ripe honey from the remaining hive content. Honey harvest will remain consistent, as the hive is not damaged during harvesting
7.	Beeswax	Up to one kilogram harvest per year	More than one kilogram per year	Very minimum, in fact wax is an input into frame hives, although bees will add to it.
8.	Colony reproduction	Impossible	Colonies can be easily reproduced by simple colony splitting techniques. From small trials queen rearing is also possible	Queen rearing technique is possible and highly developed
9.	Harvesting of other bee products	Brood is sometimes consumed within the household (although this has a negative effect on honey production).	Other bees' products can be harvested from this hive.	Other bees' products can be harvested from this hive.

4.3 Beehives Management

Bee hive management is currently not practiced by farmers, especially seasonal management of the colony to reduce absconding and increase yield. The overall colony number appears to be on decline caused by several factors. Seasonal fluctuation of bee forage supply and cold temperatures in the Wurch and Dega zones may be major factors, but field workers look at the forest and dismiss this while farmers report migration of colonies from highland (dega and woina dega) area to lowland, based on seasons. In most of the Bale area, nearly all farmers placed their beehives on high tree branches far away from their residential houses. There are only few farmers (in Rira) who put their beehives at their backyard and under roof. This implies that the beekeeping in the area is a very traditional forest beekeeping. As else where in the country, the management for honeybees is very minimal in the Bale areas. Honey bee colonies naturally sustain themselves and produce honey by foraging from natural and cultivated crops in all possible radiuses from their nests. The farmers do not visit their bee colonies and there is no evidence of bee forage cultivation and provision of supplementary resources. .

4.4 Harvesting of Honey

The rate of hive absconding is reported to be high, especially following harvest. Excessive use of smoking during harvest and destructive ways of honey harvest are said to be the main causes. Some farmers mentioned cold weather on the tall trees for bee abscondment. In most cases, the bee hive is brought down to the ground during harvest and the use of smoky fire during harvesting in the ground is very damaging to the colony and quality of the honey harvest that affects the flavor of the honey as was found during sample collection and testing of the product. There are no farmers who use bees brushing and protective materials during harvesting. In Bale, there are two major honey harvesting periods for each Woreda depending on its agro-ecology. The harvesting periods correlate with availability of moisture and peak flowering period for many honey plants including crops. The existence of different harvesting season shows the possibilities of harvesting and supplying of different types of honey at different time implying the possibility of continuous supply of honey along the market chain.

Table8: Harvesting seasons by Woreda

Harvesting season	Woreda/moth		
	Goba	Delo Mena	Harena Buluk
Major	October-Dec	Feb.-March	Feb.-March
Minor	April-May	August-September	August-September

Source: Survey data

Honey yield is higher in the major harvest than in the minor harvest. Using the traditional methods, the average productivity of honey in the three Woredas is more or less the same. There are high production risks in some areas because of exogenous factors such as honey badger. As it is expected, the potential productivity (the maximum yield) of the intermediate and box beehives, as reported by the beekeeping specialist of the zone, is (40 to 50 kg/hive) higher than the traditional beehive (5-9 kg/hive).

Two types of honey were dominantly identified during the field survey. These include:

1. **Yellow honey:** This type of honey is widely produced in the country including Bale. The sources of the Yellow honey are expected to be hypericum, croton and the like.
2. **White honey:** this type of honey mostly comes from nectars of specified trees locally called **Gatame** (*Schiffleria abyssinica*) and **Eucalyptus** (*Eucalyptus globules*).

4.5 Storage/Packing Practices

Containers used for harvesting and to transport to the nearest market are generally of low standard. The use of animal skin with or without plastic inlay is most common. The bulking of the honey by the traders is also not of standard nor when brought to the weekly open markets in towns as was observed during the Saturday market in Bale Goba as well as in the retail shops. Honey storage and packing practices are below standards for honey which is highly moisture odor absorbing. No real attempt is made by producers and primary traders to safe guard this problem that often results in bad and unmarketable quality of honey. Animal skin with or without plastic inlay is used to store in bulk or in transporting to the market and honey traders. Some plastic containers are used but are not often kept clean. The strongest evidence of this storage and packing practice was a stop visit to the honey section of the weekly markets and honey traders shops.

4.6 Processing Practices

The lack of separating wax and other impurities makes an unpleasant site when observing this honey that appears unfit to consume as one expatriate health expert visiting Delo Mena market stated. The study team visited and observed this condition at all levels (production, harvesting, transporting, and product storage) making it mandatory for the private sector to enter to provide these facilities and marketing of end products. The **tej** and **birz** house were also visited, including the **Association of Retired Civil Servants premise**. The case of beeswax handling leaves more room for improvement as observed at the source as well as at retailers and whole sellers in Bale Goba. Only few beekeepers strain their honey (separate honey from wax) before selling using nylon clothes, the sun or sometime by hand. The farmers who do not strain honey reported that they lacked knowledge of straining as well as materials. In general, in the visited areas, processing of crude honey into table honey and the crude beeswax into pure form was not practiced by the beekeepers. Beeswax was not often harvested for market in the areas, but only few farmers do so for home use. The major reason was lack of knowledge of its use and how to harvest it and absence of demand in the local market. There are farmers who even do not know that beeswax was a sellable product.

4.7 Marketing of Honey

The study noted that typically producers sell their fresh and unprocessed honey to the local markets or to the local trader The tej house is important buyers in the local market. The local traders bulk and sell to bigger towns such as Bale and Robe. The product then moves to other farther destinations such as Negelle Borena, Awassa and Addis Ababa. Smaller quantities move with individuals traveling from Goba/Robe to other destinations, including to Addis Ababa. Producers take their honey to the market places carrying the produce by themselves. As the quantity of honey to be sold on a specific market day by each producer was not so large other means of transport was not required. Yet, some beekeepers use donkeys to take their honey to market places when they have large sales. A sale of honey on road-side or on farm or at home is not significant. As honey is a cash crop, most of what farmers produce is brought to market. The Market for honey is generally not well developed in the areas mainly due to limited number of buyers relative to the number of producers (suppliers). The local collectors (traders) in the areas lack knowledge of quality handling and lack basic business concepts (do not have sense of competition, poor in client handling, weak in information gathering, etc.). They also lacked facilities like proper container and processing materials. Honey selling is done by simply visually estimating the volume or based on negotiation. Producers grade their honey for sale based on personal evaluation, but there is no given standards for quality differentiation. In Bale, collecting and selling of beeswax by beekeepers is not known. Wax, instead is largely wasted especially in rural areas. So the marketing of beeswax starts from tej brewers, after the beeswax is collected as a by product of tej production. There are price variations based on the color of honey,

time and location. According to most farmers' opinion, yellow honey is most demanded in the local market because this type of honey was most preferred for tej brewery (the important buyer in the area). Yet, its price is relatively much lower than the white honey preferred for table honey. Local unrefined honey sells for 13 Birr/kg (11 to 14 ranges). Processed honey (wolela mar) sells for 22 Birr/kg in the area and still higher in Addis Ababa. The processing of honey into table is reportedly more profitable while it takes a much inferior quality of honey compared to table honey. It is the table honey type that is eventually exported in a well packaged (glass containers and labeled accordingly (wild, organic honey, or mono flora honey, etc). Beeswax sells for 12.5 birr/kg as it leave the birz and tej houses and sold to the main dealer in Bale town. The dealer/trader gets 0.5 kg per crude beeswax. The trader incurs high cost in firewood and labor and transport before the good reaches in Awassa or Addis Ababa. The lead trader (Abdela Hassen) retails it for 29-30 birr/kg in Addis Ababa. This transaction does not yield any profit and plans to discontinue. The potential export market as well as the domestic market for beeswax is better than general quality honey. The private sector will make the difference in this, both in the recovery and quality for export.

4.8 Constraints and Opportunities

Natural conditions in the rural landscapes are changing for this age-old traditional beekeeping to be sustained while new opportunities as stated above are not being effectively harnessed for beekeeping. Trees and woody perennials as well as vegetation land cover have generally declined over time with the expansion of agriculture and increased livestock production under the open grazing system of land use. Currently beekeepers in the Bale areas are facing a number of interrelated problems and constraints that limited productivity and production of honey. To identify major constraints of the honey sub-sector in the area, a review of literatures and thorough discussions were made with key informants such as representatives of concerned government and non-government institutions, collectors, wholesalers, retailers, processors and professionals. Accordingly, some of the principal constraints are highlighted below.

1. Low quality of honey products: because of inadequate knowledge at all levels (particularly farmers and intermediaries) the natural quality of honey and the sanitation is not maintained in the process of harvesting, storing and transporting. Excessive use of smoking during harvesting and adulteration are underlined as serious causes of the problem. Consequently, most of the honey currently produced and marketed is poor quality unsuited for processing and export.
2. Lack of organized marketing channel: at present, there is no strong and formally organized market channel for honey products in the area. This resulted in lack of grades and standards, in poor quality control, inadequate and inconsistent supply to the wholesalers and processors making a critical problem to the processors and exporters. The present low involvement of private sectors in processing and export of honey products could be partly attributed to these problems.
3. *Poor extension services and lack of trained human power (experts) at Woreda level:* The primary problem is that there is shortage of trained and experienced bee technicians at grassroots level who can provide technical advice to beekeepers to improve beekeeping management. The personnel in the Office of Agriculture and Rural Development working at Woreda level (Development Agents) lack adequate knowledge to undertake improved beekeeping technologies.
4. Lack of access to world market: despite the fact that globalization or market integration is widely advocated in this era, many stakeholders interested to involve in export of honey and honey products are suffering from lack of certification to be accredited to fit into the international quality standards. There is a clear restriction by European Union of imports of honey products from poor countries like Ethiopia.

5. *Absence of improved smokers:* this caused many farmers to refrain from beekeeping and those currently practicing are also forced to make poor inspection and to use excessive smoking while harvesting which reduce the quality of honey.
6. *Shortage of commercial honeybee colonies.* This is partly attributed to the decline of forage due to deforestation, occurrences of honey bee pests and predators which ultimately resulted in frequent absconding of colonies and high migratory tendencies
7. *Lack of knowledge:* farmers lack knowledge not only in production but also honey harvesting (e.g., use of too much smoking), proper storage system, processing and grading. It was also noticed that farmers virtually do not harvest beeswax, and thus lose tremendous benefits.
8. *Unavailability of improved technologies:* improved (modern) technologies in honey production and processing are neither widely available in the open market in the rural areas nor adequately transferred by the responsible government institutions. In all observed areas there is serious problem of lack of appropriate technologies for production, collection, processing, packing and storage in potential apiary development areas. It should also be underlined that the traditional beekeeping system largely excludes women from participation.
9. *Lack of credit service:* in areas where improved beehives are available in the market farmers are not able to purchase improved (intermediate) beehives because of lack of cash. The problem has also forced the beekeepers to sell all or the largest proportion of their harvest at low price immediately after harvest, and thus they obtain lower benefit.
10. *High price for improved equipment.* the apiculture equipment are expensive relative to the purchasing power of the beekeepers and unavailability of credit services
11. *Poor infrastructures:* High potential honey production areas around Bale are located in remote areas where road and market infrastructure are relatively poor. Consequently, beekeepers lack access to information on prices and technologies. In such areas farmers face low and discouraging price for honey.

Despite all these problems and constraints, there are still a lot of opportunities to gain from this sub sector in Bale in the future. Although there is a clear indication of decline in the forest coverage, there are still immense resource base (if properly conserved and managed) that can provide huge opportunities for apiculture. The Oromia government has recognized the role of the apiculture and has put in its development agenda, mainly as a non-farm income generating activity, to increase income of the rural and urban households and to promote the export sector. There is an encouraging support from the government and NGOs (Farm-Africa and SOS Sahel Ethiopia) to develop private sector enterprises in apiculture in the Bale Areas. It should be also understood that the road infrastructure and the telecommunications sector are increasingly improving (though a lot still remains). This will give a possibility of reducing transport cost and improving the market efficiency. The government policy also highly encourages private investments in the processing and export of such products. Coupled with the government support, the increasing intervention of NGOs (like Farm-Africa and SOS-Sahel Ethiopia) in the production, processing and marketing (including exports of honey products) and the existence of several concerned associations are expected to create a breakthrough in the production technologies and market development in the honey sub-sector. On top of the above, the existence of a longstanding beekeeping tradition and different harvesting seasons in the Bale area adds on the opportunities of beekeeping sub-sector.

5 FELT NEEDS AND CONCLUSIONS

At this juncture, it should be obvious that the Bale area has ample natural resource base (as explained by the diversity of flora in this area) to produce organic honey and that there is

huge and increasing domestic and foreign demand for this type of honey and wax. The important question is then, how can the smallholder farmers, traders and processors capture these values? This section presents the results of needs assessment made with the stakeholders at different levels.

5.1 Technological Needs

It has been observed that almost all of the beekeepers in the area are producing honey using traditional hives while it is possible to produce two to three fold using intermediate and box hives. Honey harvesting and storage systems are also too traditional, processing and value adding is nearly non-existent. In general, farmers harvest low quantity and market poor quality honey and the supply available along the value chain is not sustainable. The farmers also need to meet strict quality criteria and ensure sufficient quantity of produce and continuity of supply. This has implications for policy makers and research and extension agenda. Participatory extension and research needs to be promoted to stimulate local innovation. Thus, there are critical needs for introduction of intermediary and box beehives and training on apiculture farming; supporting and demonstrating practical apicultural tools for small holders; establishing linkages between apiculture farmers and private business that is capable to transfer technologies appropriate to farmers and work for common benefit.

5.2 Packaging and Handling Needs

For the production of high quality honey and beeswax, improved pre and post harvest management of honey and bees wax are critically important. These are in the areas of:

- harvesting and processing
- grading and standardization
- packing and handling, and
- transporting conditions

There is a lot of scope for encouraging small scale honey vendors (who may or may not be beekeepers) to pack and sell honey in locally available food-graded containers in recognizable form and places, building up a name for themselves. Training and encouragement of small-scale honey producers and traders would lead to greater success in beekeeping.

5.3 Business Development Service

An assessment of the current situation of beekeepers in the area indicates that individual smallholder farmers and the extension service providers lack knowledge of the markets. Their capacity to deal as equal partners in local & international markets is very low. Particularly, farmer beekeepers and bee product traders must become adept at financial planning and control, forecasting, deal making, logistics and quality control. Hence, they need business development services.

5.4 Product Development and Promotion

The workings of the honey and beeswax market are complicated because, although there is an international price for these production in the western countries (in America, Europe, and Asia), export prices from individual countries vary widely and depend on product quality, demand for particular varieties and the reputation of the exporting country. So, taking the advantage of producing organic honey of different varieties in Bale, it needs to work hard on product development and promotion to penetrate the world market by the exporters with the assistance of government, NGOs and the private sector. It also seeks to change unfair local & international marketing structures and to offer small-scale farmers in the area the chance to find outlets for their produce and to make a decent living from the sale. The steps taken by

the Amahara bees products development and marketing cooperatives are good learning processes; they have labeled their bees products and developed a trade name, AMAR, and received Organic Certificate and they linked themselves to the private sector to penetrate the high potential markets. It possible to brand honey of this area as “Hypericum honey” or “Geremba honey” or “Bale mountains honey” or “Harena Forest honey” because brand is one of the driving forces of market.

5.5 Institutional support Needs

The major institutional and related facility support needs to enhance the apiculture development are enumerated as follows:

- Increasing training centers in each high potential area to introduce new and/or to fill the existing knowledge and skill gap at all levels;
- Production of technically and financially feasible apiculture equipment such as intermediate (transitional) and box beehives, honey extractors, and honey presses and their auxiliaries;
- Controlling adulteration
- Empowering and enhancing women's participation in apiculture- it was observed that husbands (males) take full control of beekeeping and all the benefits. The nature of the traditional beekeeping (e.g., hang hives on trees) culturally exclude women from the practice. Using improved apiculture, women can be encouraged to engage and benefit from honey production;
- Extension and research agenda need to focus on technology generation and transformation to enhance productivity growth, and equally on farmer empowerment, capacity-building and the development of agro-enterprises. Farmers are more likely to learn new and appropriate skills via participatory extension and research methodologies such as farmer field days;
- Feed development which needs conservation of natural vegetation, forestation, introduction of Multi-Purpose Trees, and fodder crops are crucially needed. In such cases the role of Bale Forest Enterprise and BERSMP will be high to supply seed, seedlings and technical information on the benefits of agro forestry;
- Establishment of cooperatives is also important to support individual beekeepers in capacity development to produce the required quantity and quality of bees products and provide credit services as they have limited capital
- **Research and related trials on farm enhanced under contractual arrangements covering the selected Sub sectors, apiary and its allies.**
- Improving credit services is the other important area that urgently needs institutional support. The lack of access to credit has become one of the key factors undermining the position of small-scale producers & traders. Farmers and traders seldom have the technical and financial resources to adapt quickly to meet demands for quality of produce as well as for quantity and continuity of supply. First, access to funds is needed to reduce the farmers' dependency on intermediaries (i.e., forced sales at low price); and second, farming cooperatives & traders often have difficulties in securing finance at favorable interest rates. This dependency is both a result and a cause of farmers' marginalization. Thus, dependable financial institutions should be in place to provide credit services at reasonable interest rate. At this juncture, we feel that it is important to adopt SOS Sahel's experience in Amhara region. SOS Sahel's bees products development and market promotion project in Amhara region transferred Birr 1.2 million to Meket Micro Finance Institute in 2003 and linked the six bees products development and marketing cooperatives with it. It was agreed the MMFI to provide the coops with the requested amount of credit with an interest rate of 9.50. Now the credit scheme is going smoothly and eventually the loan-able fund will be transferred to the union of the coops when it has the capacity to manage the fund.

5.6 Marketing Infrastructure Development Needs

There is a need to improve marketing infrastructure in terms of:

- Provision of market information, development of feeder roads in the high potential areas, and expansion of transportation services;
- Improving storage and handling services;
- Establishment of colony multiplication center; and
- Establishment of resource centers, websites and other communication means.

5.7 Policy Support Needs

To exploit the Bale and national untouched potential for bees' products and thereby to address the poverty problems of the poor and the nation, it is urged to formulate appropriate policy and strategy for apiculture development.

An institutionalization of the principles (and practices) of fairer trade is also needed, with a deliberate focus on facilitating smallholder farmers' fair access to markets without unfairly supporting or subsidizing them. This should be the core of the policy and strategy issue and it is the type of assistance that the farmers require through lobbies and advocacy of NGOs (like Farm-Africa and SOS Sahel Ethiopia) and the government in bilateral and multilateral trade negotiations. **Moreover open and free grazing should be outlawed in the Protected Areas and bee feed/fodder resources should also be enhanced vis-à-vis Soil Water Conservation measures and adoption of agro-forestry practices.**

5.8 Knowledge Gaps

It is believed and everyone agrees that the prevailing traditional beekeeping must be displaced by transitional and modern beekeeping. This is central to the present government position and that of its development partners including the NGO community operating in Ethiopia. This effort needs to be linked to the role of the private sector, NGOs and the government as there are problems at all levels (production, processing and marketing).

It is also necessary to initiate and undertake continuous marketing studies of the products starting from the farm gate to final consumers or exporters. This helps to make a practical fair pricing system that will consider production costs and the consumer's purchasing power. Along with this, both domestic and export price studies should be conducted to determine the volume of supply in relation to the existing demand. Market is a dynamic process which must be assessed periodically. The beekeepers and business people dealing with the marketing of honey and bees wax have to overcome a series of obstacles which are related more to transaction than transformation costs. Farmers and even most of the traders and processors of the bee product (honey and bees wax) face barriers to understanding and meeting requirements for quality, quantity and consistency of supply. To overcome these barriers, they need new skills: business acumen, capacity for leadership and administration, negotiating skills and the ability to cooperate effectively with other local and the international market situations and people.

By consolidating the apiculture activities of dispersed farmers and bee product processors into production and marketing centers, the farmers can improve their bargaining power and attain economies of scale by reducing their costs through shared equipment and volume of buying of beekeeping equipment and required accessories. Therefore, honey producers should work together to pool their resources and strengthen their negotiating position. They also would be able to pay for technical advice, buy equipment to process and grade their honey and bees wax, organize transport and market their crop in the fair access to markets. These markets offer farmers a significantly higher (and stable) price than conventional markets.

6 RECOMMENDATIONS

There are currently new market developments regarding the EU and other international markets. Increasing production, both in quality and quantity, because of modernizing the sector and increasing forage supply and seasonal management of beekeeping will make Ethiopian honey more competitive for export. High quality and specialty honey will be expected to have niche market both in the EU market and elsewhere in the world. Farmers need to be more trained and assisted to be able to produce more quantity and quality honey for their own benefit and to increase national production and its contribution to the sustainable economic development of the Bale area. The scientific production, effective processing and value addition and marketing of the product will positively impact the development of the eco tourism sub-sector in the area. Export potential of both honey and beeswax can be attained if both the private sector and Farmers' organizations are developed and enabled to work together. **Organic Production** and **Fair Trade Certification** will also greatly increase the sale value of Ethiopian honey and beeswax export.

There are adequate natural endowments and a longstanding tradition and culture of beekeeping in Bale. However, mainly because of lack of technological changes, institutional supports, low private sector involvement and access to market and value chain development, the country in general and the Bale area beekeepers in particular have not been sufficiently benefited from the sub sector. Yet, despite all the constraints and challenges currently facing the honey sub sector in the area, there are still enormous opportunities and potentials to boost the production and quality of honey products. Development of marketing structure, expansion of knowledge based extension services for an improved supply to the domestic and export market and standardization of products are the major areas of intervention required to ensure the small scale farmer (beekeepers) to benefit from apiculture. The following detailed strategic actions or approaches should come into view for rapid promotion of production and market development in the sub sector in Bale for BERSMP and BFE.

- a) Create synergy among coops, the private sector, women and the youth: This whole effort of actors on the apiculture sub-sector needs to be linked to the role of the private sector, women and the youth input provision, production, processing and marketing. The government, through the BERSMP, needs to continue leading developmental research and manpower training to include women and youth, of course in collaboration with the private sector. A parallel system of organizing producers (small holder beekeeping farmers) into Primary Cooperatives and eventually to Honey and Beeswax producing exporting Farmers Unions needs to be put in place. Both of these routes should be based on the Value Chain Development Approach as currently advocated and being supported by several donor group and NGOS such as SOS Sahel, FARM Africa and others. If farmers and rural households are enabled to move away from traditional beekeeping into transition and modern beekeeping, production and supply of crude honey will increase. These two parallel options (the Private sector and Farmers Organizations) must be allowed to compete as well as work together in the short term as long as their common and long term objectives remain the same. As beekeeping is being modernized, the roles of women and youth need to be expanded as these are currently largely excluded.
- b) Promoting increased productivity, production and quality of honey production: Productivity can be increased by improving the management of the traditional hives and by introducing improved beehives.
 - Increasing the productiveness of bee colonies by improving bee forage. This can be achieved through conservation of natural vegetation, introducing Multi-Purpose Trees such as fruit crops, animal fodder (agro forestry technologies), integrating with traditional cropping systems and introducing bee plants;

- Introducing and encouraging increased use of transitional and box beehives with full packages (sufficient training of the use and availing all the required accessories);
- Facilitating participatory research and extension with relevant organizations operating in the area such as Field Days;
- Enhancing farmers knowledge and skills about beekeeping management (including colony multiplication techniques) and pre- and post harvest handling of hive products;
- Encouraging more farmers to participate (particularly the women and the youth) in beekeeping and enhancing the capacity of the existing beekeepers to increase sustainable and adequate supply of quality honey.
- Allocate apiary sites for a dependable investor inside and outside the forest to establish modern apiaries so that the smallholder farmers will learn from it.

c) Value Adding and Market Development

Value addition, market development, marketing infrastructure and market information are the most important components of the bees' products value chains. The government, BERSMP and the private sector can provide these inter-related functions to both the smallholder farmers and the private sector, the private sector more involved in processing/value adding and marketing through product certification, branding and labeling/packaging . The Ministry of Agriculture and Rural Development and Agricultural Bureau of the Oromia regional government in collaboration with the Ministry of Trade and Industry and the Ethiopian Standards and Quality Authority have important inputs in the marketing effort by the country. Marketing channels are, at present poorly organized but the combined effort of the farmers through their Cooperatives and Unions and that of the few processing and exporting (trading) private firms is yielding good results. Both value adding and final product quality are improving and are attracting better prices and increased profitability. The following are identified to be important interventions in this regard:

- Creating awareness on the value of beeswax and other hive products (such as propolis, royal jelly, pollen, bee venom, etc.)
- Conducting business management training, particularly highlighting the relation between investments (in quality improvements) and returns for both beekeepers (farmers), and all participating traders
- Developing organized marketing channel starting from the local market to the central market to improve the quality, quantity and marketing of honey products;
- Establishing bees products collection and semi-processing centers in potential production areas and equipping them with the necessary facilities;
- Encouraging and supporting the establishment of local-based bees products processing and packing enterprises
- Improving the roads condition in the remote high potential areas to facilitate transportation and communalizations
- Developing standards and/or grades for different hive products to set attractive and high price for producers; different honey types obtained from different plant origin should be collected, processed and marketed differently.
- Certification for organic and management of quality standard, and introducing better price for better quality honey product
- Encouraging institutions to conduct market research and to establish market information services. There should be regular data collection, analyses and dissemination of relevant information. In addition, beekeepers, processors and supporting agencies should be able to identify pertinent market information and collaborate with other interested organizations to gather and disseminate the information
- Facilitate experience sharing visits for the farmers and government partners to Amhara region and Kaffa cooperatives

- Seeking for niche markets and new market opportunities in the local and overseas: This requires to conduct research to assess the potential and requirements of local, regional and overseas markets, and then to establish contacts with reputable buyers and finally to link the processors and cooperatives of beekeepers to the buyers (domestic and abroad). Supporting certifications to access foreign markets such as the European Union (EU) and promoting niche marketing, e.g., fair trade and through organic certification are important areas of interventions.
- d) Establishing and strengthening beekeepers cooperative to facilitate collection, primary processing and marketing of honey products. The beekeepers lack bargaining power and because of shortage of capital, they are confronted with restricted scale of production. Organization of small beekeepers into cooperatives has a number of advantages and opportunities in production, processing and marketing hive products. AMAR could be a good example to learn from. As clearly stated by SOS-Sahel (2006), most of the members of the Cooperative, got training/orientations in salesmanship, packaging, labeling, delivering, pricing and promotion, and they are now highly conscious to bring down production and marketing cost and to continually expand their market size to achieve economies of scale. They have developed label and trade mark for their honey and the product is well promoted. Moreover, the cooperatives are able to produce and sell beeswax at better price, identified potential market links and established contacts for retail sales outlets in Dessie, Gondar, Dangila, Woreilu and Bahir Dar and linked to some private investors. Currently, the coops have received organic certificates for their bees' products from BCS OKO. Thus,
- Encouraging and facilitating the formation of beekeepers into cooperatives as formal business entities is very essential. There are multipurpose cooperatives already operating in the Bale areas. Prior to the formation of new cooperatives, these existing cooperatives can also include the honey marketing business into their existing activities and can be linked to a private sector or BFE.

This could take one of the following relationship models:

- Individual beekeepers ↔ cooperatives ↔ private sector
- Individual beekeepers ↔ beekeepers groups ↔ private sector
- Individual beekeepers ↔ private sector

The investor is expected to involve in all the cycles along the value chain (input provision, production, processing and marketing). In the absence of the private sector, BFE can play the role of transforming subsistence beekeepers into commercial ones. However, it is very important to attract the private investor by integrating the bees' products with other sub-sectors like forest/plantation coffee, eco-tourism, mineral water and forest development. Moreover, BERSMP may cover the non-physical value addition (organic and fair-trade) costs; provide training and financial services to the producers for the first few years to attract the private sector.

- Undertaking capacity building in technical skills/bee-hive management, product handling, leadership and business management among others; and
 - Facilitating the establishment of collection and semi-processing centers.
- e) Facilitating financial services to enhance investment in apiculture: Most beekeepers and local traders, including the cooperatives in other or related sectors, lack adequate financial resources to invest on improved honey production technologies, storage, processing facilities and packaging. Thus, credit facility should be available to individuals who are willing to be involved in the production, collection, processing and packing of honey and other hive products. This necessitates that appropriate

credit system to be developed as it will have positive impacts in improving the quality and quantity of honey. Therefore, identifying collaborative financial institutions for mutual benefit based on the SOS Sahel's experience in Amhara becomes imperative.

- f) Establishing and supporting regular training programs to develop experienced and skilled experts in beekeeping management and marketing at all levels (regional, zonal and Woreda). These experts should provide training and technical assistance for front line stakeholders at grassroots level.
- g) Organic and Fair-trade honeys are fast growing market niches in the major honey-consuming countries in Europe. It is, therefore, important for the producers and exporters in the area to investigate the feasibility of organic and Fair-trade certification. The registration of producer groups with FLO is important in breaking into the better paying Fair-trade market. Increasing honey production to achieve economic scale (reduce average cost) so as to offer at a competitive price will make Fair-trade and other niche opportunities more attractive to international buyers. In conclusion, however, it would appear that the focus should not solely be on international export opportunities, at least in the short run, due to costs of various certifications and legislation requirements. Ensuring sales of good quality product can be secured locally and regionally before larger scale investment required for export to the European Union.

The following are important areas that deserve further research and major areas of interventions.

- Review quality parameters – perhaps the key issue to be addressed before approaching potential buyers;
- Assess costing structure – price in accordance with all costs such as transport, logistics, infrastructure accounted for;
- Review experience of other honey producers in Africa from the work of Bees for Development, Tropical Forest, and Api Trade Africa;
- Develop and secure necessary local and regional links to enhance robust approach to meeting international export requirements;
- Develop marketing strategy for the bees' products in the Bale areas.

7 ANNEXES

Annex1: The Position of African Honey in the EU Markets and Niche (organic and fair-trade markets)

The Position of African Honey in the EU Markets

African bee products are very scarce in the international marketplace, with less than 1% of world trade in bee products being with products of African origin. Whilst some producers may enter specialty markets, the generally dispersed nature of African honey producers and lack of infrastructure add to cost and would make it more difficult to compete in the international markets. The higher supply chain costs would make it difficult to compete with larger honey exporting nations such as China and Argentina, already benefiting from economies of scale.

With many sources of honey, a product that can be produced almost anywhere in the world, it is essential to be able to produce at a long-term competitive price to attract buyers. Therefore, there is a need to develop a competitive advantage in the market. Experience has shown in other sectors that forming effective marketing co-operatives can enhance the possibility to negotiate effectively on behalf of a number of producers and command 'fairer' prices for their produce. To achieve Fair-trade accreditation it is often essential to have formed such a democratic co-operative.

The experience in China in 2002 highlights the potential devastating impact on price, supply, and market access due to contaminated product. Some importers site poor quality honey as being due to bad harvesting, processing and handling techniques as an issue. Also frequent drought and poor infrastructure are concerns (Traidcraft, 2005).

Niche Markets

For the niche markets such as organic, Fair-trade and specialty honeys, the outlook is good in a number of European countries. Germany and the United Kingdom are the most important markets for honey in Europe. In Germany, Allos is the brand leader in the organic segment, with a share of 80 per cent of the organic honey market. Compared to the total consumption of honey, the share of Fair-trade honey is less than 1 per cent. Gepa is the leading brand name in the Fair-trade market for honey. Gepa offers honeys of various botanical origins and blends of honey. Most of these honeys come from Mexico and Chile. The United Kingdom has a well-developed market for honey, and sales of honey have increased in the past few years. For the period 2000–04, honey sales rose by 31%, reaching £59 million in 2004 (Mintel, 2005). Sales of organic honey in particular have increased, experiencing a 16% rise in sales between 2003 and 2004 (Mintel, 2005).

Although honey is a common food product in both countries, the markets and trends are quite different. Germany has the highest consumption of honey per capita. Germany is a leading country in organic-food consumption, and organic honey is already widely available in German supermarkets. The organic market will continue to increase, and honey may benefit from it (EPOPA, 2005).

Currently, Germany imports honey from Tanzania and Zambia. Although there is not a specific interest for African honey, most importers are open to offers African honey, especially when they are organic or Fairtrade-certified. In the United Kingdom, there is a special interest in honey from African countries, and especially in Fairtrade-certified honey. Experience has shown that there is a fair amount of demand for African honey from consumers. The consumption of honey in the Netherlands is low, and according to a Dutch honey importer, the consumption will not increase much in the near future. The assortment of honey in the retail markets has increased over the years. Many supermarkets have, in addition to their private labels, a variety of branded honeys. Over the last year, honey packers have introduced several new products containing specialty and mono-floral honeys. New types of mono-floral honey, flavored or infused honey and new packaging have been introduced in other European countries.

Fair-trade

The price of Fair-trade honey is laid down in the Fair-trade standards for the production and trade of honey (FLO, 2004). Producers receive a price for their honey that is based on the quality and nature of their honey. The price consists of a Fair-trade minimum price and a Fair-trade premium. For organic honey, an additional organic premium is paid (Table 18).

Table 9: Prices of Fair-Trade Honey (US\$/kg)

Grade	Minimum FOB Price	Premium	Total Price	Organic Premium	Total Fairtrade & Organic Price
A-Grade	1.80	0.15	1.95	0.15	2.10
B-Grade	1.65	0.15	1.80	0.15	1.95

The Fair-trade prices cover the production costs, which are defined so as to remunerate labor comparatively well and leave producer organizations a margin for supporting services and development activities. Should the market price be higher than the Fair-trade minimum price, the market price applies. The Fair-trade contract is attractive to beekeepers, because it guarantees a sales price. However, there is no guarantee that beekeepers will be able to receive the Fair-trade price for all production due to the limited size of the Fair-trade market. From the abovementioned information, it could be calculated that the average of all prices is 1607.25 US\$/MT, while the average fair-trade grades (A&B) is 1875 US\$/MT and average Fair-trade plus organic grades is 2025 US\$/MT.

The Fair-trade Labeling Organization (FLO), based in Bonn is an initiative that aims to improve the conditions of trade for organizations of smallholder producers of tropical commodities. There are now 18 national Fair-trade institutions that have been established under the umbrella organization FLO, and FLO-Cert, which acts as the global standard setting and certification organization. The system involves independent auditing of producers to ensure the agreed standards are met. Companies who wish to label and sell Fair-trade products with the Fair-trade logo must apply for a license issued by the national institution (FLO, 2005b).

The model is based upon the following key elements that distinguish it from the conventional commodity-trading model:

- i. Agreed minimum prices that at least cover cost of production
- ii. Payment of a social premium to democratic producer co-operatives for investment projects in the community
- iii. Direct purchasing from producer co-operatives, reducing the influence of some middlemen in the supply chain
- iv. Offer long-term relationships based on trust and the signature of long-term contracts
- v. Pre-delivery payment to act as a credit line to producers
- vi. Build producer knowledge through training and greater access to market information

FLO has developed a Fair-trade standard for the production and trade of honey. Through this standard, FLO guarantees that small-scale beekeepers receive fair payment for their honey, enhancing social and economic development of the members of producer organizations. Producers wishing to participate in Fair-trade must be part of a democratic and transparent organization of predominantly small producers. The producer organization must be able to demonstrate that the Fair-trade revenues will promote the social and economical development of small producers. In addition to these general criteria, there are specific product criteria for honey. The product standard for honey identifies two grades in quality, which are based on the water content and the HMF content, using a point scale. The best honeys are classified grade A, others grade B (see Annex 2 for details). This qualification is used to determine the Fair-trade price for the small producers. Also, the EU quality standards and the market demands for quality honey are relevant to Fair-trade honey.

Currently, there are 26 honey-producer cooperatives that are Fair-trade-certified in six countries: Mexico (13), Nicaragua (2), Chile (4), Guatemala (5), Argentina (1) and Zambia (1). Within the distribution channel, 24 traders are Fair-trade-certified: 5 in the UK, 3 in Germany, 4 in Switzerland, 4 in France, 4 in Italy, 2 in Belgium, 1 in the Netherlands, and 1 in Japan (FLO 2005).

The largest market for Fair-trade honey in the European Union is Germany. With the second largest market, the UK has seen a large growth in sales of Fair-trade honeys. From 2003 to 2004, sales volume doubled (EPOPA, 2005). Other growing markets are Italy and France. There is particular interest from UK importers in African honey, especially when it is Fairtrade certified, and therefore represents a potential market opportunity for Ethiopian honey.

Fairtrade shops, wholefood shops and the large retail stores offer Fairtrade honey. There are many Fairtrade honeys in the UK market with the following brand names: ASDA, Swallows, Rowse, Traidcraft, Equal Exchange and Tropical Forest (www.tropicalforest.com accessed in March 2007). Swallows, owned by Cotswold Honey Ltd, are a leading brand in Fairtrade honey in the United Kingdom. Their honeys come from Mexico and Chile. Rowse Honey Ltd is an important supplier of Fairtrade honeys (from Chile) under their brand name Rowse. Because Rowse is sold through the large supermarkets, there is good potential for growth of Fairtrade honey. Tropical Forest is the only UK brand that has an African Fairtrade honey in its line (from Zambia). Fairtrade certification of honey is governed by the FLO.

The share of Fair-trade honey in the total consumption market is small, however: less than one per cent. In the next few years, sales of Fair-trade honey are expected to continue to grow as distribution widens, for example increased listings in Co-op and Asda supermarkets. As indicated in <http://www.outofthisworld.coop/m1/aboutus.shtml> a small chain of shops found in the north of England that sell organic, Fairtrade, and eco-friendly products. The ranges of honeys that are sold in their store in Newcastle are:

- Co-op Fair-trade honey
- Rowse Fairtrade honey Chile
- British honeys – local produce

- Hungarian Acacia honey
- Tropical Forest (as mentioned above)
- Manuka New Zealand – loads – expensive – Active UMF 5+, 10+, 15+

The range with the greatest presence on shelf were the Manuka New Zealand honeys and were at the higher end of the price range. Manuka Health's Active UMF Manuka Honey has a special anti-bacterial activity called Unique Manuka Factor (UMF) not found in any other honey. The UMF® rating is equivalent in antiseptic potency to a 10% (for 10+ strength) and 20% (for 20+ strength) solution of phenol (common antiseptic). All Manuka Health Active UMF Manuka Honey products have been tested and certified by independent laboratories. The UMF standard is to distinguish between ordinary Manuka Honey and the unique Active Manuka Honey¹. Ordinary Manuka Honey has only the hydrogen peroxide antibacterial property. The Active Manuka Honey Industry has named the natural non-peroxide property UMF, which is their seal of trademark². Table 19 highlights the price differentials between some standard and specialty honeys.

Table 10: Comparison of Prices of Retail Honey in UK Stores

Brand	Type / Origin	Pack size	Price/pack (in £)	Price/gram (in £)
Gales	Pure clear honey	454 gram jar	2.05	0.0045
Gales	Pure set honey	454 gram jar	2.05	0.0045
Rowse	Squeezable Natural	340 gram jar	1.79	0.0053
M & S	Eucalyptus – Arg & Aus	340 gram jar	1.79	0.0053
Tropical Forest	Zambian Fairtrade Organic – Set & Clear	454 gram jar	2.99	0.0066
Rowse	Chilean Fairtrade	340 gram jar	2.29	0.0067
M & S	Fairtrade squeezable Chilean honey	340 gram jar	2.29	0.0067
M & S	Orange blossom squeezable Valencia	340 gram jar	2.29	0.0067
Rowse	Squeezable Organic	340 gram jar	2.35	0.0069
Equal Exchange	Latin American Fair-trade Organic	340 gram jar	3.17	0.0093
Manuka	UMF 5+	500 gram jar	8.99	0.018
Manuka	UMF 5+	250 gram jar	5.49	0.022
Manuka	UMF 10+	500 gram jar	13.95	0.0279

Organic

Estimated total market for organic honey in Europe is 6,500 tones per year. Germany is a forerunner in consumption of organic food in the European Union. Total retail sales of organic food and drink products in 2004 were €3.5 billion, an increase of 10 per cent to 12 per cent over 2003. The market share of organic products in the total food sales in 2002 was 2.3 per cent, one of the highest of all EU countries. This market share is expected to have increased in recent years. Due to the size of its population, Germany is by far the largest organic consumption market in the European Union (EPOPA, 2005).

In the UK, the market share of organic products in retail sales value in 2002 was 1.2 per cent, which is rather average. However, organic honey has a much higher share than organic food products in general. Retail sales of organic honey in the UK have grown considerably in recent years, and growth is expected to continue due to continued consumer demand for organic products. The major brand in organic honeys available at retail stores in the UK is Rowse. Of the total volume sold through supermarkets in 2004, 928 tons was organic, which is 6.8 per cent of the retail market. According to Rowse Honey Ltd, growth in the organic-honey market in the United Kingdom will be around 15 per cent to 20 per cent for the next two years (EPOPA, 2005).

In general, consumers regard honey as a natural, unprocessed product. Although conventional honey production is similar to organic production, there are additional rules for organic honey production. In the European Union, some of these rules are the following:

- Crops on which the bees feed may not have been chemically treated;
- Bees should be able to survive harsh times (winter) on self-produced honey and therefore may not be fed sugar to increase honey production;
- There may not be any airports or main roads near the beehives;
- Diseases may not be treated with veterinary medicines but only with a limited number of organic substances;
- Bees may not be stupefied during the harvest of the honey.

¹ <http://www.manukahoney.co.uk/>

² <http://www.wellbeing-uk.com/ManukaHoney.aspx>

The production of organic honey in Europe is limited. The main reasons are the presence of the varroa mite, the lack of unpolluted areas, and cold winters. The varroa mite is most effectively treated with veterinary medicines, which are not allowed in organic production. In Europe, a honey reserve to last through the winter can be achieved only when the honey is not (fully) harvested in the summer. This seriously limits the production volume of organic honey. In tropical regions, four to five times more honey can be produced. Feed crops are amply available, and the bees can produce year round. Because of the lack of a clear winter period for which honey reserves are needed, more honey can be harvested. Only a limited number of chemicals may be used for the treatment of bee diseases and beehives. The varroa mite is not yet widespread across Africa, a big advantage for organic honey production in Africa, and therefore potentially for Ethiopian producers.

Biodynamic production, distinguished with the Demeter label, is a type of organic production. The biodynamic approach to farming, gardening and forestry is a unique form of organic husbandry inspired by the research of Rudolf Steiner (1861-1925) and is founded on a holistic and spiritual understanding of nature and the human being³. Organically certified honey can easily be biodynamic certified, since the production standards are very similar. In Germany, there is a small market for this type of honey. The supply of biodynamic honey is small.

Organic honey is valued more highly than conventional honey of the same quality, and the price premium ranges from US\$200 to US\$300 per ton. In the near future, the price development of organic honey will be heavily influenced by the amount of supply. Already a substantial amount of the honey production area in Brazil is certified organic (CBI, 2005).

Annex2: European Union Requirements and Legislations

Grades and Standards

Full information on grades and standards of the European Union are available in the websites⁴. A standard for organic bee keeping is available at the website of Naturland: "Naturland Standards for Organic Beekeeping", <http://www.naturland.de>. The standard for Demeter organic bee keeping is available on the website of Demeter: "Standards for Beekeeping and Hive Products", <http://www.demeter.net>. Further details regarding Fair-trade and Organic certification can be found above in Section 3, and recommendations related to principle market opportunities in Section 6. Issues related to these initiatives are also discussed in Bees for Development Journal 81, sent as a separate pdf file.

European Union Legislation

Honey may be categorized by the origin of the nectar or the method of processing and presentation. These categories are taken from Council Directive 2001/11/EC⁵ relating to honey, which describes the conditions under which honey may be placed in the EU market.

Honey imports into the EU need to:

1. come from a country approved to export honey to the EU
2. follow The honey Standards (Council Directive 2001/110/EC)
3. follow the EU hygiene package laid down in Regulation 853/2004/EC for animal products (see Legislation and regulation report)

The HMF (hydroxymethylfurfural) content, which is an important quality parameter, is directly related to the temperature during production, storage, and transport. The HMF content rises with the temperature. The standards for the European Union regarding maximum HMF contents are in Council Directive 2001/110/EC. Standards for organic food production and labeling in the European Union are laid down in Council Regulation (EEC) 2092/91⁶. This regulation and subsequent amendments establish the main principles for organic production at farm level and the rules that must be followed for the processing, sale and import of organic products from third (non-EU) countries.

The latest list of so-called 'third' countries – those authorized to import honey into the EU – issued on 7 March 2006 is as follows: Argentina, Australia, Belize, Bulgaria, Canada, Chile, China, Croatia, Cuba, El Salvador,

³ <http://www.biodynamic.org.uk/Aims%20and%20Objectives.htm>

⁴ Fairtrade Honey standards: http://www.fairtrade.net/fileadmin/user_upload/content/Honey_SF_Dec_05_EN.pdf
Fairtrade Generic Standards for Small Producers available in separate document, (Generic Fairtrade Standards for Small Farmers Organisations: http://www.fairtrade.net/producer_standards.html
Honey regulations: <http://www.food.gov.uk/multimedia/pdfs/honeyguidance.pdf>
Organic certification for non-UK production:

http://www.soilassociation.org/web/sacert/sacertweb.nsf/B3/international_contents.html

⁴ EU legislation for honey: <http://europa.eu/scadplus/leg/en/lvb/l21124a.htm>, and refer to 'Legislation and regulation information'.doc.

⁵ EU legislation for honey: <http://europa.eu/scadplus/leg/en/lvb/l21124a.htm>, and refer to 'Legislation and regulation information'.doc.

⁶ Refer to the document 'Legislation and regulation information'

Guatemala, India, Israel, Jamaica, Kenya, Kyrgyzstan, Mexico, Montenegro, New Zealand, Nicaragua, Norway, Paraguay, Pitcairn Islands, Romania, Russia, San Marino, Serbia, South Africa, Switzerland, Tanzania, Taiwan, Thailand, Turkey, Uganda, Ukraine, Uruguay, USA, Vietnam and Zambia, but Ethiopia is not on this list!

This 'Third country residues' web page explains the elements required for drawing up a residues control plan, and the process by which such plans, and the guarantees they offer, are assessed in order to determine equivalence with Community law or alternative guarantees.

Due to concerns about food safety, residue-monitoring plans are required from third-world countries for imports into the EU of all animals and products of animal origin. This is laid down in Council Directive 96/23/EC of 29 April 1996 on measures to monitor certain substances and residues thereof in live animals and animal products (OJ L 125, 23/5/1996). Honey is considered to be an animal product.

Annex3: Honey Supply Chains and Purchasers' Requirements

Value / Supply Chain Analysis

In the European countries under review, the import market is dominated by several large companies, which import, refine, and pack for industry purposes. Some of the honey importers (smaller importers) are also packers of retail honey. Most often, specialized companies, which have a brand name in honey, do the retail packing. Honey packers may supply their honey directly to the large multiple retailers, while for the smaller health food and specialty shops, the honey is sold through a wholesaler. The following overview of the supply chain for honey is taken from a research report conducted on behalf of Traidcraft (2005):

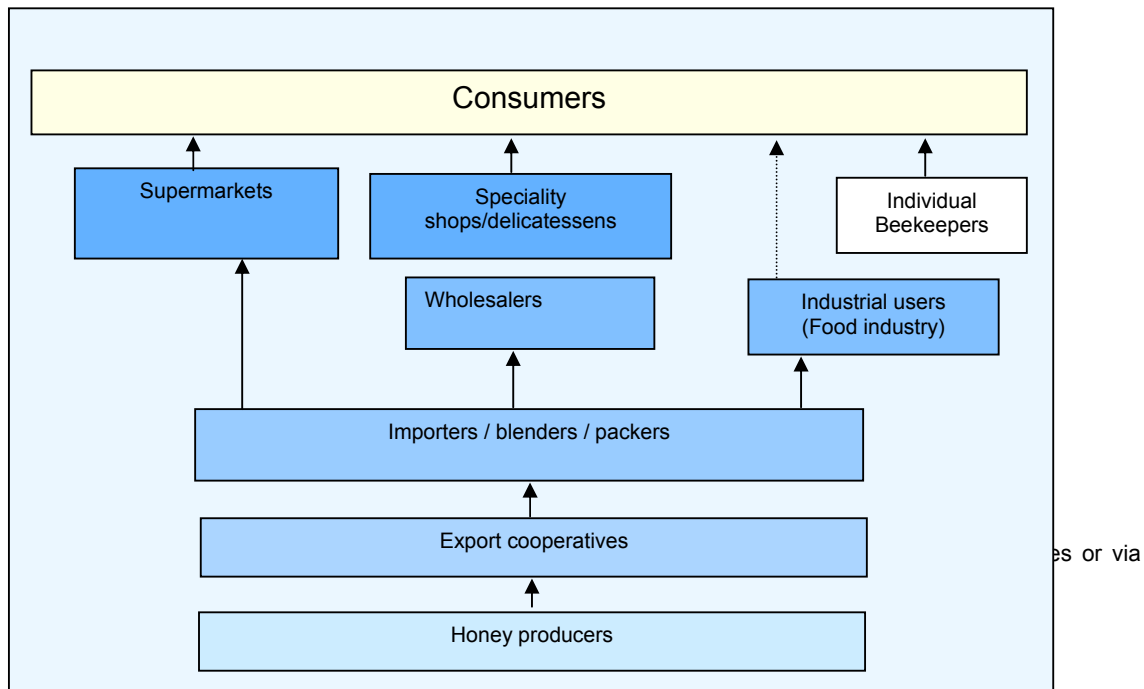
Supplies from individual honey producers, notably in Africa, are often too small to meet the needs of importers. Therefore, they often supply to export co-operatives, which collect the honey and export in large volumes. Importers usually combine the functions of importing honey into the EU with processing, blending and packing the honey. They sell the end product to wholesalers and retailers in consumer packaging. Next to supplying consumer packaging to wholesalers and retailers, importers also supply in bulk to industrial users.

As an estimated 85% of honey in the EU is sold directly to consumers, retailers (including beekeepers) play an important role in the distribution of honey to consumers. Super- and hypermarkets constitute the most important outlets for honey. They belong to big retail groups in the EU like Metro (Germany), Carrefour (France), Tesco (UK) and Ahold (The Netherlands). Due to their size, they command a substantial buying power.

Only specialty retail stores offer a wide variety of single-origin honeys. These specialty retail stores, which often concentrate on organic and natural food products, form the second retail channel for honey. Due to the increasing safety concerns, these shops have become more popular during recent years. Consumers look increasingly for natural, tasty and safe food without any chemical ingredients. The specialized shops for organic and natural food cater to this trend (CBI, 2006). According to Trade-craft (2005) and SNV (2005), the honey supply chain consists of:

- *Importers / Processors:* Honey importers generally deal in container loads to make imports of honey more cost effective. Therefore it is difficult for small producers to export directly to importers.
- *Middlemen:* An issue often seen as a double edged sword – middlemen provide markets for small producers but in doing so are sometimes accused of extracting valuable economic rent meaning producers receive little for their produce. Trust is key and knowledge of seasonality in order to meet market and producer demands.
- *Governance:* Governance exhibits the degree of organization and interactions within the chain. Given the number of players involved in the chain – producers, middlemen, support organizations, processors and retailers – it may be more challenging to govern.
- *Producer Groups:* It will be critical that the producers coalesce around a base – be it a group or an organization. This will be important for the delivery of training and extension services as well as the production of sufficient volumes of honey. The beekeepers will sign a contract that governs their relationship with the rest of the chain.

Figure 2: Distribution Chain for Honey



A series of interviews with buyers and traders in the cocoa industry to ascertain some of the drivers and barriers for them to adopt, defined as more responsible purchasing practices highlighted the following points, some of which are of relevance with regard to any producers wishing to export from Africa. Key issues that the European buyers consider important factors in creating partnerships with producer groups included:

- Increase level of trust in partnership with reliable co-operatives;
- Reacting to demand for provenance and consumer demand for premium quality;
- Overcome barriers such as distance to dispersed producers; no direct contacts; lack of enabling environments; limited capacity and capabilities of some producer groups;
- Clarify role of local exporters and traders in trading relations;
- Work towards systems to improve quality of product and traceability – to ensure that products can be traced to the exact source of production.

The business case for investing in niche markets is being enhanced by an increasing demand to know the provenance of cocoa. For instance, Cadburys acknowledged this fact, and introduce a reason for this response: advertising provenance may become an important driver to build on corporate trust and brand loyalty. This point is relevant for honey as shown with the demand for Manuka honey and other brands that advertise provenance.

Annex4: Principal Market Opportunities

African honey does not have a good reputation in the international honey trade. Many importers relied on African honey imports in the past, but they have discontinued the imports because of deficiencies in quality and supply. A strong quality focus is important to overcome the hesitation of importers. A key issue in successful exports is developing a strong value proposition towards customers. The value proposition is the reason why the targeted customers should buy the products. The value proposition may be based on aspects such as taste and appearance, botanical origin, production method (organic/Fair-trade) and service delivery. Even the fact that the honey is coming from Africa may contribute to the value proposition, since honey importers are sensitive to development aspects of imports from Africa. This is particularly the case for product that is accompanied by a “good story”, such as Fair-trade. Germany and especially the United Kingdom have an interest in increasing their honey imports from African countries. Currently, Tanzania and Zambia are the most important suppliers of honey to the European Union. Germany and the United Kingdom are the main buyers. Belgium also imports honey from Tanzania. Both Germany and the United Kingdom will remain important customers for African honeys. The United Kingdom is the only European country where African honey is sold in retail stores as a single-origin honey.

African honeys are different from mainstream European honeys in taste and quality. Tanzanian honeys typically have a strong and smoky taste, a relatively dark color and often show a poor performance on technical parameters like HMF and moisture content. Whereas better management can improve some of these aspects, others are inherent to the natural conditions for tropical honey production.

Very little African honey is actually exported to Europe. Although honey production is common throughout Africa, production volumes are limited and most of it is consumed domestically. On the domestic market honey is usually considered a medicine and accordingly fetches high prices. The quality standards are very different from Europe, where honey is considered a (natural) foodstuff.

Nevertheless, there is a market for African honeys in Europe. There is also a market for African organic honeys. Europe is very dependent on honey imports since domestic production only covers 40% of demand. Imported honeys may be used as industrial or baker's honey, as an ingredient in blended table honeys (sold through retail outlets), or as single origin specialty honeys, which are also table honeys. For each segment, different quality standards apply, and different prices are paid.

The organic honey market is estimated at around 1% of the total honey market, which is relatively small. The background to this is that the distinction between conventional and organic honey is rather small, since honey is a natural product anyhow. This distinction might become more important however, if the public becomes conscious of the recurrent scandals with contaminations in especially Chinese honeys.

Since supply of African honey is limited, it would be interesting to market it as a specialty. This way revenue would be increased. The most attractive segments are the single origin, organic and Fair-trade niches (which partly overlap). Tanzanian (Tabora) and Zambian honeys have traditionally been marketed as single origin, Fair-trade and organic honeys, but not without difficulties. A strategy that targets the high-end of the market requires a consistent quality and a regular, reliable supply. If these demands cannot be met, however, the African honey can be sold as baker's honey. And even then organic certification (as well as Fair-trade certification), would earn the honey a premium (EPOPA 2002).

Annex 5: Honey and Beeswax Specification Standards

Table A1 is a summary of the comparison of honey composition between the world and the Ethiopian standards. It further reflects that the composition requirement for honey according to the Ethiopian Standards is comparable with those specifications in other countries, the EU and Codex Alimentarius (FAO/WHO).

Table A1: Comparison of honey composition between the World and Ethiopian Standards * (ES 1202:2005)

Country/Origin	Moisture content % Max**	Reducing sugars, % min	Sucrose % min.	Acidity Meq/kg	Ash%	HMF, mg/Kg	Water insoluble % mass
Ethiopia	17.5-21	65	10	40	0.6	40	0.1
EU	21	65	5	40	1	40	-
Codex Alimentarius	21-23	65	5-10	40	0.6-1	80	-
Spain	22.5	70	3	5	0.6	-	-
Canada	20	60	8	-	0.2-5	-	-
Latin America codes	20	-	8	54	0.8	-	-
Argentina	20	-	8	54	0.8	40	-
Mexico	-	63.9	9	8-52	0.4	-	-

** Moisture content %, max Grade A 17.5%, Grade B 19.1-20%, Grade C 21%

Table A2: Summary of different tests of Ethiopian honeys and results

Tests	Sample size	Mean	Standard Dev.	Range	World standard
Moisture Content %	542	21	3	15-32	18-23
Reducing sugars	50	66	5.7	59-77	60-70
Sucrose	50	3.6	6.4	0.01-13	3-10
Acidity, meq/kg	55	39.9	16	17-95	5-54
Ash*, %	50	0.32	0.2	0.01-1.2	0.25-1.0
HMF, mg/kg	51	32.4	30	0.96-96	40-80
Diastaseactivity, Goth	50	6.3	4.8	1.5-21.4	3-10

scale				
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N. Adgaba' quality state of Grading Ethiopian Honey, proceedings", 1st National Conference of the Ethiopian Beekeepers Association, Addis Ababa, 1999.

Table A2 summarizes the specifications for beeswax properties according to the Ethiopian Standard (ES 1203:2005) and the European Pharmacopoeia (2002)⁹. The two standards are clearly similar with regard to the properties they have commonly specified.

Table A3: Beeswax Specifications of Ethiopian Standard (ES 1203: 2005) and the European Pharmacopoeia (2002) for property specifications

Property Specification	Ethiopian Standard	European Pharmacopoeias
Specific gravity at 20 °C	0.9550-0.9800	0.950-0.965
Melting point, °c	61-66	61-65
Refractive index at 75 °c	1.4400-1.4450	1.440-1.445
Ash % by mass max.	0.20	-
Tot. Volatile matter % mass, max	0.75	-
Acid val.max	17-24	18-23
Saponification value min.	85-105	87-104
Ester value	70-80	70-80
Peroxide value	-	At least
Fats and Fatty acids	To pass test	-
Paraffin and other waxes	To pass test	Absent

Annex 6: Trade Standards for Honey

Product Description

"Honey is the sweet substance produced by honey bees from the nectar of blossoms or from secretions of or on living parts of plants, which they collect, transform and combine with specific substances and store in honey combs." "Honey essentially consists of different sugars, predominantly glucose and fructose. Honey also contains proteins, amino acids, enzymes, organic acids, minerals, pollen and may include sucrose, maltose, melezitose and other oligosaccharides (including dextrans) as well as traces of fungi, algae, yeasts and other solid particles. The color varies from nearly colorless to dark brown. The consistency may be fluid, viscous or partly to entirely crystallized. Flavor and aroma varies according to the plant origin."

Quality

Basically the honey has to fulfill the EU and Swiss quality standards (general description as above). It must not have any objectionable flavor, aroma or taint absorbed from foreign matter during the processing and storage. It must not have begun to ferment or be effervescent. Honey must be free of any residues caused by medical application against bee illness (e.g.. varroasis, foulbrood, etc). Honey must not contain any foreign sugar. The honey should be free of foreign matters such as mould, insects, insect debris, sand, etc. Eventual feeding of sugar has to be limited strictly to the non-productive season and in addition has to be kept at the absolute minimum necessary. Quality control prior to shipment has to be carried out through an independent agent unless otherwise agreed between seller and buyer. Only new export quality barrels should be used for bulk shipment.

Honey traded under FLO conditions will be classified into two categories, according to its quality. Relevant for differentiating the quality, two criteria standards are defined: water content and Hydroxymethylfulfural (HMF). For each category points are given according to following scheme:

Table B1: Assessing the Water Content and HMF in Honey

Description	Points	Factor	Max. Point
Water Content (% Chataway)			
16.9 Or less	5	4	20
17.0-17.5	4	4	16
17.6-18.5	3	4	12
18.6-19.0	2	4	8
19.1-19.5	0.5	4	2
19.6 or more	0	4	0
HMF Content (ppm)			
0.5 or less	5	3	15
0.5-9.9	4	3	12
10.0-12.0	3	3	9
12.1-15.0	2	3	6
15.1-20.0	1	3	3
20.1 and over	0	3	0

If the total number of points of the two established quality standards is added, 35 points can be reached as a maximum. According with this method two categories of qualities are defined:

A Quality: Each kind of honey, which gathers 18 or more points.

B Quality: Each kind of honey, which gathers 17 or less points.

The quality control prior to shipment has to be carried out through an independent agent unless agreed on otherwise between seller and buyer.

Pricing

Basis for the pricing is the commitment of Fair Trade organizations to offer a price covering all production costs including a comparatively good remuneration of labor, allowing members and their families adequate living conditions and leaving producer organizations with a margin to pay for supporting services to beekeepers and social development activities within the community. Regular records on the cost of production are made by each FLO certified producer organization.

Table B2: Pricing

Application:	Fairtrade minimum FOB price USD / kg	Fairtrade Premium USD / kg	Total Fairtrade price USD / kg	Organic differential USD / kg	Total Fairtrade Organic price USD / kg
All producing countries					
A Quality	1.80	0.15	1.95	0.15	2.10
B Quality	1.65	0.15	1.80	0.15	1.95

In cases where the market price in a producer country rises above the FLO minimum price, the respective market price applies.

Credit/Payment

On request of the seller, the buyer shall make available up to 60% of the minimum value of the contract in credit facilities in favor of the seller upon the signing of the Letter of Intent, or at any date thereafter at the wishes of the seller, however **at least six weeks prior to shipment**. The corresponding interest charges shall be covered by the seller at current commercial interest rates (or better) in the country of destination. Reimbursement of the loan and the interest charges shall be according to the terms and conditions mutually agreed upon in the separate credit contract. Unless other mutual agreement payment shall be net cash, minus eventual advance payments, following a quality control accepted by both parties prior to shipment and against a full set of documents on first presentation (FOB).

Continuity

To allow producer organizations certain continuity in their markets buyers should guarantee minimum orders for the period of at least one year. Renewals are to be affected at least three months prior to expiry.

Annex7: Experiences from the SOS Sahel Apiculture Programme, Amhara region

SOS Sahel is the NGO specializing in Food Security and natural resource development. It works in partnership with government and communities focusing on activities designed to enhance food production and environmental management, thus improving food and livelihood security of farmers and pastoralists. The agency aims to devise ways to conserve and manage natural resources and to secure sustainable livelihoods; and to use this

knowledge and experience gained to influence policies and practices. A key feature of SOS Sahel's work in Ethiopia has been the design and testing of different mechanisms to allow for participatory planning for sustainable food and livelihood security and natural resource management with different stakeholders at local and regional level.

The **Trade in Apiculture** programmes was designed to improve farmers' entrepreneurial skills, add value to farmers' products, link farmers to new market outlets and create financially and institutionally viable farmers business organization. Between 1995 and 2002, The Netherlands Embassy supported an SOS Sahel development programme in Meket Woreda, promoting the use of top-bar hives with the direct involvement of farmers in development of the technology. This technology was found to be affordable and appropriate to local social and cultural contexts, and it was possible to increase the beekeeping productivity by using top-bar hives. However, this was not enough to ensure improvements in farmers' income levels and standards of living. Between 2003 and 2006, The Netherlands Embassy supported SOS Sahel to undertake further apicultural development, this time in selected Woredas of Amhara Region, to include modern and the predominant traditional systems. Since the beginning of the programme 6 primary co-operatives have been set up and developed by SOS Sahel and 3 further government initiated co-operatives have joined the programme.

Through piloting smallholder market creation initiatives SOS Sahel has had to face new development challenges and go through a steep learning curve, particularly in stimulating the development of economically and environmentally endorsed sustainable farmers owned agricultural marketing enterprise. This development required significant capacity building to create a Programme Team with skills to implement the work. SOS Sahel Ethiopia made a one year consolidation and planning phase partnership agreement with OXFAM (GB) in October 2006 in order to ensure proper consolidation and preparation for scale up to a wider area in the region. This phase, which completes in September 07, has built on and deepened the experience of SOS Sahel in promoting **Trade in Apiculture** in the Amhara region, and now also in the Kafa region. The main conclusion from the Programme so far is a conviction that apiculture is a viable economic activity in the Region, and the approach adopted, of promoting organization and co-operation at the processing and marketing level, is the right way forward that should be extended to other potential Woredas of the region and high value agricultural products

The project is intended to create market for bees' products through organization of beekeepers into commercial entity, production of value added hive products and creating market link between local producers and new market outlets. The project aimed at lifting beekeepers from income poverty by increasing the net income derived from beekeeping. The project followed a multi-component approach involving creation of farmers beekeepers association, establishing collection and processing centres, facilitate farmers access to credit, linking farmers to new local and overseas marketing opportunities and creation of self-sustaining apiculture resource centre.

Annex 8. Good Beekeeping Practice for Export Quality Bee Products (Susie Wren, 2007)

Organic honey should come from nectar collected by the bees from flowering plants, shrubs and trees growing in an area which has not (in the past three years), is not and will not be contaminated by any form of chemical pollution. This includes air, water and soil pollution caused by industry and unprocessed waste from urban areas as well as agricultural chemical inputs as there are synthetic fertilizers, pesticides and herbicides. The distance to a possible pollution source should be at a distance of at least 5 km of the hive. (bees fly out to collect nectar and pollen in a radius of approx. 3.5 km from their hive with a 70% chance to return to the hive).

Construction of the hives

Hives should be constructed of natural materials as wood, mud or dried manure and should not include multiplex or glued wood, or poisonous materials (i.e. used pesticide cans). When bees are introduced to a newly constructed hive no fresh paint should be found on the outside and no paint to be used on the inside.

The Kenya top bar hive TBH may be constructed from any of the above mentioned material. The key to the TBH is the top bar itself. The width of the bar determines the centre-to-centre spacing of the combs which the bees should start building on a foundation sheet or on a strip of wax. For optimum management the bars running over the width of the hive should be no wider than 32 mm (+/- 1mm). The top bars should be sawn from dry wood at least 20 mm thick. The bars should be very straight and lay close to each other as neatly as possible. In the centre a groove can be cut in which a foundation sheet can be placed or in absence of this a strip of wax should be mounted through the middle. This strip or the foundation sheet should be placed about 3-4 cm from the ends because the bar rests on the sides of the box (+/- 20 mm), now leave a bee space of about 8 mm (or more) to avoid the comb to be attached to the sides of the box.

The box can be constructed as a rectangle or a long box tapered towards the bottom. The advantage of the tapered construction is that the comb attached to the top bar can easily be manipulated without much risk of breaking-off (see below: management).

The opening can best be placed at one end. It should be approx. 40 mm x 15 mm. Not too big otherwise robber bees may enter and not too small so bees can move freely in and out. A small platform should be in front of the opening so ventilator bees can easily work there to keep the hive cool. Some beekeepers prefer the opening in the middle of the hive which is also perfectly possible but never allow for more than one opening.

Frame hives. The frame hives are constructed following the “Langstroth” building principles. The comb is drawn by the bees in the frame which should be furnished by a foundation sheet. When manipulating the comb, it is firmly secure within the frame.

Bee management

During the year it is good to keep a regular check on how the bees are doing. Each beekeeper will have his/her own schedule to check on the bees. Good practice is to check every two to three weeks.

The different comb-types

In any hive the brood combs are located directly next to (or one or two combs from) the opening. An average hive may look like this: Adjacent to the opening a brood comb or a pollen comb (or a combination). This is followed by several brood combs. It is here that the queen resides. Further away from the opening and the brood combs we find the honey storage combs. It is these that we want to harvest. In a frame hive we find the honey combs on either side of the brood, since the opening is location in the middle. With the frame hives we place so called supers above the brood box. These supers will be filled with honey if the colony is strong and actively collecting nectar.

The male bees or drones are produced by the workers when they become aware that the queen needs replacing. One identifies drone brood easily since the cells are larger than ordinary worker brood cells. The beekeeper may cut drone cells out of the comb to postpone the inevitable (see bee management).

The inspection

All movement should be gentle, never make shock movements and keep noise to a minimum. Use cow manure only in the smoker and NEVER plastic for fire (or fire starters).

The use of the smoker

Before you start, smoke all the hives in the apiary through the opening. Then smoke the hive you want to inspect a bit more. Wait a few minutes for the effects of the smoke to work. Smoke induces the bees to gorge themselves full with honey, just in case fire reaches the hive and they will have to take flight, in which case they need to be full with honey to sustain a long journey and starting a new hive! Once a bee is full with honey she is docile and less likely to behave aggressively. Honey is the stored food for the bee larvae and for the bees themselves.

Continue with the inspection

The beekeeper should open the hive on the far side of the opening. Start by knocking gently on the top bars. When these sound solid you can conclude there is honey on these. Pry the bar loose without disturbing the other bars. Once there is a small opening add a bit of smoke and wait for 20 seconds. Continue to take this bar straight up and once nearly out drop most of the bees back in the hive with one down shake. Introduce a little smoke in the hive. Most of the bees are off this comb and inspect it now. Gently turn the comb down side up to inspect the other side. If all honey is capped, this could mean the hive is ready to be harvested (robbed). Inspect the next comb (further away from the opening). If here is honey but uncapped, conclude the hive is not yet full. Place the comb back in exactly the same position as it was.

Now skip two or three bars and open a new bar. Proceed as above. If this bar contains brood, closely inspect how much brood and how much pollen and honey (on top side) of the comb. Is it even and capped or uncapped? Continue to inspect further towards the opening, now taking out each comb inspecting the evenness of the brood, looking for large numbers of drone cells and or queen cells and while at it try to locate the queen.

Once you have seen all brood combs now make your conclusion as to the functioning of the queen. Many drone cells means the queen is no longer as productive as before.

Construction of a few queen cells on underside of comb means workers are actively producing a new queen. Uneven brood means queen is not active enough. Lack of brood, queen is no longer laying or may even have died already. Have you seen sick or dead brood?

Take action according to your observations. Above inspections should be done in every hive. Appropriate action should be taken.

The Harvest

Top Bar Hive. However above described inspections should not take place during the major honey flow. During this period the brood and the queen should be left in peace. Only full honey combs may be cut off the bars, and the bar not yet capped should be moved towards the brood. The other bars with less honey or less comb drawn) should follow and the empty (just harvested bars) should be placed at the far end. During this action use as little smoke as possible in order not to contaminate the honey with a smoky flavor.

The fully capped combs can be placed in a dish or container. These are ready for extraction.

Leave enough honey for the bees to continue their work. Towards the end of the honey flow leave at least two fully capped combs for the bees as well as all the unfinished combs further away from the brood section.

It is good practice to obtain top quality honey to leave capped honey comb for an extra week (or two) so the bees can dehydrate the honey better. Disadvantage is that the beekeeper must regularly empty top bars otherwise the bees may find there is not enough storage space and they may stop collecting or even abscond. This process disturbs the colony and disrupts nectar collection.

Frame hive. The best practice is to keep on adding supers above the brood box (with queen excluder) until the end of the mayor honey flow. Add an empty super when the last one is filled for 2/3 rds. The great advantage here is that the colony is the least disturbed thus able to continue their hard work of harvesting nectar and producing honey. Once the honey flow has stopped the bee keeper may now collect the supers in their totality, ensuring to leave at least one super for the bees to survive the winter months. The supers can be taken by using a bee escape board thus allowing as many bees to be saved from death.

Traditional hive. Open the hive at the far side away from of the opening. Proceed to cut away comb with honey only. Once you reach brood combs stop the 'robbing' and close the hive immediately as tightly as possible. The disadvantage here is that the harvester has to cut away newly drawn comb not yet filled with honey, honey comb with young honey not yet capped and s/he may even (unintentionally) cut away brood-comb. The colony is most disturbed when residing in this type of hive. As a result the harvested quantity may be low, the bees may get very aggressive and/or abscond.

Consider to move the colony from a traditional hive to a TBH of a FH. Open the traditional hive along the length. Cut loose each comb with brood and place this comb in the extra constructed frame on the top bars and attach with thin metal wire. Make very sure the queen is moved with these brood combs. Now close the TBH with all the bars and allow the rest of the bees to enter their new home through the opening on one of the long sides. Once they are all in burn the traditional hive to avoid the bees from returning to their old home!

Extracting top quality honey

Harvesting of honey is the most important factor determining the quality. Keep honey from traditional hives and any honey containing pollen or brood or not-yet being capped separate from the export honey. What follows is advice for export quality:

The harvest:

1. harvest only from TBH and FH
2. harvest only fully capped honey
3. leave honey in hives at least one month after capping (to reduce moisture content).
4. Remove with knife any visible contaminations from the honey-comb

Processing:

1. Extract only honey from capped combs;
2. de-cap the honey comb with warm knife immediately prior to centrifuging;
3. make sure the centrifuge is completely clean and free of dust and water;
4. filter the honey as it flows in the container after centrifuging;
5. do not warm the honey excessively (will speed up crystallization)
6. fill sterilized pots immediately after sterilization;
7. Fill pots full just under the rim;
8. Close pots with lids;
9. allow to rest for 4 days or more;
10. skim off the wax particles and close pot. Ready for retail.

The time between the harvest and extraction must be as short as possible but definitely done within two or at the most three days.

Once the honey is in the sterilized pots without having to be warmed up, the time between closing the jar and the honey beginning to crystallize may be several weeks. Thus the honey should be retailed within that period. The purer the honey the longer it will take before it will start to crystallize.

Bee management

When the workers are no longer happy with the activities of the queen, they will begin to produce more drones than normal. AS a bee keeper you can decide to cut away the drone cells and thus postpone the process for a while. But now the bee keeper should be aware that something is amiss in the colony.

First try to locate the queen and inspect her. Is she old and looking tattered then she needs to be replaced soon. Is the queen fine but is the colony crowded then we can split the colony to allow for more space. Check also if there is enough space for honey storage.

Also consider if there is enough food available in the hive and or in the direct neighborhood.

Consider allowing the bees to rear a new queen. Leave one healthy and strong looking queen cell to grow while taking the other queen cells off the combs. Normally the new queen will fly out, be fertilized and return to the hive. She will now battle with the old queen and soon the colony will have a new queen! The beekeeper may assist and kill the old queen so as to pave the way for the new queen. If the old queen is still strong she may force the new one out who will then take a large number of workers with, leaving a weaker colony than before.

Avoid absconding. Absconding often is the result of a management failure. The bees may be too crowded, they may be hungry they may feel the threat of a predator (chickens and bees do not go well together) or the queen may not be active and the workers may have chosen to produce a new queen. Two queens is impossible so then one part may take flight with the new queen

Colony splitting allows a strong over-crowded colony to produce two colonies in two hives.

Queen rearing and killing the old queen is also a method to avoid absconding.

Feeding the colony in times of low food supply with sugar syrup and taking the threat of predator(s) away from the hive.

Moving bees. Bees must be moved in the early hours of the evening when the entire colony is inside the hive, busy with cleaning, making honey, drawing out comb and ventilation. The opening should now be closed preferably with a single newspaper sheet. The hive with its contents should now be moved at least 3 kms from its original place. The newspaper can now safely be removed from the entrance and the bees will wake up in a new and hopeful nectar rich environment. If a hive needs to be moved within the apiary/compound one can move the hive 1 meter every other night until the final destination has been reached.

Annex 9: Terms of Reference for the Study

1. Background

Bale Eco-Region of Ethiopia is one of the areas with diverse natural resource cover; both flora and fauna. However, recently there is accelerated degradation of natural resources; especially the forest and associated areas, which serve as a habitat for some of the endemic wildlife (Mountain Nyala and Ethiopian Wolf), and is suitable for beekeeping. The forest is under heavy pressure due to agricultural encroachment. Cutting of trees for different household demands is the major cause for the loss of forest cover and loss of wildlife. The local communities adjacent to Bale Mountains National Park are dependent on forest based livelihoods. The problem is further exacerbated due to the absence of diversified livelihood support systems for local communities, such as beekeeping.

The FARM-Africa – SOS Sahel Ethiopia BERSMP works in Partnership with the Oromiya Government's Bale Forest Enterprise (BFE).

Cognizant of the above problem, SOS Sahel Ethiopia – Farm-Africa; having experiences and expertise in community based natural resource management /rural development; in co-operation with Oromia State Forest Enterprise Supervisory Agency developed a programme that will be implemented in 13 Woredas of the Bale EcoRegion. Eco-Region Sustainable Management Programme (BERSMP) is a 6 year program with the goal of improving both biodiversity conservation and prompting community livelihood through small scale enterprise development. One of the objectives of BERSMP is ensuring natural resource based sustainable livelihoods through small enterprise development. The main approach of the programme is to provide market-based support to smallholder producer farmers. Establishing linkages with private sector services is one of the essential components of the programme.

Beekeeping is an environmental friendly and non-farm business activity that has immense contribution to the local household economy, as well as the national economy as a whole. Ethiopia has a huge natural resource base for honey production and other hive products, and beekeeping is traditionally a well established household activity in almost all parts of the country. Ethiopia, having the highest number of bee colonies and surplus honey sources of flora, is the leading producer of honey and beeswax in Africa. On a world level, Ethiopia is fourth in beeswax and tenth in honey production.

However, the benefit from the sub-sector to the nation as well as to the farmers, traders, processors and exporters is not satisfactory. The implication is that there is a need to integrate the efforts by different actors to establish mechanisms in which the bees products producers and other actors can overcome and add value to their products, and become stronger negotiators in local, regional, and international markets, thereby securing their income and livelihoods.

Hence, FARM-Africa - SOS Sahel Ethiopia would like to commission a consulting firm to undertake a Honey and Bee Product producers - Private Sector linkage creation study and implementation.

As a result of this consultancy BERSMP aims to make significant progress in;

- (a) identification of private sector investors in the area of honey and bees products processing and marketing
- (b) identification of Honey business development challenges and opportunities (inc. value chain analysis)

- (c) establishing working linkages between honey and bee product producers and private sector organisations.

2. Purpose of the Mission

The natural resource of honeybee populations in Ethiopia in general and in Bale areas in particular remain plentiful, disease and predator-free compared with other parts of the world, and the climate and vegetation enable beekeepers to harvest worthwhile volumes of honey, beeswax and other bees products. One of the main factors limiting productivity of bees' products in this same country is lack of market access, inadequate involvement of the private sector, limited productivity and limited knowledge on diversification of bees' products.

It has already been proved that with training, farmers can harvest honey and beeswax that are of excellent quality and with the strengthening and supporting of the private sector; significant volumes of honey and beeswax can be assembled and marketed. However, to achieve more productivity with better marketing within Ethiopia, and eventually internationally, it is believed that all the concerned bodies i.e. NGOs, public and private sectors need to work on further strengthening of the apiculture sector. This particular task is therefore, conceived to undertake a Honey and bee products producers - Private Sector linkage creation initiative and implementation in the context of the Bale areas.

The specific purposes of the initiative are to;

1. Assess the existing constraints and opportunities in the area related to apiculture development (product quantity / quality / production capacity / product potentials). Recommend future actions to be taken by the BFE / BERSMP and Private Sector actors.
2. Carry out a participatory Honey Value Chain Analysis with the BFE / BERSMP and Private Sector actors
3. Carry out a participatory Honey Value Chain Analysis with the Honey Producer communities
4. Identify well reputed local private sector investors to work closely with the Honey producers in the area, in the development of Honey Producers – Private Sector business partnerships
5. Devise strategies and actions to convince the Private Sector to invest in Honey and bee product processing in the project area. For example involvement in the Goba Collection, Processing and Learning Centre
6. Identify the roles of the different actors including the supports to be provided by the Bale Forest Enterprise / BERSMP programme to both Honey Producers and the Private Sector.
7. Develop a Business Plan template proposal document to be used by the Private Sector to start with
8. Facilitate a visit to the programme area with the identified Private Sector actors

3. Design and Methodology

This task aims to use a range of different methods, both qualitative and quantitative; and work at Local, Regional and National levels. The following tools and techniques are expected to be employed:

- a. **Secondary Data review / Document analysis:** Different documents at national and regional (programme) levels and similar interventions will be reviewed – i.e. Bale bee forage assessment / training manual / Natural products review
- b. **Interview** with selected actors who are working on the sector (cooperatives, government stakeholders, private sectors, consumers etc.)
- c) **Focus Group Discussion:** to gather more in-depth data on the challenges and opportunities of the sector
- d) **Rapid Business Analysis** – with participating groups
- e) **Participatory Value Chain Analysis** – with participating groups

4. Schedule and Person/Consultant Specification

The mission is proposed to commence in the month of March 2008 and will take no more than 30 consultant days of professional input. This time allocation includes planning and design, data collection, desk review, travel, write up and linkage creation. Details of agreement will be indicated in the MOU that will be signed between BERSMP and the consultant firm.

Consultant Staff

Two people (one with planning and marketing background and one with beekeeping/forestry background) will be deployed for this task. The beekeeping/forest specialist will be responsible to clearly identify the existing/potential bee forage and other related opportunities in the area to attract the private sector to invest in the area. The lead consultant is the marketing specialist who will be responsible for writing the final report and for creation of the link between the BFE / BERSMP – the Honey producers and the Private Sector.

The follow up work will be the sole responsibility of the marketing specialist.

The tentative schedule of the task is presented hereunder.

No.	Activity description	No. of days	Implementation date
1	Design preparation	1	
2	Briefing with the BFE / BESMP and reach an agreement on the final to-do-list of the task	1	
3	Secondary data/document collection at national and regional levels	4	
4	Visit to the programme areas and undertake assessment	6	
5	Organizing data and report writing	4	
6	Compiling & merge the two reports into one and Presenting the first draft of the report for comment	2	
7			
8	Submitting and presenting the final report incorporating comments given	1	
9	Contact identified private sector	3	
10	Develop a template proposal document to be used by the private sector to start with	3	
11	Facilitate a visit to the programme area with the identified private sector	5	
12	Follow up visit to support the private sector (to be agreed at a later stage)		
	Total days required to undertake the task	30	

5. Expected Output

The Programme expects from this mission a report that clearly identifies challenges, opportunities and recommendations as a way forward for future action

The Programme expects a sound business relationship created between the Honey producers in the programme area and a dependable local Private Sector organisation.

As a result of this consultancy BERSMP aims to make significant progress in;

- (d) identification of private sector investors in the area of honey and bees products processing and marketing
- (e) identification of Honey business development challenges and opportunities (inc. value chain analysis)
- (f) establishing working linkages between honey and bee product producers and private sector organisations.

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