

HONEY SECTOR INVESTMENT OPPORTUNITY BRIEF

Commercial Farm Based Collection Centers and Integrated Beekeeping



EXECUTIVE SUMMARY

This apiculture sector investment opportunity brief highlights the establishment of a commercial bee farm based collection center with integrated beekeeping. The business will be engaged in the commercial bee keeping, honey production, and setting up of a collection center to be a consistent supplier of quality raw honey to local producers. The collection capacity of the anticipated commercial farm is assumed to start by collecting 50 tons of raw honey per annum. The opportunity has an overall business objective of establishing an integrated commercial apiculture capable of producing multiple honey variety.

Currently, there is an increasing demand for honey and beeswax products in Ethiopia as well as in the international market. Ethiopia has an ample population of bees ready to meet the growing demand of honey. The country has the potential of producing up to 500,000 tons of honey and 50,000 tons of beeswax per annum.

The average annual demand for honey products in Ethiopia in the next ten years (2013-2022) is expected to reach 90,357 tons. This is as a result of the current high population and future growth trends including urbanization, lifestyle changes and growing amount of disposable income.

The total investment requirement is estimated at approximately ETB 4,039,391 out of which ETB 400,000 is required for the construction of the collection centers; ETB 500,000 is for the purchase of equipment needed for the collection and storage of the raw honey. The farm will create employment opportunities for 22 individuals. The initial goal of this business is to establish an integrated farm in order to produce high quality honey in different honey potential areas and open a collection center so that raw honey will be easily available for processors. The project is financially viable with an average annual net profit of ETB 3,291,969, an average net profit margin of 53.2%, and a five-year internal rate of return (IRR) after tax of 69% and an NPV of ETB 8,432,880.

PRODUCT DESCRIPTION

According to the Quality and Standard Authority of Ethiopia (QSAE), honey is defined as the natural sweet substance produced by honey bees from the nectar of blossoms which honey bees collect, transform and combine with specific substance of the their own store and leave in the honey comb to ripen and mature.

Honey consists essentially of different sugars, predominantly glucose and fructose. Honey contains also protein, amino acids, enzymes, organic acids, mineral substances etc. Honey varies in color from nearly colorless to dark brown. The flavor and aroma of honey vary but are usually derived from its plant origin.

Honey is generally used as a nutrient food and commonly used also in ayurvedic medicine system. In Ethiopia, honey is widely used for the preparation of favorite national drink called "tej" and for food in the form of bread spread or as sweetener in home baking and medication. The products that this business aims to produce and market primarily are different types of honey including forest honey types such as *asgerawa* honey and also special coffee honey.

MARKET BACKGROUND

Beekeeping in Ethiopia is one of the traditional farming activities undertaken by small farmers for supplementary income. Related to this, honey is traditionally consumed with bread or used to prepare alcoholic beverage, Tej (local honey wine). Nowadays, it is believed that honey has a potential to alleviate poverty in the nation and bring benefit from export.

Ethiopia has plenty of honeybees capable of meeting the growing demand for honey. However, more than 95 percent of the total honey produced is used to prepare Tej. Honey in Ethiopia is used for many purposes, for direct and indirect consumption. Directly, raw honey is consumed in tea, in milk or with bread around breakfast time. Indirectly, honey is consumed in tej, cakes and other processed food items. The consumption pattern of the population for honey fluctuates with income, age group, location and availability.

The demand for Honey products in Ethiopia differs across seasons. People tend to consume more honey on holiday seasons, especially for the purpose of tej production. The fasting period for both Christian and Muslim religions is also accompanied by high demand for honey. Honey in this period is used to make fetira, mushebek, baklava and other types cake. Birz, an unfermented or non-alcoholic honey wine is also a by-product locally.

Ethiopia is one of the largest honey producing countries in Africa. There is also large consumption of honey in the domestic market. Although the majority of honey used is for a handful of products (mainly Tej) at the moment, the market is growing and different opportunities to sale table honey are present.

Despite exceptional natural conditions and the ability to produce quality honey, Ethiopia’s share of the international honey market remains very low. Of the total 1.54 MTs traded globally, Africa’s share stands at 12% and Ethiopia produces 25% (the equivalent of 3% of the international market).

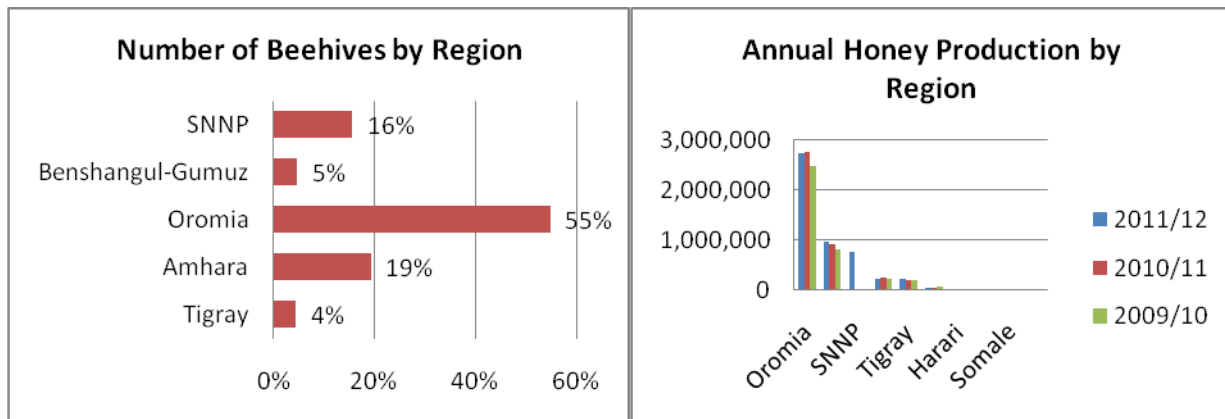
There is also a rapidly increasing global demand for high quality honey. For example, in the 18-month period between January 2012 and August 2013, the global honey imports into the United States increased from a value of \$158,451 to \$342,110 per month. The average retail price of honey between January 2006 and January 2013 also rose from \$3.57 to \$5.88. Considering that the U.S. is one of the major honey producing countries in the world, this is a clear indication that the demand for quality honey is not being satisfied by the current supply. This offers a significant market opportunity to engage in the sector.

SUPPLY

Bee products are highly distributed across the different regions of Ethiopia. However, the most important honey producing regions are Oromia, Amhara, SNNP, Benshangul-Gumuz and Tigray (BOAM, SNV 2008; CSA, 2011/12).

According to the Agricultural sample survey (2011/12), Oromia has the largest number of beehives followed by Amhara and SNNP respectively. Similarly, in terms of annual honey production, the Oromia region is the leader followed by Amhara and SNNP regions, respectively. Annual output has increased during the years of 2009/10 to 2011/12 in these regions, except in Oromia which showed a slight decline in 2011/12.

Figure 1: Number of Beehives and Annual Honey Production by Region



Source: CSA, 2011/12

Jimma, Illubabor and West Wellega have been the areas of Oromia region with the highest number of hives in 2011/12. In the Amhara region, North Gondar, East Gojam, West Gojam and South Gondar have had the highest number of hives in the same period. Kaffa and Sidama have had the largest number of hives from the Southern region while Central and Southern Tigray registered the highest hive numbers from the Tigray region. From Benshangul-Gumuz region, Metekel has had the largest number of hives in 2011/12. For the purposes of this investment brief, the profiled business will be situated in the high honey potential areas of the country including Oromia region.

Table 1: Production of Crude Honey in Ethiopia

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

Source: Apitrade Africa 2010

Crude honey is honey in its raw form (i.e. as it is directly collected from beehives). Crude honey is mainly purchased from beekeepers, local collectors and cooperatives around 27-42 ETB per kg and it is mostly used for brewing tej and birz. For industrial honey processors, cooperatives and unions are the most appropriate and most preferred suppliers of crude honey. The processors need crude honey in bulk; cooperatives and unions are in a better position to efficiently meet this need as they collect honey from their member (smallholder farmers) and sell it to unions. The unions then sell the crude honey to individual customers, retailers and industrial processors.

Even though semi-processing increases the value of honey, unions are not engaging in processing due to existing substantial demand for the honey in its crude form. As the preparation of tej does not require honey filtering, tej makers prefer to buy the crude honey. Similarly, as industrial honey processors have the capacity and equipment to process the honey in a better manner, they also prefer to purchase honey in its crude form.

Honey is available in the market with different types as it is sourced from different locations. Honey in Ethiopia is supplied to the end users through two chains; direct purchase farm gate, and from wholesalers at Merkato (for the purpose of tej production and table honey processing).

The major challenges of the sector includes poor technical know-how on the part of bee-keepers on appropriate bee-hive management and harvesting techniques leading to poor quality and low yields, widespread use of traditional beehives and harvesting forest honey. To this end, the envisaged business will solve the problems by producing and supplying high quality honey in well managed commercial farms. Most people in Addis Ababa go to "Mar Berenda" (Merkato), which is the biggest supplier of honey. In Mar Berenda, different varieties of honey are available depending on the consumers specific needs such as for tej production and medicinal use. The type of honey sold at Merkato is mostly sourced from Gojam, Gondar, Ambo and Sidamo.

Currently, there are more than 20 table honey processors and suppliers in the country. Some of them supply their products to both the local market and international market. These producers need consistent supply of quality raw honey as an input for their processing plants. Establishing such kind of honey collection center will bring a great opportunity for them to focus only on value addition; as opposed to engaging in sourcing and dealing with producers.

Although Ethiopia is recognized as top ten producers of honey globally, the nation's output is still below 10% of its production capacity and this entails the existence of notable challenges strangulating the sector.

Beehive is one of the major factors in honey production. According to Central Statistic Agency (CSA) report, a total of about 5 million hives exist in the rural sedentary areas of the country. Out of this figure, 95% are traditional beehives. To a very limited extent, intermediate and modern beehives also exist. In terms of yield, the intermediate and modern beehives produce more than double of the output obtained from the traditional hives.

Table 2: Honey Production from the Three Beehives

Honey Production	2009/10	2010/2011	2011/12
All type of Beehives (Number)	4,598,226	5,130,322	4,993,815
Production (Kilogram)	41,524,967	53,675,361	39,891,459

Traditional Beehives (Number)	4,447,011	4,944,380	4,772,537
Production (Kg)	38,833,445	51,023,303	36,487,937
Intermediate Beehives (Number)	33,151	41,684	81,596
Production (Kg)	580,891	387,450	475,855
Modern Beehives (Number)	118,064	144,258	139,682
Production (Kg)	2,110,631	2,264,608	2,927,667

Source: CSA, 2011/12

DEMAND

Honey is primarily consumed in Ethiopia for its medicinal value rather than its nutritional value, especially, in the rural areas of Ethiopia. Especially Gerawa honey and White honey, which are dominantly harvested from the Tigray region, are believed to have high medicinal values. Some end users also in the urban areas also consume honey for its nutritional value.

Most Ethiopians traditionally consume honey in small quantities. The honey is typically diluted with water, mixed with herbs and fermented in big pots. Honey wine or Tej is a very popular honey drink in Ethiopia, and is consumed by people across the country. In developed countries, the demand for honey is observed to have increased significantly. Besides for direct and indirect consumption, honey is also used for the production of cosmetic goods.

Honey demand is high during the rainy season (flu season) and since honey is traditionally assumed to bring warmth to the body, its use is higher during the months of June to September than other seasons. Consumers source their supply of honey from different suppliers. In regard to convenience, people will purchase more honey if it was available nearby. Supermarkets, kiosks and wholesalers make honey products more convenient for the consumer to purchase with different choices. Packaging and branding also help the consumer to identify the products that they prefer.

Other than direct consumption and tej production honey is locally used as medicine. A specific type of honey called tazma is known for its remedy. As mentioned above, the major factors that affect the demand for honey includes the current expansion of traditional restaurants that produce and offer tej, the change of seasons, the usage of honey as a substitute product for sugar and the population growth.

Studies conducted on honey demand reveal that people aged 14 and under and individuals above the age of 55 tend to consume at higher rates than the other age groups (between 15-54) In Ethiopia, the population of the age group under 14 and under is estimated to be approximately 45% (some 40 million), demonstrating a high market potential locally.

The demand for honey in rural areas, where there is a significant honey production, exceeds the urban demand. But there are also rural parts of Ethiopia where honey demand is less than the urban areas. The demand for honey is also different across income groups. Honey products are not considered as necessity food items so the demand for honey is higher for people who can afford the prices or high-income groups. The demand for crude honey increases in parallel with the demand for processed honey (input driven).

Table 3: projected demand for processed honey from the year 2008 to 2017

Year	Quantity (Ton)
2008	4,774
2009	5,251
2010	5,777
2011	6.354

2012	6,990
2013	7,688
2014	8,457
2015	9,303
2016	10,233
2017	11,257

Source: Profile on honey processing document, ECCSA

PRICING

Honey is sold at a different price ranges between ETB 60 to ETB 130 per kilo, on average. As most consumers buy honey based on its quality not too dependent on price level. For the proposed project, the suggested price is ETB 80 per kg, at the lower tier of pricing, to increase sales and awareness of product.

COLLECTIONCAPACITY

Based on the projection demand level for processed honey, the envisaged collection center will start its operation by collecting 32,500 kg (32.5tons) of honey; which will grow by 15% in the second year.

RAW MATERIALS

The major raw materials / inputs of the project for the production of its quality honey include beehives (modern for a better production) and its accessories, bee colonies, forage/feed for its bees, harvesting equipment and food-grade plastic barrels for the purpose of collecting and storage of the honey produced in different flavors. As the anticipated farm is integrated, forage for the bees is not anticipated to be a challenge.

UTILITIES

The major utilities required by the envisaged project are electric power, water and fuel oil. The cost of these services is estimated to be minimal at slightly above ETB 8,280 per year.

PRODUCTION PROCESS

The project is aimed at producing high quality crude honey in different flavors and supply to processors and distributors using a modern and system. The bulk production of crude honey involves the installation of beehives in forest areas and providing the required inputs needed to makes the bees productive. One of the major honey types that the business is looking to produce is coffee honey. Coffee honey is a relatively superior type of poly-floral honey produced primarily from the nectars of the coffee plant, which gives the honey a distinct coffee flavor and taste.

ENVIRONMENTAL IMPACT

The business will be established in parallel with the production of other crops including coffee, maize and other crops in an integrated farming manner so that the production of the crops will also be increased. Beekeeping activity, besides the production of honey and other bee products, has a positive contribution for cross-pollination, which will bring sustainable contribution to the agriculture and economy of the nation. Considering this, the Government of Ethiopia has paid a close attention to the apiculture sector. As such, a proclamation providing for apiculture resources development and protection was drafted with the aim of:

- ✓ Promoting household and commercial beekeeper development in areas of high apiculture resource potential to realize appropriate contribution of the subsector in the process of rapid economic development;

- ✓ Ensuring sustainable contribution of honey products to enhance production and food security and poverty reduction efforts; and
- ✓ Developing apiculture resources through conservation of the biodiversity of honeybee races and melliferous plants.

MACHINERY AND EQUIPMENT

The farm machinery and equipment required for the project is estimated to cost ETB 500,000. These include the necessary inputs and equipment to produce crude honey.

LAND, BUILDINGS AND CIVIL WORKS

The project only requires an already established farm such as coffee farm that does not use pesticides for cultivation in order to install beehives and start producing honey. Thus, the cost of this activity and finding land is not expected to be significant.

STAFFING

The human resources of the company consist of skilled and experienced individuals in the field of honey farming. The total human resource required for the envisaged farm is 22 persons. The estimated annual salary requirement is anticipated to be ETB 474,000. At time of processing machine installation, training will be provided to operators and management team on how to properly operate and maintain equipment.

FINANCIAL ASSUMPTIONS

The financial model of the project is based on the following assumptions;

		Year 1	Month 2	Month 3	Month 4	Month 5
Honey Selling Price	Selling Price	80	84	88	93	97
Pure Honey Production	Quantity	50,000	57,500	66,125	76,044	87,450
Total Sales (Honey)	Total Sales	4,000,000	4,830,000	5,832,225	7,042,412	8,503,712

*Collection capacity of the farm will increase by 15%

Cost Estimation

Description	Year 1	Year 2	Year 3	Year 4	Year 5
Quantity (Honey Collected)	50,000	57,500	66,125	76,044	87,450
Cost/Kg	40	42	44	46	49
Material Cost	2,000,000.00	2,415,000.00	2,916,112.50	3,521,205.84	4,251,856.06

TOTAL INITIAL INVESTMENT COST

The total investment cost of the project including working capital is estimated to be ETB 4,039,391 (\$207,148). The following table summarizes the total investment cost breakdown;

Investment	Amount
Building	400,000
Vehicle	150,000
Equipment	500,000
Miscellaneous	50,000
Total Investment	1,100,000
Working Capital (3 Month)	2,939,391
Total Working Capital	2,939,391
TOTAL START-UP CAPITAL	4,039,391

FINANCIAL ANALYSIS

Based on the projected financial statement, the project will generate profit throughout the projected period (5 years). Annual average net profit after tax is projected to be ETB 3,291,969 with an average margin of 53.2%. The IRR of the project will be 69%, indicating the financial viability of the business. The NPV, at a 10% discount rate, is expected to be ETB 8,432,880.

Description	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	4,000,000	4,830,000	5,832,225	7,042,412	8,503,712
Operating Costs and Expenses	888,000	932,400	979,020	1,027,971	1,079,370
Gross Profit	3,112,000	3,897,600	4,853,205	6,014,441	7,424,343
Depreciation	100,000	100,000	100,000	100,000	100,000
Interest	423,173	350,100	267,856	175,290	71,106
Gross Profit less Depreciation	2,588,827	3,447,500	4,485,349	5,739,151	7,253,236
Profit Tax (30%)	776,648	1,034,250	1,345,605	1,721,745	2,175,971
Net Profit	1,812,179	2,413,250	3,139,744	4,017,405	5,077,266
<i>Profit Margin</i>	<i>45.3%</i>	<i>50.0%</i>	<i>53.8%</i>	<i>57.0%</i>	<i>59.7%</i>