Mekelle University

College of Business and Economics

School of Management

Title: Challenges and Opportunities of Honey Market in Tigray: In the Case of Kilte Awlaelo Woreda

Mekelle University, College of Business and Economics, Department of Management in Partial Fulfillment of the Requirements for the Master of Business Administration

By: Yukum G/Michael Desta

Advisor: Dr. Yikaalo Welu

Jan, 2024

Mekelle, Tigray, Ethiopia

Title: Opportunities and Challenges in the Honey Market of Tigray: A Case Study of Kilte Awlaelo Woreda

A Thesis Presented to the Department of Management in Partial Fulfillment of the Requirements for the Master of Business Administration, Mekelle University

By:
Yukum G/Michael Desta

Jan, 2024
Mekelle, Tigray, Ethiopia

Statement of Declaration

I, Yukum G/Michael, hereby affirm that this thesis, titled "Challenges and Opportunities of the Honey Market in Tigray: A Case Study of Kilte Awlaelo Woreda," is my original work. I have conducted this research independently, with the guidance and support of my research advisor, Dr. Yikaalo Welu. All external sources and contributions utilized in this study have been properly acknowledged. Furthermore, this thesis has not been submitted for the award of any other degree, diploma, fellowship, or any similar title at any other university or institution.

Yukum G/Michael Desta

_____

Date & Signature

Statement of Certification

This is to certify that Yukum G/Michael has conducted research on the topic titled "Challenges and Opportunities of the Honey Market in Tigray: A Case Study of Kilte Awlaelo Woreda." The work is original and meets the requirements for submission in partial fulfillment of the Master of Business Administration.

Advisor: Yikalo Weldu (PhD)

Date: _____

MEKELLE UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS DEPARTMENT OF MANAGEMENT

CHALLENGES AND OPPORTUNITIES OF HONEY MARKET IN TIGRAY: IN THE CASE OF KILTE AWLAELO WOREDA

BOARD OF EXAMINERS

Name Signature

1. _____ _____

2. _____ _____

3. _____ _____

Advisor

Name	**Signature**
Dr. Yikalo Weldu (Assistant Professor)	

Acknowledgement

I would like to express my heartfelt gratitude to my advisor, Dr. Yikalo Weldu, for his exceptional guidance, support, and encouragement throughout the course of this research. His expertise and insights have been crucial in shaping this study. I also wish to thank Dr. Abrha Kiros for his valuable review and constructive feedback on my thesis. His input has greatly improved the quality of this work. I am deeply appreciative of the beekeepers, honey merchants, and local experts in Kilte Awlaelo Woreda who participated in this study and shared valuable information. Their cooperation and willingness to contribute made this research possible. A special thanks goes to my family and friends for their constant support and understanding throughout this journey. Their encouragement has been a great source of strength and motivation. Finally, I would like to extend my thanks to Mekelle University, College of Business and Economics, Department of Management, for providing the opportunity and resources necessary for conducting this research.

LIST of ABBREVIATIONS and ACRONYMS

USA = United States of America

EU = European Union

CSA = Central Statistical Authority

LWAO = Kilte Awlaelo Woreda Economic Sector Office

UNDP = United Nations Development Program

GNP = Gross National Product

ORDA = Office of Rehabilitation and Development in Tigray Region

SNNPR = Southern Nations, Nationalities, and Peoples' Region

MOA = Ministry of Agriculture

ILRI = International Livestock Research Institute

NGOs = Non-Governmental Organizations

MOARD = Ministry of Agriculture and Rural Development

FTC = Farmers Training Center

D/n = Dakon

FCA = Federal Cooperative Agency

E.C. = Ethiopian Calendar

LWCOO = Kilte Awlaelo Woreda Cooperative Office

TBOANR = Tigray Bureau of Agriculture and Natural Resources

Abstract

The honey market in Kilte Awlaelo Woreda, Tigray, presents both significant challenges and promising opportunities for local beekeepers. This study assesses the current status of the market, identifies key barriers to its development, and explores potential avenues for growth. Employing a mixed-methods approach—including surveys, interviews, focus group discussions, and field observations—the research highlights major constraints such as a shortage of skilled labor, poor post-harvest management, inadequate extension services, and market-related issues like price instability and limited access to profitable markets. These factors hinder the productivity and economic viability of the honey sector in the region. Despite these obstacles, the study identifies substantial opportunities for market expansion. Growing demand for honey, the region's rich biodiversity, and potential for international trade create a strong foundation for industry growth. If properly harnessed, these opportunities can transform the honey market into a more efficient and profitable sector. To address the existing challenges and maximize market potential, the study recommends targeted interventions, including capacity-building initiatives, improved infrastructure, enhanced market linkages, and stronger collaboration between stakeholders. Additionally, it emphasizes the need for further research to develop sustainable strategies that will support the long-term growth of the honey industry in Kilte Awlaelo Woreda and contribute to the broader economic development of Tigray

Keywords: Honey marketing challenges, honey production, Kilte Awlaelo Woreda, opportunities, skilled labor, Tigray region

.

Table of Contents

List of Figures

List of Tables

Chapter One: Introduction

1.1. Backgrounds and justifications

Honey has been a highly valued sweetener since the beginning of human civilization. In ancient times, it was the sole source of sugar, and it continues to be a popular and nutritious sweetener today (Paterson, cited by Elias, 2008). Beekeeping is a vital agricultural activity in Tigray, Ethiopia, particularly in Kilte Awlaelo Woreda, where many households rely on honey production for their livelihoods and economic stability. However, the honey market in this region faces numerous challenges and opportunities that impact its growth and sustainability (FAO,2020)

Currently, the global honey market and production are influenced by various factors, such as weather changes, global financial stress, debt challenges, and issues related to imports and exports (RON Phipps, 2012). For instance, in the United States, honey production has decreased, while prices have risen significantly, and domestic sales dropped by 7% in 2011 compared to 2010 levels (RON, 2012).

In less-developed countries, globalization has created challenges for honey producers, affecting their competitiveness and quality standards. Many producers struggle to meet the higher quality expectations set by both domestic and international markets (YONAD, 2011). Thus, improving the competitiveness of honey producers is essential for enabling them to participate in different market levels, secure fair margins, and improve their livelihoods sustainably.

Beekeeping in Ethiopia has a long history, dating back centuries. Ancient Egyptian records mention Abyssinia (modern-day Ethiopia) as a source of honey and beeswax, dating back over 5,000 years (Gezhegne, cited by Tessege, 2009). This indicates that beekeeping was a significant part of the Abyssinian economy long before other goods became exportable.

Ethiopia is rich in diverse plant habitats, climates, altitudes, and rainfall patterns, all contributing to a variety of honey plants across the country. A 2007 survey by the H.B.R.C.

revealed that honey plants in the highlands of Ethiopia include clover, Kosso, Meskel Getem, Nuge, Rapeseed, coffee Arabica, and various other species, while in the lowlands, plants like prosopis, acacia, and Euphorbia dominate. Additionally, there is a wide range of cultivated crops that provide nectar and pollen for bees.

With approximately 1.9 million households engaged in beekeeping and 10 million bee colonies, Ethiopia ranks first in Africa for bee colonies, 10th in honey production, and 4th in beeswax production globally. However, the honey industry in Ethiopia has not yet reached a developed stage, and the market structure does not fully benefit the actors involved. Beekeepers lack knowledge in business practices for increasing productivity and producing quality honey and beeswax. Moreover, the marketing system often works against them (PILB, 2011).

In Ethiopia, only 10% of honey production is consumed by producers, while the remaining 90% is sold on the local market. Of this, 70% is bought by local brewers at lower prices. Despite these challenges, demand for Ethiopian honey is growing in the EU, USA, and Middle East, presenting significant opportunities in global markets (Poulos, 2011).

1.2. Statement of the problem

Despite honey's economic and nutritional importance, the honey market in Ethiopia faces several challenges, including a shortage of skilled personnel, inadequate training institutions, poor post-harvest management, weak extension services, lack of coordination between research and extension services, and insufficient market data (Ayalew, 2001; Edessa, 2002). Additionally, there is a lack of necessary equipment for beekeeping and marketing, insufficient research, poor coordination among stakeholders, and inadequate infrastructure. As a result, most of the honey produced is either consumed locally or sold to breweries.

The honey market in Ethiopia is also hindered by issues such as a lack of manpower, appropriate beekeeping and marketing equipment, and the absence of a research-based approach to address these challenges. Without proper coordination and collaboration among

stakeholders, the honey industry remains underdeveloped, limiting the potential for wider market access (PILB, 2011).

In Tigray, honey is an essential product for local consumption and trade. The Tigray Bureau of Agriculture and Natural Resources reported an average annual production of 58,000 quintals of honey (TBOANR, 2020). Other estimates suggest that Tigray produces 4,739 tons of honey annually from 332,391 honey bee colonies (CSA, 2021). Honey from Tigray is in high demand internationally, with exports to countries including Norway, Sudan, Germany, the UK, France, Somalia, and many others (MoTI, 2019/20).

However, due to the ongoing conflict in Tigray, over 85% of the honey production has been destroyed, severely affecting the financial and morale capacity of producers. Despite the region's high potential for honey production and export, significant market gaps remain, preventing producers from fully accessing global markets.

This research aims to explore the challenges facing the honey market in Ethiopia and identify opportunities to increase honey production and enhance local and global market activities. By bridging these gaps through research, there is great potential for improving the honey industry and ensuring sustainable growth for producers.

1.3. Research Questions

- What is the current status of the honey market in Kilte Awlaelo Woreda, Tigray?
- What are the major challenges hindering the development of the honey business in Kilte Awlaelo Woreda?
- What market opportunities are available for honey producers in the region?

1.3.1. General objective

The main objective of this study is to assess the challenges and opportunities of the honey market in Kilteawulaelo Woreda, Tigray.

1.3.2. Specific objectives

- To analyze the current status of the honey market in Kilte Awlaelo Woreda, Tigray.
- To identify the major challenges that hinder the development of the honey business in Kilte Awlaelo Woreda.
- To evaluate the market opportunities available for producers in the region honey.

1.4. Significance of the Study

The varied socio-economic conditions across different geographical areas of the country necessitate tailored strategies to overcome challenges and capitalize on available opportunities specific to each region. This study aims to offer a comprehensive understanding of the honey market in the target area by identifying its current status, major challenges, and untapped potential. This information is valuable for several reasons:

The research will help beekeepers address market-related constraints and enhance their market opportunities. It will also serve as a foundation for future research. Additionally, the study contributes to the development of the honey business, which can create job opportunities within the community. Furthermore, it will provide baseline data for the target Woreda and the broader region, raising awareness about the importance of the honey market.

1.5 Scope of the Study

This study was conducted in three Tabias of Kilteawulaelo Woreda.

1.6 Limitations of the Study

Several challenges were encountered during the data collection process. These included a lack of sufficient funds to cover the data collectors' fees, limited transportation access to remote study areas, and the unavailability of some beekeepers according to the data collection schedule. These issues led to inefficiencies in the researcher's time, as they had to make multiple trips to gather the necessary data.

Chapter Two: Literature Review

2..1 Concept and Definition of Terms

- **Market**: The concept of a market includes both current and potential buyers and sellers. A market is a process where goods and services are exchanged between sellers and buyers, encompassing the location, transactions, and the participants involved (Kotler & Armstrong, cited in Ayalew, 2009).
- **Marketing**: Marketing involves the actions of a business in facilitating the movement of goods and services from producers to the final consumer (Bain & Howells, cited in Mohamed, 2009). Marketing information systems interact within the structure of people, equipment, and analysis based on the market flow and information (ibid).
- **Market Surplus**: Market surplus refers to the amount of a product that remains after meeting the consumption and utilization needs of the producer. It indicates the quantity available for sale in the market (Thakur, 2009, cited by Teweld, 2010).
- **International Marketing**: This refers to the marketing activities involved in promoting products and services across national borders (Kotler, 2004). It includes consideration of environmental factors such as laws, cultural differences, and customer preferences, which vary from country to country (Kotler, 2008).
- **Agricultural Marketing**: Agricultural marketing encompasses the business activities involved in the flow of agricultural products and services from production to the final consumer (Kohl & Uhl, cited in Simon, 2009).
- **Marketing System**: A marketing system includes the distribution of inputs and outputs, focusing on the smooth flow of production and distribution in the market. It involves stable structures like production, distribution, and consumption that support the economic process (Branson & Norvel, cited in Ayalew, 2009).
- **Channel of Distribution**: A channel of distribution is the pathway through which a product moves from the producer to the ultimate consumer or industrial users. It involves the transfer of legal title to the product, which may occur multiple times depending on the market situation (Gray, cited in Allelgn, 2011).

- **Marketing Efficiency**: Marketing efficiency measures market performance, indicating whether the goals of producers, such as farmers, are being achieved. Higher efficiency suggests better performance, while lower efficiency signals poor market performance (Ibid).

2..2. Marketing Function in an Organization

Marketing includes assessing, analyzing, and identifying market opportunities, targeting the right markets, developing strategies, and planning and controlling the market objectives. It is an ongoing process that requires coordination across all levels of an organization to satisfy and retain customers in the long term (Prof. Gurney, cited by Berhane, 2012).

The ultimate goal of marketing is to maximize the output of a firm's resources, whether goods or services, by ensuring that every practical area of a commercial organization contributes toward achieving marketing objectives (Homberg, cited by Berhane, 2012).

Marketing Mix

- **Product**: This variable focuses on identifying and meeting consumer needs by offering products that meet desired criteria.
- **Place/Distribution**: This variable ensures that products and services are available in the right quantities and quality for customers, with minimal costs related to inventory, transportation, and storage.
- **Promotion**: This variable involves activities designed to inform target audiences about the organization and its products.
- **Price**: This variable relates to setting a pricing strategy that aligns with the product's market value and target consumer base.
- **People**: The involvement of people in distribution, sales, and services plays a critical role in delivering effective marketing (Muluneh, 2010).

2..3. **Market Channels**

A market channel refers to a business structure consisting of interconnected firms, illustrating the flow of goods from the production site to the final consumer, with the aim of delivering products to their consumption destination. The length of this process can vary, depending on the type and quality of the product being marketed (Gray, 2004). There are two primary types of marketing channels through which farmers sell their products: independent and cooperative (Barker, cited by Tewelde, 2010).

2..4. Farmer's Choice of Marketing Channels

Farmers, regardless of whether they are production- or market-oriented, need to use marketing channels to sell the surplus of their products or services. For some, this is a routine matter, selling through the same outlets year after year. However, producers often have to choose from various marketing channels to sell their products, with market-oriented farmers looking for opportunities to maximize profits. These farmers are typically willing to spend time considering different marketing channels and make decisions based on sound economic motives (Barker, cited by Tewelde, 2010).

Individual Channels Used by Producers

Farmers operating individually often have limited influence in the market. Despite their limited bargaining power, individual farmers still manage to sell agricultural products through various independent channels.

Union Channels Used by Producers

Cooperatives provide farmers with a way to overcome their market disadvantages. As individual producers, they may be powerless against larger players, but by joining forces in a cooperative, they can gain a stronger market presence and benefit from economies of scale. Cooperatives pool resources such as land, labor, and knowledge to achieve more collectively than they could individually.

2..5. Marketing Information System

In today's world, information and information systems are essential for accelerating production and distribution. These systems bring together people, equipment, and processes to sort, analyze, educate, and distribute timely, accurate information to marketing decision-makers (Augerous and Cornford, 1998).

2..6. **Honey Production Worldwide**

Global honey production totals 1.3 million tons per year. The top honey producers are Russia, with 193,000 tons, China at 161,000 tons, the USA at 75,000 tons, and Mexico with 67,000 tons annually. Developing countries account for approximately 47% of total global honey production. Ethiopia leads honey production in Africa and ranks 10th globally (H.B.R.C, 2007).

Before the 1970s, Mexico was the leading honey exporter, but China has since taken the lead. Despite being major producers, many African countries have limited honey exports due to quality issues. Developing countries, including Ethiopia, face various marketing constraints such as quality problems, lack of processing facilities, inadequate storage containers, retail selling challenges, and poor transportation networks. Furthermore, honey is often used for beverages rather than being sold as a product on its own, and cultural issues and a lack of awareness about honey's properties also hinder market access (ibid).

Honey prices are influenced by several factors, including supply and demand, delivery speed, storage needs, the product itself, marketing efforts, competition, trade restrictions, and government policies (ibid).

2.6.1. Honey Production and Marketing Problems in Ethiopia

Ethiopia is a leader in honey production and export in Africa and is one of the top five global producers of beeswax, producing between 24,600 and 43,000 tons of honey and exporting 3,000 tons of beeswax annually. However, around 80% of the honey produced is sold locally at lower prices (EEPD, 2006). Despite the country's potential, it faces several marketing

challenges, including a lack of marketing knowledge, insufficient manpower, and inadequate research and extension services (Malamute et al., 2008).

Ethiopia, along with other African countries, has a significant honey production potential, contributing 2.5% to the global honey market (Grim, 1998). However, 80% of its honey is consumed locally (Hartmann, cited by Adami Tulu Agriculture Research Center, 2004). Although Ethiopia's environment is ideal for honey production, challenges such as poor post-harvest management (which reduces honey quality), lack of proper storage, price fluctuations, lack of trained personnel, and inadequate containers persist (Girma, cited by Edessa, 2005).

Beekeeping in Africa offers multiple benefits, including medicinal uses, low start-up costs, and accessibility to all age groups and genders. It requires minimal processing, which increases the value of the final product. Furthermore, beekeeping promotes environmental conservation by encouraging the protection of forests (Brad Beer, 2006).

While beekeeping has the potential to provide sustainable income for African honey producers, it faces numerous marketing constraints, including a lack of infrastructure, organized systems to reach specialized markets (especially in the EU), and difficulties in accessing international markets (Belay, 2006). One potential solution is fair trade labeling or globalization, which could address Africa’s honey market challenges and connect beekeepers with buyers in fair trade markets (Belay, 2006).

2..7. **Competitiveness and Market Linkage Issues**

In Ethiopia, beekeepers face challenges in becoming competitive in the honey market. To be competitive, they need knowledge, hard work, and trust-building among market actors. It requires a proactive approach to positioning their products and businesses effectively in the marketplace. Sales growth is driven not just by location, but by responding to changing consumer demands, market trends, and attractive pricing (ORDA, 2010).

Beekeepers need more than just a competitive edge; they require a solid business plan that is informed by market intelligence, an understanding of consumer needs, and market trends. This involves adapting to new opportunities, responding to changing demands, and using marketing strategies to shape buying behavior. As beekeeper organizations grow, there is an increasing need to refine market connections for long-term success (ORDA, 2010).

Beekeepers also need to understand their position in the market chain. This knowledge helps them identify the best partners, find reliable buyers, and ensure their honey reaches the final consumer effectively (ibid).

Producers anywhere in the world communicate with input suppliers output providers

Purchasers in this manner the relationship seems as follows.

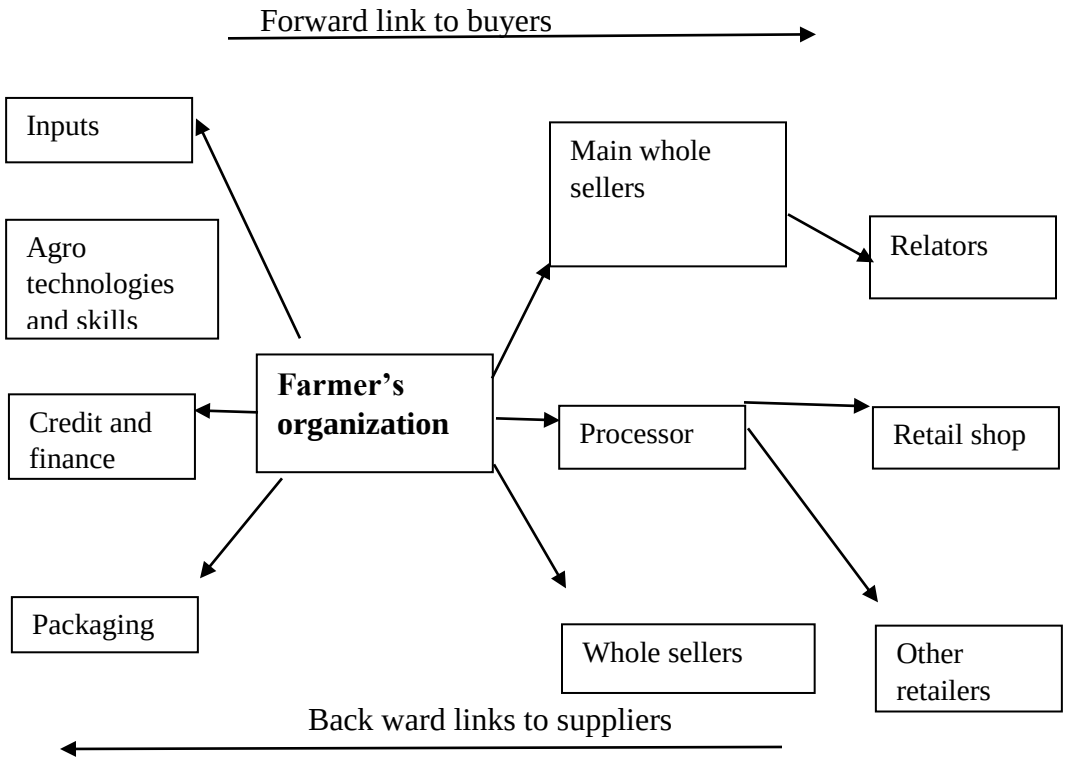

Figure 1: Backward and forward links of farmers' organization

Source (BILB, 2011)

Marketing is more than just flashy advertisements; it serves as a powerful engine for growth. By encouraging businesses to innovate and introduce new ideas, products, and services, marketing drives economic development. This competition not only gives consumers more options but also motivates companies to continually improve. As a result, consumers benefit from greater choice and a thriving economy. Marketing's competitive force leads to lower prices and better products, creating jobs, raising incomes, and improving living standards. Ultimately, marketing plays a crucial role in shaping the future of a nation (William as cited by P.I.L.B., 2011).

2.8. Empirical Study

According to Bezabih (2010), honey and beeswax are the primary products of the beekeeping sector. Global honey production ranges between 997,000 and 1,000,000 tons annually, with Russia and China being the largest producers, accounting for one-third of global output. Developing countries contribute about 500,000 tons of honey, although only a small portion meets export quality standards. While African countries are major honey producers, only 2% of their production is suitable for export due to quality issues. Ethiopia's total honey production is between 21,480 and 23,700 tons per year, with regional contributions as follows: Oromia 41%, SNNPR 22%, Amhara 21%, Tigray 5%, and the remaining regions 11% (SNV/2005).

Despite Ethiopia's production potential, several marketing challenges persist, such as the absence of an organized market, low domestic demand for processed honey, lack of incentives for producing high-quality honey, insufficient market information, poor product quality due to improper harvesting and handling, inadequate infrastructure, lack of financial resources, absence of processing equipment and skills, and poor packaging (Bezabih, 2010).

In the honey marketing system, key actors include beekeepers, beeswax collectors, retailers, Mess brewers, processors, and exporters. However, the value chain lacks organized market channels and formal linkages between actors. Honey producers typically sell their products to

local collectors, who then supply Mess breweries or larger markets (Beyene and David, cited by Tessega, 2009).

The honey processing and export channels involve beekeepers, local collectors, cooperatives, and processing plants. Honey is either directly supplied or partially refined before being processed and packaged for the local or export markets. The beeswax market typically starts with Mess breweries, selling crude or semi-processed beeswax to local collectors, who then transport it to Addis Ababa for further processing and eventual sale in local or export markets (ibid).

Ethiopia has been a major producer of honey and beeswax for centuries. Beekeeping in the Amhara region, for example, provides farmers with a valuable source of income, food, employment, and potential foreign currency earnings (Kerealem et al., 2006). However, challenges remain, such as low prices, poor production quality, inadequate harvesting management, lack of market infrastructure, outdated technology for honey collection, storage, processing, and packaging, limited government support for market development, poor coordination between research and extension services, lack of credit access, and outdated market information. These issues result in honey being sold to local markets in unextracted, unstrained, and poorly managed conditions at low prices (Kerealem et al., 2006).

A Conceptual framework for the honey market, illustrating the flow from **Inputs** through the **Process** to the **Outputs**:

Inputs	**Process**	**Outputs**
Raw Materials	Bee Management	Honey Products
Labor	Honey Production	By-products
Technology	Harvesting	Market Distribution
Capital	Processing	Revenue Generation
Regulations	Packaging	Economic Impact
Environmental	Quality Control	

Descriptions of the Conceptual Framework

Inputs: Represent the essential resources required for honey production, such as raw materials, labor, capital, tools, regulations, and environmental factors.

Process: Involves the actual activities or operations that transform inputs into the final products, including bee management, honey production, harvesting, processing, packaging, and quality control.

Outputs: The final results, which are honey products, by-products, market distribution, revenue, and the overall economic impact of the honey industry.

1. Inputs:

Represent the essential resources required for honey production, such as raw materials, labor, capital, tools, regulations, and environmental factors.

Raw Materials: Bees (bees used for honey production), floral sources (nectar from various flowers).

Labor: Beekeepers, workers for hive management, honey extraction, packaging, etc.

Technology/Tools: Beekeeping equipment (hives, extractors, smokers), quality control tools, packaging machinery.

Capital: Investment required for infrastructure, beekeeping equipment, marketing, and distribution.

Regulations/Standards: Government policies, food safety regulations, certification standards (e.g., organic certification).

Environmental Conditions: Weather, climate, availability of suitable flora for bees to gather nectar from.

2. Process:

Involves the actual activities or operations that transform inputs into the final products, including bee management, honey production, harvesting, processing, packaging, and quality control.

Bee Management: Beekeepers maintain and manage the health and growth of bee colonies.

Honey Production: Bees collect nectar from flowers, which is then transformed into honey within the hive.

Harvesting: Beekeepers collect honey by extracting it from the hives.

Processing: Honey is filtered, pasteurized (if required), and processed to meet quality standards.

Packaging: Processed honey is packaged into various forms (jars, bottles) for sale.

Quality Control: Testing for purity, moisture content, and compliance with industry standards.

3. Outputs:

The final-results, which are honey products, by-products, market distribution, revenue, and the overall economic impact of the honey industry.

Honey Products: Finished honey ready for sale (liquid honey, comb honey, raw honey, flavored honey, etc.).

By-products: Beeswax, propolis, pollen, royal jelly (all of which can also be marketed separately).

Market Distribution: Distribution through various channels such as local markets, supermarkets, online stores, export markets, etc.

Revenue Generation: Income generated through the sale of honey and its by-products.

Economic Impact: Employment creation, local and national economic contribution.

2.9 Variables and their Definitions

(i) **Age of Household Head (HHAGEH):** This refers to the number of years the household head has lived. As individuals age, their physical abilities and strength tend to decline, which may result in a decreased capacity for income generation. Consequently, households with older heads are expected to be less actively involved in honey marketing compared to those with younger heads.

(ii) **Sex of Household Head (Sex):** Male-headed households typically have better access to labor resources than female-headed households. Female-headed households may struggle due to a lack of family labor, which is crucial for certain tasks in honey production and marketing. Additionally, males are often more experienced in farming and marketing, as well as having greater access to technology. Thus, it is hypothesized that female-headed households will be less active in honey marketing than male-headed ones.

(iii) **Level of Education:** This variable refers to the educational background of the household head, encompassing both formal and non-formal education. It is measured by the ability to read and write, as well as enrollment in primary, secondary, or higher education. Educated individuals are more likely to have better access to production technologies and marketing information, which can enhance honey production and marketing activities. It is assumed that higher levels of education lead to increased productivity and better marketing opportunities.

(iv) **Family Size:** This refers to the total number of household members living together, adjusted to adult equivalent terms. It is expected that larger family sizes have a positive

association with honey production and marketing linkages, as more family members can contribute to production and marketing efforts.

(v) **Distance from Market Center:** Proximity to a market center provides opportunities for increased income through access to non-farm employment and transportation. It is hypothesized that households located closer to market centers are better positioned to develop stronger market linkages compared to those further away.

(vi) **Access to Credit (Credit Acc):** Credit is a crucial source of investment. Households with access to credit can more easily invest in honey production and marketing, improving their income. Access to credit helps farmers overcome financial barriers and purchase necessary inputs for honey production. Therefore, it is hypothesized that access to credit enhances the likelihood of establishing sustainable market linkages.

(vii) **Access to Various Services (Service Access):** Proximity to services such as education, roads, extension services, storage facilities, and communication infrastructure like telephone and banking services can have both direct and indirect impacts on marketing linkages. Households closer to these services are expected to experience fewer constraints and greater success in marketing activities.

Marketing Channel: A marketing channel refers to a network of interdependent organizations that move products from the point of origin to the final consumer. Effective marketing channels positively influence market productivity.

Training: Training involves developing skills or changing attitudes, which can contribute positively to marketing practices by enhancing the effectiveness of individuals involved in the process.

Access to Extension: Extension services involve the transfer of knowledge and skills to individuals or groups to improve their well-being or livelihoods. Access to extension can play a key role in improving marketing practices and production techniques.

Income: Income refers to the money earned by individuals, regions, or countries from work, investments, or business activities.

Price: Price refers to the amount of money required to acquire a product during the marketing process.

Chapter three: Materials and methods

3.1. Descriptions of the Study Area

3.1.1. Geographical Location of the Study Area

The study area includes the Tabias of Tahtay Adeksanded, Laelay Adeksanded, and Genfel, all located within Kilteawulaelo woreda. Tahtay Adeksanded is situated 5 km from Wukro town, Laelay Adeksanded is 7 km away, and Genfel is also 5 km from Wukro town. The geographic coordinates of the study area are as follows: Tahtay Adeksanded is located at 13°49'34.32"N latitude and 39°37'20.28"E longitude; Laelay Adeksanded at 13°48'18.36"N latitude and 39°36'50.04"E longitude; and Genfel at 13°46'20.56"N latitude and 39°37'3.36"E longitude. All three study areas are situated north of Mekelle, with the following distances from Mekelle: Genfel Tabia is 50 km away, Tahtay Adeksanded is 57 km away, and Laelay Adeksanded is 57 km away. The total population of the study areas is 1,864 households in Genfel, 1,657 in Tahtay Adeksanded, and 1,151 in Laelay Adeksanded.

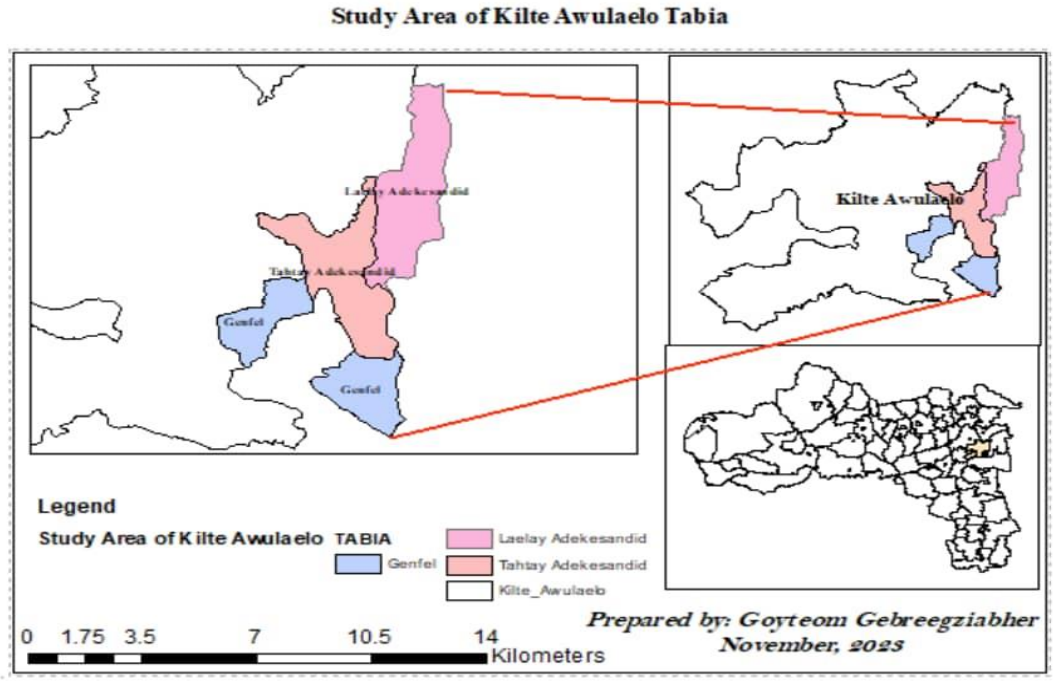

Figure 2: Map of the Study Area

3.2.**Sampling Technique and Research Design**

Research design is essential as it ensures the smooth execution of various research activities, optimizing the process to gather maximum information with minimal effort, time, and resources (Kothari, 1990). For this study, a descriptive research design was chosen as it accurately represents the current state of affairs and is effective for describing quantitative data. Both probability and non-probability sampling methods were used to select a representative sample from the population. Using probability sampling, a total of 552 respondents were chosen and given open-ended questionnaires. Through non-probability sampling, 129 household informants participated in data provision activities. The data collection tools included interviews, focus group discussions, and observations.

3.3.**Research Approach**

This study adopted a mixed research approach, incorporating both qualitative and quantitative methods. This combined approach allows for the benefits of each method, filling the gaps that one might leave. The integration of these approaches enhances triangulation between the methods and instruments, enriching the research findings.

3.4.**Data Sources and Data Collection Instruments**

Both primary and secondary data sources were utilized in this study. Primary data was gathered from honey producers, honey merchants, Mess house owners, and hotel operators. Data was collected using questionnaires, interviews, focus group discussions, and field observations.

3.4.1. **Questionnaire**

The questionnaire consisted of both open-ended and closed-ended questions to gather relevant data. A total of 552 respondents participated in the data collection, including 129 honey producers. The questionnaire was available in both English and Tigrigna to facilitate communication. Using Tigrigna allows respondents to express themselves freely and ensures

efficiency in data collection. The use of questionnaires was intended to reach a large number of people over a wide area. Prior to data collection, six enumerators were trained on how to administer the questionnaires and collect data.

3.4.2. **Interview**

Interviews were conducted with six relevant experts from the woreda economy sector, the woreda cooperative, and three Mess house owners. Interviews were chosen because they allow for face-to-face interaction, offering flexibility and the opportunity to gather additional information as needed.

3.4.3. **Focus Group Discussion**

Focus group discussions were used to explore how people collectively organize and interpret knowledge, why they hold certain views, and to gather a wide range of perspectives. Discussions were conducted with the honey market cooperative committees, honey merchants, and Mess house owners to gather insights from individuals with extensive knowledge of the honey market. This approach helped triangulate the data collected from other sources.

3.4.4. **Observation**

Personal observations were made at one marketplace to verify the data collected from the other instruments and to assess the existing constraints and opportunities in the honey market.

3.5.**Sampling Design**

The validity and reliability of the research depend on the sampling technique used in data collection. Both probability and non-probability sampling techniques were applied to select relevant respondents, including beekeepers, experts, and local businesses such as Mess house owners and honey merchants.

3.5.1. **Target Population**

This study focused on the market issues faced by beekeepers in Kilte Awlaelo's 18 rural Tabias. Three specific Tabias were chosen based on their relevance to market access, communication challenges, honey production, and other factors related to the study. A total of 552 beekeeping households from these Tabias were selected for participation.

3.5.2. **Sample Frame**

The sample frame consisted of lists of households from the three selected Tabias, obtained from local agricultural and administrative offices, Mess houses, and experts from relevant sector offices.

3.5.3. **Sampling Unit**

The sampling unit for this study included individual households in the selected Tabias, Mess house owners, honey cooperative committee members, and sector experts from both government and non-government organizations.

3.5.4. **Sampling Technique**

To select the sample Tabias, non-probability purposive sampling was used. For selecting beekeepers, probability sampling (lottery method) was applied to ensure unbiased selection and equal opportunity for inclusion. This method was appropriate given the similar socioeconomic characteristics of the target population, which made it feasible to represent the entire population. Non-probability sampling was also used to select key informants from government and non-government offices, as well as private organizations within the Kilteawlaelo district (Wukro).

3.5.5 **Sample Size**

Out of the 18 Tabias in Kilte Awlaelo woreda, three Tabias were purposively selected, and 552 beekeepers from these Tabias participated in the data collection. Using the Kothari sampling formula, 129 household respondents were chosen. The households from each Tabia were selected proportionally, and the details are as follows. Since the target population is

fewer than 10,000, the required representative sample size was determined using the proportionate sample size formula:

(If N < 10,000, then n_f = n / (1 + n/N), where n_f is the sample size and N is the target population).

To calculate n, the formula $n = z^2 * p * q / d^2$ was used, where:

- n = the desired sample size
- Z = standard deviate at the required confidence level
- P = proportion of the target population estimated to have a particular characteristic
- q = 1 - p
- d = statistical significance

Since there was no prior estimate of the proportion with a particular characteristic, a value of 50% (p = 0.50 and q = 0.5) was used. Assuming a 93% confidence level, the corresponding Z value is 1.81, and the desired level of significance is 0.07. Therefore, the sample size calculation is:

n=(1.81)2×0.5×0.5(0.07)2=167n = \frac{(1.81)^2 \times 0.5 \times 0.5}{(0.07)^2} = 167n=(0.07)2(1.81)2×0.5×0.5=167

Next, the sample size was adjusted for the population size using the formula:

nf=1671+167552=129n_f = \frac{167}{1 + \frac{167}{552}} = 129nf=1+552167167=129

Thus, the final sample size for the study was 129 households. Including the 3 focus group members and 9 interviewees, the total number of respondents in the study was 138. To support the data collection process, one supervisor and six enumerators were selected, and they were given training to facilitate the research.

Table 1: Proportional Sample sizes of each Tabias

No	Name of Tabia	Total beekeepers in each Tabias	Sample size	% of each kebeles
1	Tahtay Adeksanded	185	185*128/552=43	**33.3**
2	Laelay Adeksanded	175	175*128/552=41	**31.7**
3	Genfel	192	192*128/552=45	**34.8**
Total		**552**	**129**	**100**

Source: researcher's survey 2024.

- Table 1 provides the proportional sample sizes for three Tabias (Tahtay Adeksanded, Laelay Adeksanded, and Genfel) based on the total number of beekeepers in each Tabia and the overall sample size of 129 respondents. The total sample size of 129 respondents is distributed across the three Tabias in a way that is proportional to their populations of beekeepers. The sample sizes for each Tabia (43, 41, and 45) align with the relative populations, ensuring that each Tabia is represented in the study according to its size in the overall population of beekeepers in Kilte Awlaelo woreda.

Given this distribution sampling, Tahtay Adeksanded has the smallest proportion of beekeepers among the three Tabias (185 beekeepers), but it still contributes 33.3% to the overall sample size (43 respondents). This indicates that, although it has fewer beekeepers, its proportionate share of the total sample size remains significant. Laelay Adeksanded has a moderate number of beekeepers (175), contributing 31.7% of the sample (41 respondents), which is a balanced representation in proportion to its population size. Genfel has the highest number of beekeepers (192), and its proportionate share of the sample is also the largest (34.8%, with 45 respondents).

In conclusion, the proportional sample size method ensures that the study accurately reflects the distribution of beekeepers across the three selected Tabias. The calculations provide a fair representation of each Tabia's population of beekeepers in the final sample, which is essential for the reliability and generalizability of the study's findings.

3.6. Types and Source of Data

3.6.1. Primary data source

The primary data that was gathered from honey producers used questionnaires directed at beekeepers, Mess house owners, honey merchants, and relevant sector experts through interviews. Additionally, focus group discussions was conducted with honey market cooperatives, honey merchants, and Mess house owners.

3.6.Data Analysis and Interpretation

To minimize errors during the questionnaire completion, interviews, and focus group discussions, the data reviewed, edited, coded, and tabulated to simplify the analysis process.

3.7. Data Analysis

Quantitative data was analyzed using tables, figures, and percentages as needed.

3.7.1. Data Interpretation

The primary goal of any research is to generate knowledge and produce new findings. Therefore, data collection is just the beginning, and the final stages of research involve data analysis, interpretation, and presentation. To achieve the main objective of this study, the collected data were analyzed and interpreted. Although the study will primarily focus on quantitative analysis, qualitative methods will also support the interpretation process.

3.7.2. Materials Required

The materials required for this study include a computer, camera, paper, pen, pencil, and structured checklists for site observation. Additionally, questionnaires will be used for interviews and to collect data from respondents.

CHAPTER FOUR: DISCUSSION AND ANALYSIS

4.1 Introduction

This chapter provided a discussion and analysis of the findings from the study on the challenges and opportunities within the honey market in Tigray, focusing specifically on Kilte Awlaelo Woreda. The analysis was based on data collected through questionnaires, interviews, focus group discussions, and observations.

4.2 Demographic Characteristics of Respondents

The demographic characteristics of the respondents were essential for understanding the context of the honey market in the study area. This analysis included factors such as age, gender, education level, and family size of the respondents.

Table 2: Age of Sample Respondents.

	Sample Peasant Associations Code				
Age of respondent	Tahtay Adeksanded	Laelay Adeksanded	Genfe	Total	%
27-36	8	5	8	21	16.28
37-46	12	13	14	39	30.23
47-56	15	14	13	42	32.56
57-66	5	5	5	15	11.63
67-75	3	4	5	12	9.30
Total	43	41	45	129	100

Table 2 shows the age distribution of the sample respondents across three Peasant Associations: Tahtay Adeksanded, Laelay Adeksanded, and Genfel. A total of 129 respondents participated in the survey. From the data, it is clear that the largest group of respondents falls within the **47-56 age range**, making up **32.56%** of the sample, followed closely by the **37-46 age group** at **30.23%**. These two groups together represent more than

60% of the respondents, indicating that middle-aged individuals are the most involved in the honey market activities in this area.

On the other hand, the smallest group is the **67-75 age range**, which includes only **9.30%** of the participants. This suggests that older individuals may have lower participation or involvement in honey production and marketing, potentially due to reduced physical capacity or other socio-economic factors.

Overall, the age distribution reveals that the honey market in this area is predominantly driven by middle-aged individuals, with fewer young and elderly participants.

Table 3: Sex Composition of Respondents with Respect to Beehive Owned

Sex of household heads	Number of honey producers	% Percent
Male headed households	89	68.99
Female head household	40	31.01
Total	129	100

Table 3 illustrates the sex composition of the respondents in relation to beehive ownership. Out of a total of 129 respondents: From the data, it is clear that **male-headed households** constitute the majority at **68.99%**, while **female-headed households** make up **31.01%**. This indicates a significant gender disparity in beehive ownership, with men dominating the honey production sector in this study area. The higher percentage of male-headed households suggests that **women face barriers** to owning and managing beehives, which could stem from factors such as limited access to resources, credit, and land, or societal norms and gender roles that restrict women's participation in agricultural activities.

In conclusion, the data highlights that beekeeping is largely controlled by male household heads, while fewer women are able to own beehives, reflecting a gender imbalance in the sector.

Table 4:Age Category of Respondent's

Age category of Family members	No. Family members	Percent (100%)
Less than 36 years old	21	16.28
Family members 37-46 years old	39	30.23
Family members 47 and above years old	69	53.49
Total family size	129	100

As shown in the table, the majority of the family members of the respondents were aged **47 years and older**, comprising **53.49%** of the total family size. This indicates that a significant portion of the households consists of older family members

Table 5: House Holds Educational Status

No	**House hold educational status**	**Number**	**%**
1	Illiterate	21	16.28
2	Literate	19	14.7
3	Basic education	34	26.36
4	Elementary (1-4)	25	19.38
5	Junior elementary (5-8)	17	13.18
6	Secondary school (9-10)	13	10.10
	Total	129	100

As observed in **Table 5**, the participants exhibited diverse educational backgrounds. The majority of respondents had some form of education, with **45.74%** having literacy to basic education levels, while **16.28%** of the participants were illiterate. In terms of specific education levels, **14.7%** were literate, **19.38%** had elementary education (1-4 grades), **13.18%** had junior elementary education (5-8 grades), and **10.10%** completed secondary school (9-10 grades). This distribution highlights a moderate level of education among the respondents, with a notable portion still lacking formal schooling.

Table 6: The Household Experience Category of Honey Producers

Tabya	**Experience category (years)**							
	<1	**%**	**2-6**	**%**	**Above 6**	**%**	**Total**	**%**
Lealaye adikesended	15	34.88	18	41.86	10	23.26	43	**100**
Tahetay adekesanded	14	34.15	15	36.59	12	29.27	41	**100**
Genfel	17	37.78	13	28.89	15	33.33	45	**100**
Total	46	35.66	46	35.66	37	28.68	129	**100**

In **Table 6**, the distribution of experience levels among honey producers is presented. A majority of the respondents, **71.32%**, had **1 to 6 years** of experience in honey production. Specifically, **35.66%** of the respondents had between 2 to 6 years of experience, and **35.66%** had less than 1 year of experience. The remaining **28.68%** had more than 6 years of experience in honey production.

Among the three Tabias, **Genfel** had the highest proportion of respondents with over 6 years of experience (**33.33%**), while **Laelay Adeksended** had the smallest proportion in this category (**23.26%**).

This distribution suggests that a significant portion of the honey producers are relatively new to the field (with less than 6 years of experience), but there is still a notable group with substantial experience (more than 6 years).

4.3 Honey Production and Marketing Practices

This section discusses the current practices in honey production and marketing in Kilte Awlaelo Woreda. It includes the types of beekeeping methods used, the volume of honey produced, and the marketing channels employed by the beekeepers.

Table 7: Honey Producers Income/year in birr from Honey Sell in Sample Tabya

Tabeya	Minimum	Maximum
Lealaye adikesended	2200	400
Tahetay adekesanded	1500	3500
Genfel	2000	3000
Average	1900	3500

Analysis:

Table 7 presents the income earned by honey producers annually from honey sales across different Tabias. The income ranges show a considerable variation both at the minimum and maximum ends: **Laelay Adeksended** has the highest **maximum income** (4000 Birr), but also a relatively low **minimum income** (2200 Birr) compared to the other Tabias. **Tahtay Adeksended** shows a **minimum income** of 1500 Birr, which is the lowest of all, but the **maximum income** reaches 3500 Birr. **Genfel** has a **minimum income** of 2000 Birr, with a **maximum income** of 3000 Birr, placing it in between the other two Tabias in terms of both minimum and maximum income. The **average income** ranges between **1900 Birr** (minimum) and **3500 Birr** (maximum), highlighting that most honey producers in the sample are earning somewhere between these two values. The variation in income could be due to factors such as the scale of honey production, quality of the product, market access, or other economic activities involved in the household. Overall, honey producers' income from honey sales varies significantly within each Tabia, suggesting that while some producers make higher earnings, many others earn much less. This indicates the presence of income disparities among honey producers within the same regions.

Table 8: Honey price in kg in the study area 2021/2023

No	Sample tabeya	harvesting (high honey supply in the market					Farmer sailing price during ultimate honey decrees in the market					retailers sailing price during ultimately				
Color of honey		White	Yellow	Red	Black	Mixed	White	Yellow	Red	Black	Mixed	white	Yellow	Red	Black	Mixed
1	Lealaye Adikesended	54.42	29.2	37.4	74	33.3	73.84	44.68	50.57	15.15	50.68	87.63	63.78	61.3	21	52.52
2	Tahetay adekesanded	59.47	33.42	35.9	75	30.3	74.84	50.64	49.1	38	48.85	90	66.66	61.3	50	40
3	Genfel	44.82	40	23.3	80	46.7	80.2	69	58	52	54.8	90.78	78.45	58.75	65.5	68.5
Aver ag epr		59.75	42.65	36.3	28	41.1	78.78	59.25	53.2	37.73	54.66	89.9	72.37	60.9	47.55	56

Source: Wereda kilteawlaelo economic enter 2023

Analysis:

As shown in Table 8, the honey market in the study area reflects a wide range of honey colors, including white, yellow, red, black, and mixed varieties. The data suggests that honey producers primarily supply **white honey**, with **yellow** and **red honey** following in demand. The pricing for each type of honey varies significantly across different types and market stages. with rgards to f**armer's selling price, w**hite honey tends to be the most expensive, with the highest price points in all three Tabias. For example, in **Laelay Adeksended**, the price for white honey at the farm level reaches 54.42 Birr per kg, which is higher than other types. Regarding to the r**etailer selling price, r**etailers generally offer a similar pricing pattern, with **white honey** again commanding the highest price, as seen in **Genfel**, where it reaches 80.2 Birr per kg. Thi showed that the price for black honey generally remains lower than other types across all the Tabias, which suggests a lower demand or perceived value for this variety of honey. Whereas, **white** and **yellow honey** are in greater demand in the market,

as both farmer and retailer prices show higher values for these varieties, indicating their popularity among buyers.

4.4 Challenges in the Honey Market

Table 9: Factors Affecting Honey Price in the Study Area

Tabeya	Season of the year %	Color and taste %	Traditional ceremonies %	Remarks
Lealaye adikesended	65	20	15	
Tahetay adekesanded	51	27	22	
Genfel	61	19	20	

Analysis:

Table 9 highlights the main factors influencing honey prices in the study area, with **season of the year** being the most significant factor across all three Tabias. This is consistent with the typical pattern in agricultural markets, where honey prices fluctuate due to changes in supply related to seasonal harvests. **Lealaye Adeksended** reports the highest percentage (65%) for seasonal variation affecting honey prices, indicating that the timing of the honey harvest significantly influences prices in this area. The price tends to drop during peak seasons when honey supply is abundant and rises during the off-season when honey supply is limited. **Genfel** and **Tahtay Adeksended** also show a considerable impact of seasonality (61% and • 51%, respectively), suggesting that the seasonality of honey production is a widespread issue across the study area.

The seasonal variation aligns with Ron Phipps' (2012) findings, which note that agricultural product prices tend to decrease during periods of abundant supply (harvest seasons) and increase when supply is limited (off-seasons). With regards to the color and taste o the honey, this factor plays a role in pricing, although it has a lower influence compared to

seasonality. **Tahtay Adeksended** reports the highest influence (27%) of color and taste on honey prices, followed by **Lealaye Adeksended** at 20% and **Genfel** at 19%. Honey color and taste are important considerations for consumers, as they can be linked to quality and preference, which in turn affects the price. in linewith tis, th traditional ceremonies seem to have the least impact on honey prices, but it still plays a role. **Tahtay Adeksended** and **Genfel** report higher percentages (22% and 20%) compared to **Lealaye Adeksended** (15%). Honey may be in higher demand during specific cultural or ceremonial events, affecting prices in those periods.

In conclusion, the main factor affecting honey prices in the study area is the **season of the year**, with significant price drops during the peak harvest season and price increases during the off-season. Although color and taste, as well as traditional ceremonies, influence prices, they are less significant compared to seasonality. This seasonal price fluctuation is consistent with findings from Ron Phipps (2012), highlighting the challenges honey producers face in managing pricing throughout the year.

Table 10: Access to Institutional Supports of the Respondent

Variables	Have access		Haven‘t access	
	Responses	%	responses	%
Road	20	15.50	18	13.95
Travel on foot for Honey market	11	8.53	14	10.85
Extension service	12	9.30	8	6.20
Training service	10	7.75	10	7.75
For production	13	10.10	13	10.10
For honey market	66	51.16	63	48.84

Source: own survey, 2024

Analysis:

- Table 9 highlights the main factors influencing honey prices in the study area, with **season of the year** being the most significant factor across all three Tabias. This is consistent with the typical pattern in agricultural markets, where honey prices fluctuate due to changes in supply related to seasonal harvests. **Lealaye Adeksended** reports the highest percentage (65%) for seasonal variation affecting honey prices, indicating that the timing of the honey harvest significantly influences prices in this area. The price tends to drop during peak seasons when honey supply is abundant and rises during the off-season when honey supply is limited. **Genfel** and **Tahtay Adeksended** also show a considerable impact of seasonality (61% and 51%, respectively), suggesting that the seasonality of honey production is a widespread issue across the study area.
- The seasonal variation aligns with Ron Phipps' (2012) findings, which note that agricultural product prices tend to decrease during periods of abundant supply (harvest seasons) and increase when supply is limited (off-seasons). With regards to the color and taste o the honey, this factor plays a role in pricing, although it has a lower influence compared to seasonality. **Tahtay Adeksended** reports the highest influence (27%) of color and taste on honey prices, followed by **Lealaye Adeksended** at 20% and **Genfel** at 19%. Honey color and taste are important considerations for consumers, as they can be linked to quality and preference, which in turn affects the price. in linewith tis, th traditional ceremonies seem to have the least impact on honey prices, but it still plays a role. **Tahtay Adeksended** and **Genfel** report higher percentages (22% and 20%) compared to **Lealaye Adeksended** (15%). Honey may be in higher demand during specific cultural or ceremonial events, affecting prices in those periods.

In conclusion, the main factor affecting honey prices in the study area is the **season of the year**, with significant price drops during the peak harvest season and price increases during the off-season. Although color and taste, as well as traditional ceremonies, influence prices, they are less significant compared to seasonality. This seasonal price fluctuation is consistent with findings from Ron Phipps (2012), highlighting the challenges honey producers face in managing pricing throughout the year.

Table 11 comparisons between behalves in different production years

			2013			2014			2015		
Sample of tebea		Sample of Resp.	Traditional	Transition	Modern	Traditional	Transition	Modern	Traditional	Transitional	Modern
1	Lealaye adikesended	43	89	15	90	15	35	231	40	25	267
2	Tahetay adekesanded	41	110	45	95	90	30	55	30	40	60
3	Genfel	45	120	52	75	100	60	32	85	45	62
	Total	**129**	**319**	**112**	**260**	**205**	**125**	**318**	**155**	**110**	**389**

able 11 presents a comparison of the types of beekeeping (traditional, transitional, and modern) across three years (2013, 2014, and 2015) for different sample tabias: Lealaye Adikesended, Tahetay Adekesanded, and Genfel.

1. **Overall Trends in Beekeeping Types (2013-2015):**
   - **Traditional Beekeeping:** There is a noticeable decline in the number of respondents practicing traditional beekeeping over the three years. In 2013, 319 respondents were engaged in traditional beekeeping, which sharply drops to 125 in 2014 and further to 155 in 2015. This decline suggests a move away from traditional methods, possibly due to factors such as reduced efficiency, lower yields, or market preferences for more modern techniques.
   - **Transitional Beekeeping:** The number of respondents using transitional beekeeping methods fluctuates, showing some growth from 112 in 2013 to 205 in 2014, and then a decrease to 125 in 2015. This fluctuation indicates that transitional

methods (which blend traditional and modern techniques) might be more adaptable or seen as an intermediate step toward modern practices.

- **Modern Beekeeping:** There is a clear and consistent increase in the use of modern beekeeping methods over the years. In 2013, there were only 112 respondents using modern methods, but this number rises to 260 in 2014 and further increases to 389 in 2015. The rise in modern beekeeping is likely due to improvements in production techniques, higher honey yields, and better quality, making it more attractive to beekeepers.

2. **Beekeeping by Tabias:**
   - **Lealaye Adikesended:** Traditional beekeeping declines from 89 in 2013 to 40 in 2015, while modern beekeeping rises from 35 in 2013 to 231 in 2015. This suggests that beekeepers in this tabia are increasingly adopting modern techniques.
   - **Tahetay Adekesanded:** Traditional beekeeping fluctuates from 110 in 2013 to 60 in 2015, while modern beekeeping grows steadily from 45 in 2013 to 95 in 2015. There is a shift towards more modern practices, although not as dramatic as in Lealaye Adikesended.
   - **Genfel:** Traditional beekeeping drops from 120 in 2013 to 85 in 2015, while modern beekeeping rises from 52 in 2013 to 62 in 2015. The decline in traditional methods and the slight increase in modern practices here indicates an ongoing shift toward modern beekeeping, but the adoption rate is not as high as in other tabias.
3. **Key Insights:**
   - **Declining Traditional Beekeeping:** The trend of declining traditional beekeeping across all years suggests that beekeepers are increasingly recognizing the limitations of traditional methods and are moving toward more productive and efficient techniques.
   - **Growth in Modern Beekeeping:** The rise in modern beekeeping methods across all tabias indicates a broader trend toward adopting advanced practices. This could be driven by improvements in beekeeping technology, access to training, and better market opportunities for higher-quality honey.

- **Transition to Modern Practices:** The transitional beekeeping category serves as a bridge for many producers, reflecting an ongoing shift from traditional to modern practices. However, the decline in transitional methods in 2015 suggests that some beekeepers may have fully transitioned to modern methods by that point.

Conclusion: The data demonstrates a clear trend towards modern beekeeping practices in the study area, with a corresponding decline in traditional methods. This shift likely reflects improvements in the efficiency and profitability of modern beekeeping, leading to increased adoption. The fluctuation in transitional beekeeping suggests that it may serve as a stepping stone for many producers moving towards fully modern practices.

Table 12: Unemployed use organized in honey production

No	members and activities	2013-2014EC	2015-2016EC	Total
1	Numbers of members	340	583	923
	Male	296	522	818
	Female	4	61	65
2	Number of group	3	27	30

able 12 provides data on the number of members involved in honey production, broken down by gender and year, as well as the number of groups in the honey production sector between 2013-2014 and 2015-2016.

1. Overall Participation:

- **Growth in Membership:** There is a notable increase in the number of members engaged in honey production, from 340 members in 2013-2014 to 583 members in 2015-2016, with a total of 923 members across both years. This growth indicates an

increasing interest in honey production, which may be a result of better awareness, higher honey demand, or improvements in the sector.

- **Gender Disparity:**
    - **Male Membership:** The number of male participants in honey production dominates the sector, increasing from 296 males in 2013-2014 to 522 males in 2015-2016. This growth mirrors the overall increase in membership, with men consistently forming the overwhelming majority of participants.
    - **Female Membership:** The number of female participants is significantly lower. Only 4 women were involved in 2013-2014, which grew to 61 women by 2015-2016. While the number of women in the sector has increased, they still represent a small fraction (around 7% of total membership in 2015-2016) compared to their male counterparts.

2. Number of Groups:

- The total number of honey production groups increased from 3 in 2013-2014 to 27 in 2015-2016, with a total of 30 groups across both years. This increase suggests a growing organizational structure in honey production, likely indicating the emergence of cooperative groups or associations that aim to support producers and enhance production capacity.

3. Key Insights:

- **Male Dominance in Honey Production:** The data shows that men dominate honey production, making up the vast majority of members in the sector. The increase in male participation reflects the sector's reliance on male labor and leadership in the production process.
- **Limited Female Participation:** Female participation is extremely low, with only 65 women involved by 2015-2016. Despite the increase in women's involvement over the years, the gender disparity remains stark. This suggests that women face barriers

to entering or advancing in honey production, such as limited access to resources, training, or cultural factors.

- **Need for Gender Inclusivity:** The low number of female participants highlights the importance of creating initiatives to encourage women to engage more in honey production. This could involve offering targeted training, financial support, and creating platforms that empower women to take on leadership roles in honey production groups.

4. Conclusion:

The data reveals a strong gender imbalance in honey production, with men overwhelmingly dominating the sector. While there has been an increase in the number of female participants, their representation remains minimal. To achieve a more balanced and inclusive honey production sector, there is a clear need for programs that encourage and support women's participation, ensuring gender equity in the industry. This observation aligns with previous studies, such as those by Girma (2005), which highlighted gender disparities in agricultural sectors.

Table 13: The Flow of Gusts to Kilitawelealo and their contribution to honey market.

NO	Years	Number of gests	Remarks
1	2013	90,000	
2	2014	111,000	
3	2015	158,000	
Total		359,000	

As in Table 13 the number of gusts visiting kilteawlaelo has increased significantly from 9000 in 2013 to 158000 in 2015. This rise in truism has a positive impact on the honey market as tourist often purchases local honey this correlation between truism and honey sells is supported by the findings of Poulos (2011). Who highlighted the rule of truism in promoting local products.

Table 14: Number of Service Providers

No	Title	Number	Remarks
1	Hotels	26	
2	Restaurants‘	19	
3	Grocery	31	
4	Bares	8	
5	Food and beverage houses	30	
6	Café (snacks)	30	
7	Supermarkets	25	
8	Total	169	

Source: Kilitawelealo trade and industry office 2013.

Table 14 presents data on the number of service providers in the Kilte Awlaelo region, categorizing them by type of business. The data is focused on the businesses that use or sell honey in some capacity, including hotels, restaurants, grocery stores, bars, food and beverage houses, cafés (snacks), and supermarkets.

1. Total Service Providers:

- The total number of service providers listed in the table is **169**. This includes a variety of businesses that either use or sell honey, reflecting a diverse set of sectors within the local economy that contribute to honey demand.

2. Key Findings by Business Type:

- **Highest Honey Users:**
    - **Grocery Stores (31)**: Grocery stores have the largest number of service providers in the region, with 31 establishments reported. These businesses

likely sell honey as part of their broader inventory of food products, indicating that honey is widely accessible through local grocery channels.

- **Food and Beverage Houses & Cafés (30 each)**: Food and beverage establishments, including cafés and snack bars, are also significant users of honey. These types of businesses often incorporate honey into various menu items, contributing to its demand.

- **Lowest Honey Users:**
  - **Bars (8)**: Bars are the least involved in honey use, with only 8 establishments listed. This could be due to the nature of the business, where alcohol-based beverages are more common than food or drinks that typically require honey as an ingredient.

3. Diversity of Service Providers:

- The data shows a **diversity in service providers** that use honey, ranging from grocery stores to food service establishments. This wide range of businesses supports a substantial demand for honey across different sectors of the economy.
- The high number of grocery stores, food and beverage houses, and cafés using honey suggests that **traditional uses** of honey (in food and beverages) remain dominant in the region. This is in line with the findings of **Melaku et al. (2008)**, who observed that local businesses, including grocery stores and food services, play a significant role in driving honey demand in local markets.

4. Conclusion:

The table illustrates a clear trend where **traditional sectors like grocery stores and food service businesses** (cafés, food and beverage houses) are the major consumers of honey in the region. The **low engagement of bars** indicates that honey is more associated with food and non-alcoholic beverage sectors. The diversity of service providers underscores the **widespread demand for honey**, contributing to its importance as a local commodity in

various businesses. This supports Melaku et al.'s observation that **local businesses are key drivers of honey demand**.

Table 15: Honey merchants and local Drinks (mes house) owners

	Number of house hold	Percent (100%)
Male headed house hold	3	10.34
Female headed house hold	26	89.66

Analysis of Table 15: Honey Merchants and Local Drinks (Mess House) Owners

Table 15 presents data on the gender distribution of households involved in honey commerce, specifically focusing on honey merchants and local drinks (mess house) owners. The table shows the number of male-headed and female-headed households in this sector, along with the percentage distribution.

1. Gender Distribution:

Male-Headed Households (10.34%): The table indicates that a very small percentage of the households (10.34%) involved in honey commerce or owning local drink establishments (mess houses) are male-headed. This suggests that **gender inequality** may exist in the participation of men in this business.

Female-Headed Households (89.66%): The overwhelming majority (89.66%) of households are female-headed. This highlights that **women play a dominant role** in the honey commerce and local drinks sector. Female-headed households are significantly more involved, potentially indicating that women are more likely to engage in these activities, possibly due to socio-cultural factors or economic necessity.

2. Challenges Faced by Beekeepers and Honey Merchants:

The table also connects this gender distribution to some of the broader challenges faced by the honey producers in the region, as outlined in the study. These challenges include:

Lack of Skilled Personnel: The shortage of trained beekeepers and honey production specialists is a key issue. This is particularly relevant in a context where women, who dominate the sector, may not have access to the same training and resources as men. The lack of skilled personnel could limit production efficiency and quality.

Inadequate Post-Harvest Management: Poor management and handling of honey after harvesting can significantly impact the quality and marketability of the product. This challenge is compounded by the lack of expertise, which may be more prevalent in female-headed households due to unequal access to training and support.

Poor Extension Services: The limited support and guidance from agricultural extension services affect both male and female-headed households, but given the high involvement of women in this sector, the insufficient support can disproportionately impact female honey producers. Women may face additional barriers to accessing these services due to social, cultural, or logistical reasons.

Lack of Coordination Among Stakeholders: There is a lack of effective collaboration and coordination among various stakeholders in the honey market. This could result in inefficiencies and missed opportunities for market expansion, which is particularly detrimental to small-scale producers, often women, who may not have the resources to navigate market complexities.

Market Issues: Challenges related to market access, fluctuating prices, and competition in the honey market further exacerbate the situation. These issues are likely more challenging for small-scale, female-headed households that may have fewer resources to buffer against market fluctuations and competition from larger or more established honey producers.

3. Conclusion:

The data in Table 15 reveals a **clear gender disparity** in the involvement of households in the honey and local drinks sector, with a striking 89.66% of the households being female-headed. This suggests that **women play a crucial role** in the honey market, but they face significant challenges, including a lack of training, inadequate post-harvest management practices, and limited support services. These challenges, coupled with market-related difficulties, highlight the need for **greater support** and **capacity-building** initiatives targeting women in the sector. Addressing these issues could improve the productivity, quality, and sustainability of honey production in the region, benefiting not only female-headed households but the honey industry as a whole.

4.5 Opportunities in the Honey Market

Table 16: List of opportunities in the study area

No	List of market opportunities in the study area	Numbers of participants	%
1	Price increment trend	252	45.66
2	Increase meant of tourism and guests	50	9.1
3	Increase of production supply to the market	120	21.74
4	Increment of support GOS & NGO to honey production and marketing	15	2.72
5	Increase of society **honey** purchasing power and habit	115	20.83
6	Improvement of infrastructure	0	0
7	Improvement of extension and training	0	0
8	Others	0	0
9	Total	552	100

Table 16 provides an overview of the market opportunities identified by the participants in the study area. These opportunities are significant for the development of the honey production and marketing sector in the region.

1. Price Increment Trend (45.66%)

The most prominent opportunity, identified by **45.66%** of participants, is the **price increment trend**. This indicates that honey prices are on the rise, which could provide greater financial incentives for honey producers. A rising price trend suggests that there is an increasing demand or market value for honey, which could benefit producers, especially those with higher-quality products. This opportunity offers potential profitability, making it an attractive avenue for expansion in the honey market.

2. Increase in Tourism and Guests (9.1%)

A smaller but still notable **9.1%** of participants identified the **increase in tourism and guests** as an opportunity. As tourism grows, there may be a rise in demand for local products, including honey, in the form of souvenirs or as ingredients for local dishes and beverages. This opportunity highlights the potential for honey producers to tap into the tourism sector, which could increase market access and sales.

3. Increase in Production Supply to the Market (21.74%)

21.74% of participants saw an opportunity in the **increase of production supply to the market**. This suggests that there is potential for honey production to expand in the area, either by increasing the number of beekeepers or improving existing practices to yield more honey. Increased supply could lead to more consistent product availability, which is important for satisfying growing market demand.

4. Increment of Support from Government and NGOs for Honey Production and Marketing (2.72%)

2.72% of participants noted the **increment of support from government and NGOs** as an opportunity. This reflects the importance of external support to develop the honey sector, including financial aid, technical assistance, and market access.

However, the relatively low percentage indicates that many participants may not be fully aware of or benefiting from such support, suggesting a need for better outreach and engagement with stakeholders in the sector.

5. Increase in Society's Honey Purchasing Power and Habit (20.83%)

20.83% of respondents highlighted the **increase in society's honey purchasing power and habit** as an opportunity. This suggests a growing market for honey as consumers develop stronger preferences for honey and better purchasing power. As people's awareness of the benefits of honey increases, demand may rise, providing a more reliable and steady market for producers.

6. Improvement of Infrastructure (0%)

Interestingly, **0%** of participants cited **improvement of infrastructure** as an opportunity. This implies that infrastructure development (such as roads, storage facilities, and transportation systems) is not currently seen as a priority opportunity. It may reflect a lack of awareness about how infrastructure can improve the honey production and marketing process or the belief that infrastructure issues are secondary to other concerns in the industry.

7. Improvement of Extension and Training (0%)

Similarly, **0%** of respondents noted the **improvement of extension and training services** as an opportunity. This could suggest that while extension services may be seen as important, respondents may not view them as immediate opportunities or may not be fully aware of available programs. Alternatively, it may indicate that producers feel their needs for training and support are being adequately addressed, or that other market factors are seen as more pressing.

8. Others (0%)

The category **Others (0%)** shows no participants identified additional opportunities beyond those listed. This suggests that respondents are primarily focused on the opportunities explicitly mentioned in the survey.

Conclusion:

From the analysis of Table 16, several key trends and insights emerge:

Price Increment Trend is the dominant opportunity, signaling growing market potential for honey producers. This trend should be capitalized on for the growth of the industry.

The **increase in tourism** and **society's purchasing power** are also important opportunities, albeit smaller in scale. As tourism and consumer demand for honey increase, producers could benefit from diversifying their market channels.

There is a notable opportunity for **increasing production supply**, which could further boost market growth.

Government and NGO support remains a critical opportunity, though there is relatively low awareness or recognition of this support in the community.

The **lack of awareness about infrastructure and extension improvements** (with 0% response) may indicate a gap in communication or a limited perception of how these factors can positively impact the honey market.

In summary, while several opportunities are identified, the **price trend and increased production capacity** stand out as the most significant drivers for the honey sector. Strategic actions could be taken to strengthen these opportunities and address the gaps in infrastructure and support systems for a more sustainable and profitable honey market.

4.6 Strategies for Enhancing the Honey Market

Based on the study's findings, several strategies are proposed to improve the honey market in Kilte Awlaelo Woreda:

Training and Capacity Building: Offering training to beekeepers on modern beekeeping techniques and effective post-harvest management.

Strengthening Extension Services: Enhancing the support provided by agricultural extension services to better assist beekeepers.

Improving Market Access: Building stronger market linkages and improving infrastructure to ease the honey sales process.

Fostering Collaboration: Promoting greater coordination and collaboration among key stakeholders in the honey market.

4.7 Conclusion

The analysis and discussion emphasize the key challenges and opportunities in the honey market of Kilte Awlaelo Woreda. Tackling the identified challenges and capitalizing on available opportunities can greatly enhance the livelihoods of beekeepers and contribute to the region's sustainable development.

The study's findings highlight the need for targeted interventions to improve the honey market. By focusing on capacity building, enhancing market access, and fostering collaboration among stakeholders, the honey market in Kilte Awlaelo Woreda can become a more efficient and profitable sector. Such improvements will not only benefit the beekeepers but also contribute to the overall economic growth of the region.

Additionally, the study points to the potential for expanding honey exports, which could bring in valuable foreign exchange and open new markets for Ethiopian honey. The region's

diverse flora offers a unique opportunity to produce high-quality honey that can compete in global markets.

In conclusion, the honey market in Kilte Awlaelo Woreda presents considerable potential for growth. By addressing existing challenges and seizing the available opportunities, the region can position itself as a significant player in the global honey market. Achieving this will require coordinated efforts from all stakeholders, including government agencies, NGOs, and beekeepers. With the right strategies and support, the honey market in Kilte Awlaelo Woreda can achieve sustainable growth and contribute to the community's economic prosperity.

CHAPTER FIVE - CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The honey market in Kilte Awlaelo Woreda, Tigray, plays a crucial role in the local economy, providing livelihood opportunities for beekeepers and contributing to agricultural sustainability. This study aimed to analyze the existing situation of the honey market, evaluate potential opportunities, and identify key challenges affecting its growth. The analysis revealed that while honey production in Kilte Awlaelo Woreda benefits from favorable environmental conditions and traditional beekeeping practices, several factors hinder its full potential. These challenges include limited access to modern beekeeping equipment, inadequate training for producers, market fluctuations, and the impact of pests and diseases on bee colonies. Additionally, poor infrastructure and limited access to competitive markets further constrain the profitability of honey businesses in the region.

Despite these challenges, there are significant opportunities for market expansion. The increasing demand for honey at local and international levels, coupled with the region's rich floral diversity, provides a strong foundation for growth. The involvement of government and non-governmental organizations in supporting beekeeping initiatives also presents potential for market improvement through capacity-building programs and financial support. To enhance the honey market in Kilte Awlaelo Woreda, targeted interventions are needed. These include improving access to modern beekeeping technologies, strengthening market linkages, enhancing quality control measures, and providing continuous training and support to beekeepers. By addressing these issues, the honey industry in Kilte Awlaelo Woreda can achieve sustainable growth, benefiting both local producers and the broader economy of Tigray.

5.2 Recommendations

Based on the findings, the following strategies are proposed to improve the honey market in Kilte Awlaelo Woreda:

1. **Training and Capacity Building:**
    - **Comprehensive Training Programs:** Implement training for beekeepers covering modern techniques, post-harvest management, and quality control. These programs should help beekeepers adopt best practices and enhance their productivity.
    - **Establish Training Centers:** Set up centers where beekeepers can receive practical training, observe successful operations, and exchange knowledge.
2. **Enhancing Extension Services:**
    - **Strengthening Support:** Improve agricultural extension services by ensuring regular and relevant guidance is provided to beekeepers. This includes more frequent visits by extension agents and offering technical assistance.
    - **Increasing Capacity:** Expand the number of trained extension agents and regularly update their skills through professional development programs.
3. **Improving Market Access:**
    - **Developing Market Linkages:** Enhance market access by improving infrastructure such as transportation networks, setting up collection centers, and creating direct market platforms where beekeepers can sell their honey.
    - **Promoting Cooperatives:** Support the establishment of cooperatives to improve collective marketing and bargaining power. This will enable beekeepers to pool resources, access larger markets, and secure better prices.
4. **Promoting Collaboration:**
    - **Encouraging Coordination:** Foster cooperation between government agencies, NGOs, and the private sector to create a coordinated honey market. This can be done through stakeholder meetings, joint projects, and multi-stakeholder platforms.

- **Fostering Partnerships:** Develop partnerships with international buyers to explore export opportunities and ensure that honey meets international quality standards.

5. **Research and Development:**
    - **Investing in R&D:** Invest in research to address technical challenges in honey production and improve productivity. This includes developing new beekeeping technologies, improving hive designs, and researching bee health.
    - **Market Research:** Conduct market studies to identify new trends and opportunities. This information can help beekeepers make informed decisions about production and marketing.
6. **Policy Support:**
    - **Advocating for Supportive Policies:** Advocate for policies that foster the growth of the honey market, such as incentives for beekeepers, protection of bee habitats, and support for sustainable beekeeping.
    - **Ensuring Access to Credit:** Ensure that beekeepers have access to credit and financial services to improve their operations. This could be achieved through microfinance programs, low-interest loans, and savings and credit cooperatives.

By implementing these recommendations, Kilte Awlaelo Woreda's honey market can achieve sustainable growth and contribute to the community's economic well-being. Collaboration among all stakeholders is crucial to realizing the full potential of the honey market and improving the livelihoods of beekeepers.

5.3 Future Research Directions

To further enhance the honey market in Tigray, the following areas are suggested for future research:

1. **Impact of Climate Change:**
    - Investigate how climate change affects honey production and nectar availability.

- Develop adaptive strategies to mitigate the impact of climate variability on beekeeping.

2. **Value Addition and Processing:**
    - Explore opportunities for honey value addition, such as developing honey-based products.
    - Assess the feasibility of processing honey into organic and specialty honey products.
3. **Sustainable Beekeeping Practices:**
    - Research sustainable practices that improve productivity while preserving the environment.
    - Evaluate the effectiveness of different beekeeping methods in boosting honey yield and quality.
4. **Market Dynamics and Consumer Preferences:**
    - Conduct in-depth market analysis to understand consumer preferences and demand trends.
    - Identify new markets and develop strategies to penetrate them.
5. **Socio-Economic Impact:**
    - Examine the socio-economic impact of beekeeping on rural livelihoods and community development.
    - Assess the role of women and youth in beekeeping and explore ways to increase their participation.
6. **Technological Innovations:**
    - Investigate how technological innovations can improve beekeeping practices and honey production.
    - Explore the use of digital platforms for marketing, information dissemination, and training.

By focusing on these areas, future studies can provide valuable insights that will contribute to the sustainable development of the honey market in Tigray. This research will help inform policies

and interventions to support beekeepers and enhance the honey sector's overall productivity and profitability.

Reference

Ayalew, (2001) and Edess, (2002). *Honeybee production and marketing system constraints and opportunities in Burie district of Amhara region Ethiopia*.
Ayalew, (2009). *Determinants of livestock marketing, Afar Ethiopia*.
Bain and Howells cited by Mohamed Sirge, (2009). *Determinants of livestock marketing, Afar Ethiopia*.
Barker, cited by Toweled, (2010). *Cooperative marketing in Tigray, Ethiopia*.
Belay, (2006). *Linking producers to buyers in the fair triad market, India*.
Beyene and David cited by Tessega, (2009). *Honeybee production and marketing systems constraints and opportunities in Burie district, Amhara region, Bahar Dar*.
Bezabih Emana, (2010). *Market Assessment and value chain analysis in Beneshangul-Gumuz, Ethiopia*.
Brader Beer, (2006). *African beekeepers practice, Addis Ababa, Ethiopia*.
Branson and Novel cited by Ayalew, (2009). *Determinants of livestock marketing, Afar Ethiopia*.
Chrisanthi Augerous and Tony Cornford, (1998). *Development of information system, London, Britain*.
CSA, (2003). *Central Statistics Authority census, Addis Ababa, Ethiopia*.
EEPD, (2006). *Challenges and opportunities for market-oriented apiculture development, Adaia-liben district, Ethiopia*.
FAO. (2020). *Beekeeping and honey production in Tigray, Ethiopia: Challenges and opportunities*. Food and Agriculture Organization of the United Nations. Gezahegn, (2001). *Honey constraints in Ethiopia, Addis Ababa, Ethiopia*.
Gezhegne cited by Tessega, (2009). *Abyssinia as the source of honey and beeswax, Ethiopia*.
Gezhegne cited by Tessega, (2009). *Honey constraints in Ethiopia, Addis Ababa, Ethiopia*.
Girma cited by Edessa, (2005). *Honey production and marketing in Ethiopia, Addis Ababa, Ethiopia*.
Gray Armstrong, (2004). *Marketing channels, New Delhi, India*.
Hartmann cited by Adami Tulu Research Center, (2004). *Honey production system in Adami Tulu, Zeway Ethiopia*.
Homberg et al. cited by Berhane, (2012). *Marketing an introductory textbook, London, Britain*.
Islam et al. (2009) cited by Ayalew, (2009). *Performance of grain marketing, Entreat, Ethiopia*.
Juergen Grayling, (2008). *Facilitating EU third country listing for Ethiopia honey, Addis Ababa, Ethiopia*.
Kohl and Uhl cited by Simon Zekarias, (2004). *Farm inputs marketing challenges and opportunities, Tigray, Ethiopia*.
Kothari C.R., (1990). *Research methods and techniques, New Delhi, India*.
Kotler and Armstrong cited by Ayalew, (2009). *Performance of grain marketing in the case of Enderta woreda, Tigray, Ethiopia*.
Kotler, (2004). *Principles of marketing, New Delhi, India*.
Kotler, (2008). *Marketing information system, New Delhi, India*.
Melaku et al., (2008). *Challenges and opportunities for market-oriented agriculture development in Ethiopia, Addis Ababa, Ethiopia*.
MoARD, (2007). *Ministry of Agriculture and Rural Development, Addis Ababa, Ethiopia*.
Muluneh, (2010). *Honey marketing constraints in Ethiopia*.

Nuru cited by Elias Tekele, (2007). *Challenges and opportunities of honey production in the case of Lasta woreda*.
ORDA, (2010). *Honey and other products value chain analysis, Lalibela, Addis Ababa, Ethiopia*.
Paterson cited by Elias Tekge, (2005). *Opportunities and challenges of bee production in Lasta woreda, Amhara region, Ethiopia*.
Philip Kotler cited by Allegn, (2011). *Principles of marketing, India*.
Plan International Lalibela Branch, (2011). *Honey and other products value chain analysis, Addis Ababa, Ethiopia*.
Poulos Desalgne, (2011). *Ethiopia accessing international markets with inclusive business and sector development, Addis Ababa, Ethiopia*.
Robber cited by Berhane, (2012). *Marketing an introductory textbook, London, Britain*.
Ron Phipps, (2012). *International honey market report for the USA producer's association, USA*.
SNV, (2005). *Market assessment and value chain analysis in Benishangul-Gumuz, Ethiopia*.
Thakur et al. cited by Tewelde Gebreyesus, (2012). *Analysis of livestock marketing supply chain, Tigray, Ethiopia*.
TOBANR, (2012). *Annual report on honey production in Tigray, Ethiopia*.
UNDP cited by Oxfam, (2011). *Engaging smallholders in value chains creating new opportunities for beekeepers in Ethiopia, Mecha District, Ethiopia*.
William acted by PILB, (2011). *Competitions in honey marketing in the case of Lasta woreda, Ethiopia*.
Yalew Endawke, (2009). *Principle application of research, Addis Ababa, Ethiopia*.

Appendix -1

Mekelle University

College of Business and Economics

Department of Management

Questionnaire Guides to be filled by Respondents

May name is **Yukum Gebremichael Desta, a student in** Mekelle University College of Business and Economic, School of Management. I am currently collecting data regarding Honey Market Constraints and Opportunities in the Case of Kilte Awlaelo Woreda. This research is for academic purpose only. And I hereby assure that all information obtained through these questionnaires will be used for academic purpose only, and all information gathered will be carefully handled with highest level of confidentiality. Thus, your honest and genuine reflections in this regard will contribute to better understand the present Honey Market situation and challenges encountered in your Woreda. I would greatly appreciate in advance for your help in responding to this study.

Dear respondents, you are kindly requested to give your consent whether to participate or to decline from providing information by indicating √ mark in one of the following 'agree' or 'do not agree' choices.

- I agree to participate ☐
- I do not agree to participate ☐

I thank you very much for your cooperation in advance!

I. Background information

1. Sex: male ☐ female ☐

2. Age: 20-25 ☒ 26-35 ☐ 36-45 ☐ 45 above ☐

3. Level of Educational: Illiterate ☐ Elementary ☐ Diploma ☐Degree ☐

4. Income in ETB: A. < 2000 ☐ B. 2000 to 4000 ☐ C. 4001 to 6000☐ D. >6001 ☐

II. Current status of honey market in the study area

1. Are you currently engaging in the task of beekeeper? A. Yes ☐ B. No ☐
2. 2. If you answer to question (1) is **yes**, for how many years?

   A. <1 year ☐ B. 2-3 years ☐ C. 6-10 years ☐

3. How do you tell your experience about the honey market activities at your Woreda?

A. Excellent ☐ B. very good ☐ C. good ☐ D. poor ☐

4. If your answer to question (3) is poor, could you justify your reason in the space provided below please? specify_____

5. Technical Knowledge about bee keeping and honey marketing

5.1.Have you taken any technical training about beekeeping practices before?

A. Yes ☐ B. No ☐

5.2.If yes, state the type of training provided for you

_____

5.3.Do you think the training was sufficient? A. Yes B. No

5.4.Do you have any Knowledge about Honey marketing and sales? A. Yes B. No

5.5.Do you have any information access about honey market systems? A. Yes B. No

6. Based on your lived experience, what do you think is the largest honey market potential at your woreda?

A. Local direct buyers ☐ B. supermarket ☐ C. global honey market ☐ D. others

(specify please) _____

7. If you answer to question ‘5’ above is ‘global honey market’, which country do you think consumes the most? Please state the name of the country_____

8. If your answer to question (5) is ‘local direct buyers’, what are most buyers consuming the honey market?

   A. Tije consumers ☐ B. food processers ☐ C. personal care and cosmetics ☐

   D. pharmaceutical ☐

   E. others (please specify) _____

9. How do you evaluate the honey market profit?

   A. Excellent ☐ B. Very good ☐ C. Good ☐ D. Poor ☐

10. If your answer to question ‘8’ is poor, state your reasons to this response please?

    (specify)_____

11. In understanding, what do you think is the economic value of honey production in this Woreda?

    A. Serves as a means of job creation ☐

    B. It contributes for industry purpose ☐

    C. Other (specify)_____

III. Haney Marketing development and Marketing Constraints in the study area

1. Where do you think the destination of honey is (from producers to where)? _____

2. Is there any price difference applied for similar honey sales at different market place of the Woreda?

   A. Yes ☐ B. No ☐

3. What is the means of honey transportation systems to transport honey into the market?

   A. Through human labor ☐

B. Through domestic animal labor ☐

C. Through vehicles ☐

D. Others (specify if all exists) _____

4. Do beekeepers get honey market information?

A. Yes ☐ **B.** No ☐

5. If your response to Question # 4 above is 'Yes', where do you think the source of information is? (Please state your response_____

6. Among the following types of honey, which type of honey do you think costs 'highest' in the market?

A. white color ☐ **B**. yellow color ☐ **C.** Red color ☐

D. Black color ☐ **E**. mixed color ☐

7. In your perception, what are the opportunities available at your Woreda for honey market developments?

_____

_____

8. State some of the major challenges of honey market in the system

_____

_____

9. Based on your understanding, what are the possible solutions to ease the honey market at your Woreda? Please feel free to put your recommendation to solve the honey market challenges

Appendex- 2

Interview Guide Questions

May name is **Yukum Gebremichael Desta, a student in** Mekelle University College of Business and Economic, School of Management. I am currently collecting data regarding Honey Market Constraints and Opportunities in the Case of Kilte Awlaelo Woreda.

This research intends to obtain data about the opportunities and challenges of honey market situations at Kilteawulaelo Woreda. This research will definitely be used for academic purpose only. I therefore hereby assure that all information obtained through these interviews will be used for this purpose, and all information gathered will be carefully handled with highest level of confidentiality. Thus, your honest and genuine reflections in this regard will contribute to better understand the present Honey Market situation and challenges encountered in your Woreda. I would greatly appreciate in advance for your help in responding to this study.

I thank you very much for your cooperation in advance!

However, you are kindly asked to give your consent whether to participate or to decline from participating in the process of information provision by putting √ mark in the one of the 'agree' or 'do not agree' choices

- I agree to participate ☐
- I do not agree to participate ☐

I. Background information

1. Sex: male ☐ female ☐

2. Age: 20-25 ☒ 26-35 ☐ 36-45 ☐ 45 above ☐

3. Level of Educational: Illiterate ☐ Elementary ☐ Diploma ☐Degree ☐

4. Income in ETB: A. < 2000 ☐ B. 2000 to 4000 ☐ C. 4001 to 6000☒ D. >6001 ☐

II. Current status of honey market in the study area

1. Are you currently engaging in the task of beekeeper? A. Yes ☐ B. No ☐
2. If you answer to question (1) is **yes**, for how many years?

A. <1 year ☐ B. 2-3 years ☐ C. 6-10 years ☐

3. How do you tell your experience about the honey market activities at your Woreda?

B. Excellent ☐ B. very good ☐ C. good ☐ D. poor ☐

E. Please State why you have said this?

_____

_____

_____

4. Based on your lived experience, what do you think is the largest honey market potential at your woreda?

B. Local direct buyers ☐ B. supermarket ☐ C. global honey market ☐ D. others

(specify please) _____

E…. Please State why you have said this?

_____

_____

_____

5. **Technical Knowledge about bee keeping and honey marketing**

5.1 Do you think the beekeepers have taken any technical training about beekeeping practices before? A. Yes ☐ B. No ☐

6. If yes, what types of training provided_____
7. For how long_____
8. Do you think the training was sufficient _____

5.2 Do you have any Knowledge about Honey marketing and sales? Yes / No

_____

5.3 Do you have any information access about honey market systems? Yes/ NO

How do get the information (Radio/ TV/ Facebook/ Internet??????

6. Which country do you think consumes the most? Please state the name of the country_____
7. In your understanding, what are the most buyers consuming the honey market?

_____

_____

_____

8. How do you evaluate the honey market profit?

_____

_____

_____

9. In your understanding, what do you think is the economic value of honey production in this Woreda?

_____

_____

_____

III. Honey Marketing development and Marketing Constraints in the study area

1. Where do you think the destination of honey (from producers to where)? _____

2. Is there any price difference used for the sale of the similar honey at different market locations of the Woreda?

A. Yes ☐ B. No ☐

Please justify your answer_____

3. What are the means of honey transportation systems to convey into the market?

_____

_____

_____

4. Do beekeepers get honey market information?

B. Yes ☐ **B.** No ☐

Justify_____

_____

_____

Following/ probing questions

_____

5. Among the following types of honey, which type of honey do you think costs the 'highest' in the market?

IV. white color ☐ **B**. yellow color ☐ **C.** Red color ☐

D. Black color ☐ **E**. mixed color ☐

Why?_____

_____

_____

6. In your perception, what are the opportunities available at your Woreda for honey market developments?

_____

_____

_____

7. State some of the major challenges of honey market below

_____

_____

_____

8. Based on your understanding, what are the possible solutions to ease the honey market at your Woreda? Please feel free to put your recommendation to solve the honey market challenges_____

_____

_____