

Trend Analysis of Honey Production, Export and Local Supply in Ethiopia

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Abstract

Ethiopia has a huge potential for honey and beeswax production. Nevertheless, the conventional beekeeping method has yet to fully realize this potential. Bee colonies, queen bees, honey, and beeswax are important products of beekeeping that can be sold or consumed for personal use. The production of honey and beeswax in Ethiopia has enormous potential. However, this potential remains untapped by the practice of traditional beekeeping. Important beekeeping products are honey, beeswax, queen bees and bee colonies, which can be sold or consumed for personal use. Beekeeping, moreover called apiculture, is administration of nectar bee colonies for fertilization of crops and nectar and other items. It is an ecologically inviting and non-farm trade movement attempted by ranchers and landless individuals. Ethiopia incorporates a longer convention of beekeeping than other nation within the world amid time of lord Ezana, around the 3rd century Advertisement. The objective of this ponder was to analyze the generation. Export, local consumption, protein supply and post-harvest loss of honey in Ethiopia. 10 years data was used from FAOSTAT online data source. To analyze the data, excel was employed. The method of the analysis was descriptive mainly using different types of charts like bar graph, line chart and detailed description was given. From the analysis result the major findings were the production, the export, local supply reducing at decreasing rate and post-harvest loss was at the pick in 2021. We recommend that the government of Ethiopia should provide due attention for this sector which is source of foreign currency and important source of protein which prevents malnutrition.

Keywords

Ethiopia, Export, Honey, Production, Protein

1. Introduction

Agribusiness plays a key part within the nation. Around 12 million smallholder cultivating family units create 95% of all rural products [2]. In 2000, the agricultural sector employed 76.4% of the working population gradually declining to 66.2% in 2019 (UNDP 2019). This decline is accompanied by climate change (droughts), rural exodus and the change in policies and livelihood. Development and modernization thus also reached fields that have been dominated by traditional techniques, such as beekeeping [6].

The production of honey and beeswax in Ethiopia has enormous potential [11, 16]. However, this potential remains untapped due to the practice of traditional beekeeping [15,14]. Important products from beekeeping include honey, beeswax, queen bees, and colonies, which can be sold or consumed for personal use [12,13].

Beekeeping, also called apiculture, is management of honey bee colonies for pollination of crops and honey and other products. It is an environmentally friendly and non-farm business activity undertaken by farmers and landless people.

That means, it does not occupy cultivated land, requires less investment and provides quick economic benefits, besides, it being a nonpolluting intensive agricultural practice. [6]

Ethiopia has a longer tradition of beekeeping than other country in the world during time of king Ezana, around the 3rd century AD; wax was needed for religious ceremonies and honey for nobility and the social elite for making traditional beverages. Despite its long history, beekeeping in Ethiopia is still an undeveloped sector of agriculture.

According to Sillman (2021) Nectar generation frameworks comprise of different life cycle stages, the most presumption for the framework development was that the same sums of items and administrations (nectar, DB protein, dust protein, and crops through pollination) were created within the nectar generation and reference systems. The elective generation pathways of the reference framework comprised of extended edit generation without fertilization for rapeseed and elective sugar generation utilizing sugar beet. The comparable protein source for DBs was poultry, which is moderately feasible and a broadly utilized animal-based protein [4], whereas that for dust was rapeseed protein. In expansion,

rapeseed protein and sugar from sugar beets are as of now considered among the examined framework of beekeeping. Beeswax is additionally a by-product of honey production. Be that as it may, beeswax is utilized for the generation of modern hives and so is expected to be utilized interior the framework boundaries. Uusitalo et al. (2019). It plays a great role directly by providing valuable output such as honey, beeswax, queen and bee colonies, products such as pollen, royal jelly, bee venom and propolis, and indirectly by providing nutritional, economic and ecological security. Besides that, it also provides an employment opportunity and helps in financial security.

The nation's colossal variety of agro-climatic conditions and biodiversity favored the presence of broadened bumble bee vegetation and colossal number of honeybee's colonies. The nation has almost 10 million bee colonies and over 800 distinguished nectar source plants. Ethiopia is fourth biggest nation another to India, China and Turkey within the world by having 6,189,329 apiaries. Directly, conventional timberland and terrace, transitional and frame/modern hives are utilized in beekeeping. Out of add up to hives, there exist 95.73% conventional, 1.30% transitional and 3.33% outline hives [10]. Around one million family units are involved in bumble bee as commerce and more than 5.15 million hived honeybee populations are found within the nation.

Honey, beeswax, and other bee products are in high demand worldwide and are expanding. The Ethiopian government has determined that this industry has room to grow. Part of this growth potential includes focusing on exports as a source of foreign exchange, which helps small-scale farmers by providing them with extra income off the farm and by reducing poverty in rural areas. In addition to beekeeping itself, the industry is seen as having the ability to create jobs in both rural and urban areas. It has also encouraged young people without jobs in urban and rural areas to produce beekeeping supplies and hives.

The country has a very high number of active bee colonies, estimated at over 10 million. It is estimated that between 5 and 7.5 million of these colonies live in hives, the rest are wild. If this estimate is correct, it shows that there remains significant opportunity for further growth through additional hives. Estimates of actual honey production are also difficult to determine accurately - although the Ministry of Agriculture and the FAO put production at 53,000 tons of honey per year. The country's annual beeswax production is said to be around 3,800 tons. However, various sources estimate the annual production potential at 500,000 tons of honey and 50,000 tons of beeswax (GIZ, 2020). Traditional beekeeping is one of the oldest agricultural activities in Ethiopia and is still an essential part of the country's agricultural economy today [3].

1.1. Three Types of Beehives

The nation is estimated to produce 3,800 tons of beeswax annually. Nonetheless, different sources place the potential annual production at 50,000 tons of beeswax and 500,000 tons

of honey (GIZ, 2020). One of Ethiopia's oldest agricultural pursuits is traditional beekeeping, which continues to play a significant and vital role in the nation's agricultural economy today.

Most registered beekeepers (96.5%) use traditional hives placed in trees (see photo on page 42). The traditional beehives require low construction costs and minimal management while maintaining low productivity. The second type - the transitional hive - is also called top bar hive because its frame only has a top bar and no side or bottom bars. Many farmers and beekeepers in the two woredas are aware of this technique, but it is rarely used in practice, mainly due to the high investment costs, the advanced level of management required and the lack of tools. The modern beehive is made of wood and contains various chambers and a composite cover made of galvanized sheet metal.

Traditional hives are used for the majority of honey production in Ethiopia; these hives can hold up to 97% of the country's total bee population. This is in accordance with centuries-old Ethiopian practices, primarily pertaining to backyard beekeeping that is popular across the nation as well as forest beekeeping, particularly in the southern and southwestern forests. In contrast to more contemporary beekeeping techniques, this methodology is inefficient. More contemporary hives, such as top bar hives or frame hives, can produce up to 20 or 30 kg of honey annually, compared to the 5 to 8 kg that traditional beehives can produce per bee colony.

Nonetheless, different sources place the potential annual production at 50,000 tons of beeswax and 500,000 tons of honey. Up to 97% of all beehive population is housed in traditional hives, which are used for most of the Ethiopia's honey production.

1.2. Objective of the Study

1.2.1. General Objective

The general objective of the study is to analyze the growth rate of honey production in Ethiopia.

1.2.2. Specific objective

- To analyse the production of honey in the country
- To analyze the export and domestic supply of honey in the country
- To analyse the stock variation of honey in the country

2. Methodology

The 10-year production, stock variation, export and local consumption data was obtained from FAOSTAT which was from year 2010 to 2021. Descriptive statistics like percentage, charts, frequency were used to analyze the data. To analyze the data STATA 16 and Microsoft Excel 2016 was utilized.

3. Result and Discussion

3.1. Honey Production Trend

According to the study of Alemu honey production has a long tradition in Ethiopian [1]. The practice of beekeeping in Ethiopia is often integrated with crop farming and animal husbandry. In many regions of the country, beekeeping is an important additional income-generating activity for farmers, next to cropping and livestock rearing. Currently, the honey sector is part of the integrated household extension program run by the government to improve productivity and increase household income [2]. It is also believed to be one of the subsectors which tend to be inclusive of smallholders in Ethiopia [4]. Apiculture can importantly contribute to the livelihood of rural households, either by providing additional income through honey sale or by providing a high-nutritious food product for household consumption. Honey production is regarded as a poverty reduction strategy and as a tool for combating malnutrition in rural areas of developing countries [10].

As described in the graph below the Ethiopian honey production goes between 54 tons in 2010 and it fluctuates year to year. The maximum production was achieved in 2015 which was 59 tons of honey. The trend shows that increasing from 2011 to 2015 and now it is decreasing highly and records 10 tons in 2021.

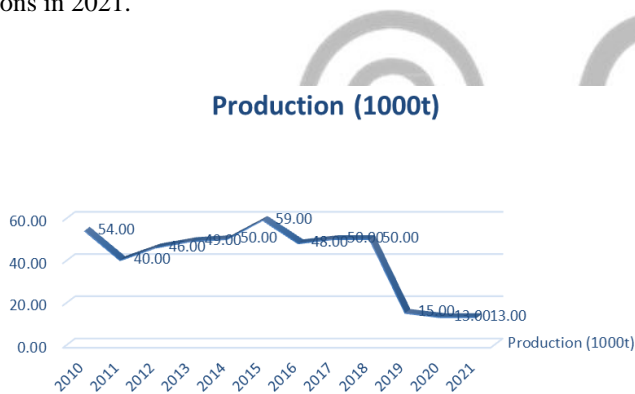


Figure 1. Honey production trend.

3.2. Honey Export

Honey export procedures in Ethiopia follow the following pattern: Registration of the company with the Ministry of Trade and Industry; Obtaining an export license from the Ethiopian Chamber of Commerce and industry associations; Acknowledgment of receipt of order by a buyer; Conclusion of the export contract (payment modalities for the export shipment and transmission of a copy to the respective commercial bank); Submitting an application for an export license to a commercial bank; Registration of the export shipment by completing the customs declaration attachment form at a commercial bank; Application for quality inspection and certification by Ethiopia Conformity Assessment Enterprise or Bless Agri Food Laboratory Services PLC, Customs Tariff Compliance by Customs Authority; insurance of export cargo;

Customs declaration from the customs authority and other identified information that may be related to the export of honey for a special permit from the Ethiopian Food and Drug Authority. Table 1: Aggregate honey production in Ethiopia from 2010 to 2021; Source FAOSTAT.

Honey production in Ethiopia reduced modestly to 13K tons in 2022, remaining relatively unchanged against the previous year. Over the period under review, production recorded a dramatic shrinkage. The pace of growth was the most pronounced in 2021 when the production volume increased by 0.5%. Over the period under review, production hit record highs at 66K tons in 2017; however, from 2018 to 2022, production stood at a somewhat lower figure. In value terms, honey production declined slightly to \$43M in 2022 estimated in export price. In general, production faced a sharp decline. The most prominent rate of growth was recorded in 2021 when the production volume increased by 5.2% against the previous year. Honey production peaked at \$262M in 2017; however, from 2018 to 2022, production failed to regain momentum. Please mention the Source: <https://www.indexbox.io/search/production-honey-ethiopia/>

Imports into Ethiopia Honey imports into Ethiopia contracted sharply to X tons in 2022, dropping by -47.5% compared with 2021 figures. Overall, imports, however, showed strong growth. The pace of growth appeared the most rapid in 2021 when imports increased by 1,937% against the previous year. As a result, imports attained the peak of X tons, and then declined sharply in the following year. In value terms, honey imports shrank significantly to \$X in 2022. In general, imports, however, saw a notable expansion. The most prominent rate of growth was recorded in 2021 with an increase of 1,895% against the previous year. Over the period under review, imports reached the maximum at \$X in 2019; however, from 2020 to 2022, imports stood at a somewhat lower figure. Please mention the Source:

<https://www.indexbox.io/store/ethiopia-honey-market-report-analysis-and-forecast-to-2025/>

The value of exports of commodity group 0409 "Natural honey" from Ethiopia totaled \$ 220 thousand in 2022. Sales of commodity group 0409 from Ethiopia went up by 26% compared to 2021: exports of commodity group 0409 "Natural honey" went up by \$ 46 thousand (cumulative exports of commodity group 0409 from Ethiopia amounted \$173 thousand in 2021)

Exports of commodity group 0409 "Natural honey" amounted to 0.007% of total exports from Ethiopia (cumulative merchandise exports from Ethiopia totaled \$ 3.08 billion in 2022). The share of commodity group 0409 in total exports from Ethiopia increased by 0.001 p.p. compared to 2021 (it was 0.005% in 2021 and cumulative exports from Ethiopia were equal to \$ 3.05 billion).

Exports of commodity group 0409 amounted to 32% of total sales of group "" from Ethiopia in 2022 (the value of exports of commodity group from Ethiopia amounted to \$676 thousand in 2022). The share of exports of commodity group

0409 in sales of commodity group from Ethiopia increased by 12.9 p.p. compared to 2021 (it was 19.6% in 2021, and exports of commodity group from Ethiopia were \$886 thousand).

Where does Ethiopia export Natural honey?

Top export destinations of "Natural honey" from Ethiopia in 2022:

1. Sweden with a share of 46% (101 thousand US\$)
2. United Kingdom with a share of 37% (82 thousand US\$)
3. USA with a share of 10.5% (23 thousand US\$)
4. Japan with a share of 4.23% (9.34 thousand US\$)
5. Saudi Arabia - 1.5 thousand US\$
6. Sudan - 1.15 thousand US\$
7. Korea - 919 US\$
8. Canada - 161 US\$

Exports structure of Natural honey from Ethiopia in 2022 represented by the following main commodity groups:

The honey bee is an important fruit and vegetable pollinator and a producer of honey and other hive products. Beekeeping is a sustainable and high-potential activity for local communities and especially for the rural poor to gain additional income through non-timber forest products, does not require much land or high starting costs, maintains biodiversity and increases crop yields. Ethiopia is one of the top ten honey and beeswax producers in the world but plays only a minor role in the international honey trade. [3].

The value of imports of commodity group 0409 "Natural honey" to Ethiopia totaled \$ 37 thousand in 2022. Sales of commodity group 0409 to Ethiopia went up by 140% compared to 2021: imports of commodity group 0409 "Natural honey" went up by \$ 21 thousand (the value of imports of commodity group 0409 to Ethiopia was equal to \$15.5 thousand in 2021).

Imports of commodity group 0409 reached 0.178% of total imports of group "" to Ethiopia in 2022 (imports of commodity group to Ethiopia totaled \$20 million in 2022). The share of purchases of commodity group 0409 in total imports of commodity group to Ethiopia increased by 0.118 p.p. compared to 2021 (it was 0.06% in 2021, and imports of commodity group to Ethiopia accounted for \$25 million).

Regarding the last 9 years honey export figure two shows that it was increasing up year 2015 but after 2015 the last 5 to 6 years our honey export is highly reduced due to different reasons like security, climate change etc.



Figure 2. Exports structure of Natural honey.

3.3. Domestic Supply for Honey

When we come to domestic supply of honey, it is on decreasing rate from 2010 to 2021. It is related to the production as we mention in the above chart in 2015 the supply was in the pick and it was good for the year 2016-2018. But starting from 2019 to 2021 it is highly reduced which makes the price of honey very expensive. For more information please see the chart below.

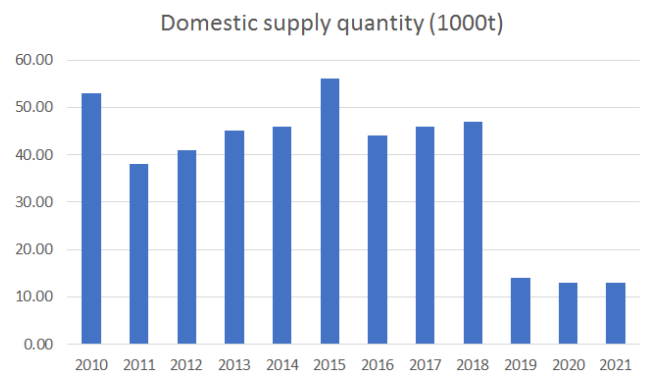


Figure 3. Domestic supply of honey.

3.4. Honey Post-Harvest Loss

Regarding the post-harvest loss of honey, the 2021 data is very high compared to the last 9 years which aggravates the shortage of export and local supply of the product. The government of the county should provide due attention for this postharvest loss of honey and honey products.



Figure 4. Post-harvest loss of honey in Ethiopia.

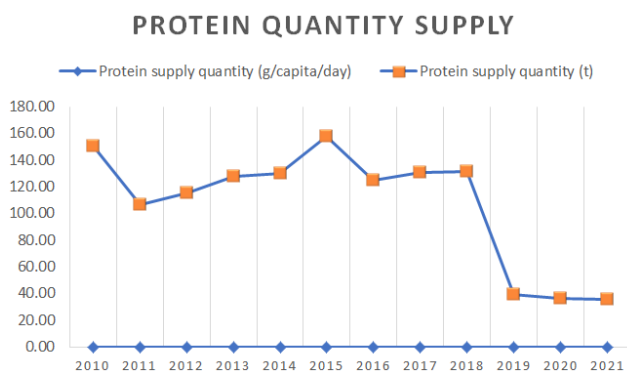


Figure 5. Protein quantity supply.

4. Conclusion and Recommendation

Agriculture plays a key role in the country. Around 12 million small farming households produce 95% of all agricultural goods. However, due to biotic and abiotic reasons, the agricultural product decreases from time to time. Beekeeping, also known as beekeeping, is the management of honey bee colonies to pollinate crops as well as honey and other products. It is an environmentally friendly and non-agricultural business activity of farmers and landless people. Ethiopia has a longer beekeeping tradition than other countries in the world at the time of King Ezana, around the 3rd century AD. The enormous differences in agro-climatic conditions and biodiversity between countries favored the existence of a diverse honey bee flora and a large number of honey bee colonies. The country has about 10 million bee colonies and over 800 identified honey plants. With 6,189,329 beehives, Ethiopia is the fourth largest country in the world, alongside India, China and Turkey.

This study was intended to analyze the trend of honeybee production, export, local supply and contribution of the product for protein supply. From this the major findings were the production, the export, local supply reducing at decreasing rate and post-harvest loss was at the pick in 2021.

From this we recommend that the government of Ethiopia should provide due attention for this sector which is source of foreign currency and important source of protein which prevents malnutrition.

5. Conflicts of Interest

The authors declare no conflicts of interest

6. References

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