MALAWI HONEY VALUE CHAIN DIAGNOSTIC STUDY

Trade

Investing in rural people

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TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS

BCR	Benefit-Cost Ratio
CBA	Cost-Benefit Analysis
DAHLD	Department of Animal Health and Livestock Development
DoF	Department of Forestry
EPA	Extension Planning Area
FGD / FGDs	Focus Group Discussion(s)
GESI	Gender and Social Inclusion
KII / KIIs	Key Informant Interview(s)
MBS	Malawi Bureau of Standards
MITC	Malawi Investment and Trade Centre
MRA	Malawi Revenue Authority
MT	Metric Tonne(s)
MWK	Malawi Kwacha
NADS	National Apiculture Data System
NAIP	National Agricultural Investment Plan
NAP	National Agricultural Policy
NSO	National Statistical Office
TRADE	Transforming Agriculture through Diversification and Entrepreneurship
VNRMC	Village Natural Resources Management Committee

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

This diagnostic study provides a comprehensive assessment of Malawi's honey value chain, examining production systems, market dynamics, institutional arrangements, financial inclusion, environmental sustainability, and social equity. Conducted between August and November 2025 across six major honey-producing districts, the study engaged 357 beekeeping households (58.7% male-headed, 41.3% female-headed), 94 key informants, and 11 focus group discussions. The findings provide evidence-based insights to guide sector transformation and inform policy, investment, and development interventions.

Policy and Regulatory landscape

Malawi's beekeeping sector operates within a broad but fragmented policy and regulatory environment because the country does not yet have a dedicated national apiculture policy or strategy. Beekeeping is recognised in several national development and sector policies such as the National Agriculture Policy, the National Livestock Policy, the National Agriculture Investment Plan, the Malawi 2063, and the National Export Strategy II. However, these references are often indirect and spread across different sectors, which results in fragmented institutional mandates, limited coordination, and insufficient investment specific to the beekeeping industry. Environmental and forestry frameworks including the National Forest Policy and the Environment Management Act also provide important opportunities to link apiculture with biodiversity conservation, climate resilience, and sustainable livelihoods. Strengthening the sector will require the development of a dedicated national apiculture policy and strategy, improved coordination among agriculture, forestry, trade, and environmental institutions, and increased investment in quality standards, value addition, and inclusive participation of women and youth in the honey value chain.

Production Landscape and Performance

Malawi's honey sector is predominantly smallholder driven, with an estimated 45,879 active beehives producing approximately 301.55 metric tonnes annually, more than double earlier estimates of 120 to 150 metric tonnes. Production is heavily concentrated in the Northern Region, particularly Rumphi and Nkhata Bay districts, which together contribute over half of national output. Productivity varies significantly by region, with the Central Region recording the highest average yield at 11.10 kg per hive, compared to 8.15 kg in the Southern Region and 8.82 kg in the Northern Region. The technology mix remains transitional, with Top-bar hives accounting for 54.74 percent of total stock, traditional hives 35.38 percent, and Langstroth hives 9.88 percent. Statistical analysis indicates that management practices rather than technology alone are the primary determinants of productivity. National hive colonization rates average 72 percent, leaving approximately 12,900 hives uncolonized. Addressing this gap could unlock an additional 105 metric tonnes annually without further capital investment, representing a high-impact, low-cost opportunity for rapid gains.

Market Dynamics and Supply Deficit

Malawi faces a critical honey supply-demand imbalance. Annual domestic demand reaches 609.4 metric tonnes, comprising formal buyer requirements of 316 metric tonnes, informal market channels absorbing 90 metric tonnes, and household consumption of 203.4 metric tonnes. Against current production of 301.55 metric tonnes, the country experiences an annual shortfall of approximately 307.85 metric tonnes. This deficit drives substantial imports despite legal restrictions under the Control of Goods Order of 2025, with cumulative imports exceeding 531,000 kilograms valued at over MWK 1.1 billion between 2016 and 2025, and Tanzania supplying 86 percent of imports in 2025.

Major processors and retailers report fulfillment rates of only 52.9 percent. Malawian honey commands premium wholesale prices of USD 9.61 to 13.73 per kilogram, positioning the country favorably for niche markets. However, this advantage is undermined by inconsistent quality, inadequate certification, and unreliable supply volumes. Export performance remains minimal at only 22 kilograms despite historical capacity that exceeded 23 metric tonnes annually between 2012 and 2015.

Value Chain Structure and Systemic Constraints

This study assessed Malawi's honey value chain across five interconnected nodes. Key findings are summarized below.

i. **Input Supply** is predominantly informal. Only 5.5 percent of beekeepers source inputs from commercial suppliers, while 46 percent fabricate their own equipment and 35 percent rely on NGO or donor support. Local firms, artisans, and government programmes supply hives, protective gear, and basic processing tools, but advanced processing machinery remains largely imported, limiting domestic value addition capacity.
ii. **Production** is dominated by smallholders and cooperatives, who contribute 259 metric tonnes annually, representing 86 percent of national output. Large estates supply 30 metric tonnes as a pollination by-product, while medium commercial producers account for the remaining 12 metric tonnes.
iii. **Aggregation** remains a critical bottleneck. Cooperatives channel 169 metric tonnes into structured supply chains, while estates and commercial producers internally aggregate 42 metric tonnes. The remaining 90 metric tonnes moves through informal traders and direct sales, largely without quality control or price differentiation, undermining incentives for post-harvest investment.

iv. **Processing** is split across three tiers. Formal and industrial processors handle 169 metric tonnes, estates and commercial producers self-process 42 metric tonnes to high traceability standards, and the remaining 90 metric tonnes flows through informal and cottage systems, mostly unlabelled and inconsistent in quality.
v. **Market Channels** reflect the sector's informal character. Formal retail absorbs 36 percent of production, industrial buyers take 15 percent, and semi-formal markets account for 5 percent. Informal domestic and regional trade represents 30 percent, direct estate and commercial sales 14 percent, and formal exports remain negligible at less than 1 percent, constrained by certification and regulatory barriers.

Production Constraints and Barriers

Multiple technical, environmental, and institutional constraints limit productivity and supply reliability. Pest and disease pressure from small hive beetles, wax moths, ants, and chalkbrood affects 74 to 78 percent of producers, representing the most severe biological constraint. Inadequate protective equipment and harvesting tools affect 60 percent of beekeepers, while hive theft impacts 58 to 60 percent of producers. Climate variability disrupts flowering cycles for 38 to 42 percent of producers, deforestation and declining forage availability affect 28 to 35 percent, and pesticide exposure near commercial agriculture affects 15 to 20 percent of producers. The continued use of open fire during harvesting by 27.7 percent of producers threatens forest integrity and represents a significant environmental concern. Financial access remains a fundamental constraint, with 69 percent of beekeepers reporting no access to credit, citing lack of suitable financial products (61.1 percent), high interest rates (16.7 percent), and absence of collateral.

Social Inclusion and Environmental Sustainability

Women account for 34.9 to 43.3 percent of beekeepers but face significant barriers including lack of protective equipment (46.6 percent), time limitations due to care responsibilities (36.8 percent), and restricted access to training (35.1 percent). Asset ownership remains male-dominated, with 33.3 percent of men reporting sole hive ownership compared to 22.4 percent of women. Youth participation is high, ranging from 54.8 to 81.8 percent across districts, yet hive ownership among youth is only 2.3 percent, highlighting systemic barriers to asset accumulation and enterprise development. Persons with disabilities represent 11.8 to 17.8 percent of beekeeping households, with limited evidence of structured inclusive programming to support their effective participation. The sector demonstrates strong environmental awareness, with 74.4 percent of beekeepers participating in vegetation protection and 71.6 percent in tree planting. However, hive location analysis confirms significant forest dependency, with 45 percent of hives in village forests and 28 percent in forest reserves, underscoring that sustainable production requires strengthened forest management and secure resource access.

Institutional and Governance Gaps

Institutional coordination remains fragmented. The transfer of apiculture oversight from the Department of Forestry to the Department of Animal Health and Livestock Development has not translated into effective coordination. The absence of a dedicated National Apiculture Policy, weak enforcement of regulations, limited extension services, and inadequate data systems undermine sector governance. Malawi lacks a reliable national system for estimating honey production, constraining evidence-based policymaking and accountability. Regional benchmarking reveals that Uganda, Tanzania, Zambia, and Ethiopia have established more structured regulatory frameworks supporting sector growth and export competitiveness.

Economic Viability and Strategic Opportunity

Cost-benefit analysis confirms strong economic returns for improved hive technologies. Over a ten-year period, a 50-hive Langstroth system yields a Net Present Value of MWK 35.1 million and a Benefit-Cost Ratio of 2.56, outperforming Top-bar systems which generate a Net Present Value of MWK 15.5 million and a Benefit-Cost Ratio of 1.84. Both systems demonstrate financial viability, though higher upfront investment costs for Langstroth hives constrain adoption, particularly among women and youth. The sector holds substantial untapped potential. Addressing colonization gaps, replicating high-performing regional practices, strengthening quality assurance, and formalizing market linkages could significantly increase production and reduce import dependency.

Recommendations

The following recommendations are proposed to address the systemic constraints identified in this study and unlock the full potential of Malawi's honey value chain.

i. Develop a National Apiculture Policy and Strategy, enact dedicated apiculture legislation, and formally designate a lead institution between DAHLD and the Department of Forestry.
ii. Establish a National Apiculture Coordinating Body and design a National Apiculture Data System to guide evidence-based planning and performance monitoring.
iii. Scale adoption of Top-bar and Langstroth hives with full training and equipment support, investigate constraints limiting Langstroth productivity, and launch a National Queen Rearing and Breeding Program.
iv. Eliminate destructive and fire-based harvesting practices and implement Integrated Pest and Disease Management protocols alongside a pesticide residue monitoring programme.
v. Establish accredited honey testing laboratories across all three regions, distribute refractometers to cooperatives, and invest in processing infrastructure to support value addition from honey by-products.

vi. Map honey reserves and forage availability, conduct spatial planning for apiaries, and integrate critical bee forage zones into district land use plans.
vii. Develop a unified Malawi Honey national brand, formalize producer-buyer contracts, commission a National Consumer and Market Study, and build accessible market information systems.
viii. Design apiculture-specific financing mechanisms including equipment loans, cooperative working capital facilities, matching grants, and weather-indexed insurance products.
ix. Ensure women, youth, and persons with disabilities are active participants through subsidized equipment, start-up hive packages, women-led cooperatives, mentorship, and accessible training.

Conclusion

Malawi's honey sector stands at a pivotal moment. The country possesses favorable ecological conditions, strong domestic demand, active producer organizations, and viable economic returns. Yet systemic constraints, particularly supply deficits, quality weaknesses, financial exclusion, institutional fragmentation, and gender disparities, limit its full potential. With coordinated investment, inclusive policy reform, and strengthened governance, the sector can transition from a fragmented, subsistence-oriented activity into a competitive and inclusive industry that doubles production, reduces import dependence, generates export revenues, strengthens forest conservation, and creates sustainable livelihoods for tens of thousands of rural households.

INTRODUCTION

Agriculture remains the mainstay of Malawi's economy, contributing nearly 22 % to the country's gross domestic product (GDP) and providing livelihoods for most of the population (Government of Malawi, 2025). However, the sector is heavily dominated by staple food crops such as maize and legumes, alongside traditional commercial crops like tobacco and tea. This narrow production base has made Malawi's agriculture highly susceptible to price fluctuations, climate shocks, and land degradation, thereby constraining opportunities for economic diversification and sustainable income growth. Hence, the development of non-traditional, high-value agricultural value chains, such as honey, offers a strategic opportunity to enhance rural livelihoods, improve household resilience, and promote environmentally sustainable economic transformation.

Honey production is emerging as one of Malawi's promising growth industries, with significant potential for both domestic and export markets. The country's favourable climatic conditions, abundant floral diversity, and extensive forest cover provide an ideal environment for beekeeping. Unlike many conventional agricultural value chains, apiculture requires minimal land and capital investment, can be integrated with crop and livestock farming, and is accessible even to resource-constrained households. As such, the honey value chain aligns well with inclusive development objectives, offering economic opportunities for rural youth and women while supporting ecosystem conservation.

Beyond direct income generation, beekeeping provides a range of environmental and socio-economic co-benefits. The practice promotes forest conservation by attaching economic value to standing trees, incentivizing communities to protect natural habitats rather than exploit them unsustainably. Moreover, bees play an essential role in pollination, enhancing crop productivity and biodiversity within farming systems. These interlinkages position apiculture as a nature-based solution capable of simultaneously addressing Malawi's economic, environmental, and social development challenges.

The growing domestic and international demand for natural and organic honey, as well as by-products such as beeswax, propolis, and royal jelly, further underscores the industry's commercial potential. Malawi's honey is known for its purity and unique floral characteristics, offering competitive advantages in regional and global niche markets. With appropriate investment in modern production technologies, quality control systems, and market development, the country could increase both the quantity and quality of honey produced, contributing to import substitution and export diversification. This transformation aligns closely with national strategic frameworks such as the *Malawi 2063 Vision* and the *National Export Strategy II*, both of which emphasize agricultural commercialization, sustainable natural resource management, and value addition.

Despite these opportunities, the honey subsector remains underdeveloped and largely informal. Most beekeepers still rely on traditional hives, which yield low volumes and inconsistent quality honey. The industry also faces systemic challenges, including limited access to modern equipment and finance, inadequate extension and research support, fragmented producer organizations, poor quality assurance mechanisms, and weak market linkages. Collectively, these constraints limit competitiveness and inhibit the realization of the sector's full potential.

This *Diagnostic Study of the Honey Value Chain in Malawi,* therefore, provides a comprehensive analysis of the current state of honey production, processing, and marketing in the country. It identifies the key actors, institutional arrangements, and structural bottlenecks along the value chain, while highlighting viable opportunities for policy reform, investment, and capacity development. The insights generated aim to guide strategic interventions that can unlock the sector's potential and position honey production as a viable driver of inclusive and sustainable economic growth in Malawi.

1.1 Aim of the assignment

The study aims to quantify Malawi's current honey production levels, map the value chain leading to domestic and global markets, and assess demand among key stakeholders such as manufacturers, retailers, and packaging companies. By doing so, it seeks to provide insights to guide private sector and donor investment in improving productivity, quality, financial inclusion, and relationships among market participants.

1.2 Specific Objectives of the Study

i. Estimate the current honey production levels by smallholder farmers and other producers in Malawi,
ii. Map out the various channels through which honey is transported from producers to consumers.
iii. Evaluate the demand for Malawian honey among key stakeholders such as manufacturers, retailers, and packaging companies.
iv. Analyse the distribution of value across different stages of the honey value chain.
v. Estimate the demand for Malawian honey on regional and international markets.
vi. Identify challenges faced by smallholder farmers and opportunities for improving the value chain.

APPROACH AND METHODOLOGY

This diagnostic study adopted a mixed-methods approach, integrating both quantitative and qualitative data to provide a comprehensive analysis of the honey value chain in Malawi. The methodology was designed to ensure rigorous, evidence-based findings that capture production, marketing, institutional, and policy dimensions, while reflecting the perspectives of stakeholders

1.3 Data Collection Methods

1.3.1 Desk Review

The study commenced with an extensive desk review of existing literature, policy documents, and secondary data sources. This review examined previous studies on apiculture in Malawi, regional apiculture reports from neighboring countries including Tanzania, Zambia, Uganda, and Ethiopia, national policy frameworks including the Malawi 2063 development agenda and National Agriculture Policy, regulatory instruments such as honey quality standards and import regulations, trade data from the Malawi Revenue Authority and international databases, and programme reports from development partners and NGOs supporting beekeeping interventions. The desk review provided essential context for understanding the sector's evolution, identified knowledge gaps requiring primary data collection, and established a baseline for benchmarking Malawi's performance against regional standards

1.3.2 Household/Beekeeper Survey

A structured questionnaire was administered to 357 honey-producing households across six major honey-producing districts: Rumphi, Nkhata Bay, Mzimba, Lilongwe, Ntchisi, Salima, and Zomba. The gender distribution of respondents was 41.3% female and 58.7% male.

Households were selected using a combination of proportional sampling from existing beekeeping groups (cooperatives and local producer clubs) and snowball sampling to identify active hive owners. Membership lists were verified with cooperative leaders, district forestry officers, and extension workers to ensure that only households actively managing beehives were included in the survey. Where groups were newly formed or inactive, nearby operational groups were substituted in consultation with local authorities.

The survey collected comprehensive data on:

- **Beekeeping operations:** hive numbers, hive types (traditional, top-bar, Langstroth), colony management practices, honey yields, input costs, labour, sales volumes, and market channels.

- **Socio-economic characteristics:** age, gender dynamics, education level, and household size, to assess differential participation in beekeeping and access to resources.

This approach ensured a representative sample of active beekeepers, maintaining geographical balance and gender inclusion across the study area.

1.3.3 Focus Group Discussions (FGDs)

Complementing the survey, FGDs were conducted with 11 purposively selected beekeeping groups across six districts to capture qualitative insights on production practices, hive management, access to finance and extension services, post-harvest handling, market linkages, and environmental practices. The selection ensured balanced representation of male and female beekeepers, including youth and persons with disabilities. A total of 170 participants (76 males and 94 females, including one person with disability) engaged in discussions that provided rich qualitative data on gender and youth participation, socio-cultural dynamics, barriers, and community-level interventions supporting sustainable beekeeping development. The detailed breakdown of FGD participants is presented in Table 1 below.

Table 1: FGD Participants

District	Cooperative/Association Name	Age Range	Total participants	Males	Females	Disability status
Salima	Chikondi Beekeeping Club	13 -25	26	14	12	
	Kachikumba Beekeeping club		15			
	Katete Beekeeping Club	25-56	12	4	8	
Ntchisi	Thumba honey producers and marketing	30-70	15	5	10	
Mzimba	Zasowa beekeeping group	24-67	15	8	7	
Rumphi	Thazima honey producers & marketing cooperative	24-56	7	4	3	
Nkhatabay	Chituka Beekeepers Association	25-74	39	15	24	1
	Kabunduli beekeeping cooperative	23 -61	9	6	3	
Zomba	Tikondane beekeeping club	30-56	14	5	9	
	Ulumba beekeeping cooperative	28-65	18	7	11	

1.3.4 Key Informant Interviews (KIIs)

- Conducted KIIs with 94 **stakeholders** representing the public and private sectors, including:
  - Ministry of Agriculture extension officers and regulatory officials.
  - Representatives from beekeeping cooperatives and producer groups.

    - Honey processors, aggregators, and exporters.
    - Input suppliers of hives, protective gear, and extraction equipment.
- KIIs focused on understanding institutional arrangements, policy and regulatory gaps, market dynamics, challenges in technology adoption, and strategies for improving the subsector.

1.4 Data Analysis

Data analysis integrated both quantitative and qualitative methods to provide a holistic understanding of the honey value chain. Quantitative data were analyzed using descriptive statistics and modelling, which involved calculating means, frequencies, and percentages to summarize key production and marketing indicators. These included variables such as hive yields (kg of honey per hive), production costs, selling prices, and profit margins across different actors within the value chain. The analysis also compared performance differences among producer groups, and hive types to identify patterns in productivity and profitability.

Qualitative data, obtained from KIIs, FGDs, and stakeholder consultations, were analyzed using thematic coding. This process involved reading through interview transcripts, identifying recurring themes, and organizing responses into meaningful categories. Key themes included institutional and policy bottlenecks, market access constraints, value addition opportunities, quality assurance mechanisms, and gender participation in the value chain. The qualitative findings complemented the quantitative results by providing contextual explanations for observed trends and performance gaps.

This analytical framework allowed for a holistic assessment of the honey value chain, identifying key strengths, constraints, and opportunities for improving efficiency, profitability, and sustainability across all stages.

LITERATURE REVIEW

1.5 Historical Overview of Honey Production in Malawi

Beekeeping is deeply rooted in Malawi's agricultural and cultural traditions, practiced across generations (Munthali, 2011). The country's favorable climate, diverse miombo woodlands, and flowering crops including citrus, mango, and macadamia, support extended nectar flows, allowing multiple annual harvests, primarily from September to January (RLEEP, 2013).

Historically, beekeeping relied on traditional methods using log hives, bark hives, clay pots, and other makeshift containers. While based on indigenous knowledge, these practices often harmed the environment, as harvesting typically required felling trees to access wild hives. By the 1970s, deforestation concerns led the government to ban traditional beekeeping in conservation areas, a move that notably displaced local beekeepers during the expansion of Nyika National Park (Kaiser, 1994).

Initial modernization efforts began before independence. In 1962, the Department of Forestry launched a beeswax export initiative, introducing modern Langstroth hives alongside traditional collection. However, rural logistical challenges, high costs, and low beeswax volumes led to the project's termination in 1969 (RLEEP, 2013).

In the 1980s, the United States Peace Corps revived beekeeping as a rural income-generating activity, collaborating with government and NGOs to provide training and hives. Momentum waned by the decade's end, leaving a support gap. This was partly addressed by the Malawi German Beekeeping Development Project (MGBDP, 1989–1994), which promoted sustainable beekeeping in protected areas. The MGBDP introduced the Malawi Standard Top Bar Hive (adapted from the Kenyan model), trained local artisans, established beekeeping clubs, and formed the Beekeepers Association of Malawi (BAM). A processing facility was built in Mzuzu. However, BAM collapsed in 1998 due to governance issues, leading to the facility's closure and a sectoral slowdown (Munthali, 2011).

Policy recognition grew in the late 1990s and early 2000s. The National Forestry Policy (1996), Forest Act (1997), and revised Forestry Policy (2003) emphasized community-based forest management and Village Forest Areas (VFAs), positioning beekeeping as a conservation-compatible livelihood activity. Development programs like USAID's COMPASS project supported beekeepers with training, hives, and market linkages, integrating apiculture into rural development strategies (Munthali, 2011).

By 2005, Malawi had an estimated 5,000 beekeepers producing 75–80 metric tons (MT) of honey annually. Beekeeper numbers doubled to over 10,000 by 2009, yet production stagnated due to widespread use of low-yield traditional hives (COMPASS, 2006; Munthali, 2011). Output reached roughly 150 MT by 2013, still below domestic demand exceeding 200 MT (RLEEP, 2013). Northern regions, especially near Nyika and Nkhata Bay, dominated production (about 60% of national output), followed by emerging areas like Mulanje and Salima (RLEEP, 2013).

Recent years show renewed growth, with production estimated at 120 MT by 2020 (USAID, 2021). This uptick is fueled by rising urban demand in Blantyre and Lilongwe, alongside export opportunities to South Africa, Eswatini, Japan, and Taiwan. Despite this progress, challenges remain: inconsistent quality, difficulties meeting certification standards, and limited access to affordable modern hives. Ongoing efforts focus on developing low-cost technologies, strengthening cooperatives, and improving extension services. Nevertheless, the sector continues to underperform relative to its potential, hindered by market informality, institutional fragmentation, and capacity gaps, limiting its full contribution to rural development, forest conservation, and export diversification.

1.6 Production Systems and Productivity

Honey production in Malawi operates within a dual system that combines long-standing traditional practices with gradually expanding modern apiculture technologies, reflecting a sector in transition. While most producers remain small-scale and subsistence-oriented, policy reforms and donor-supported interventions are increasingly promoting productivity-enhancing and environmentally sustainable production systems. Progress, however, remains uneven due to low technology uptake, limited capital, and weak extension support.

Traditional hives, typically made from bark, logs, or bamboo, continue to dominate in Malawi due to their affordability and accessibility. Earlier studies associated these hives with low productivity and destructive harvesting practices that damage bee colonies and contribute to deforestation (RLEEP, 2013; Total Transformation Agribusiness, 2003). However, more recent evidence suggests these concerns may be overstated. Research on forest beekeeping indicates that bark-hive construction is a highly selective process using specific tree species and sizes, meaning only a limited number of suitable trees are harvested within a given area, thereby minimizing impacts on forest condition (Lowore, 2021). Honey quality and harvesting outcomes also depend more on beekeeper skills and harvesting practices than on hive type alone.

Similar patterns are observed in Ethiopia, where traditional hives account for over 90 percent of production but yield relatively low outputs of around 5–6 kg per hive annually (Sarka, 2017; Nega & Eshete, 2018). The continued dominance of traditional hive technologies, combined with limited access to improved equipment and training, partly explains Malawi's low national honey productivity despite favourable ecological conditions.

In response, improved hive technologies, particularly Top-bar Hives and Langstroth hives, have been promoted by government and development partners. The Top-bar Hive has gained wider acceptance due to its adaptability to locally available timber, moderate cost, and improved yield performance (RLEEP, 2013). Langstroth hives, although less common, offer the highest productivity potential and are mainly adopted by semi-commercial producers with better access to capital and technical knowledge (USAID, 2021).

Table 2: Hive Productivity by Technology Type

Hive Type	Average Yield per Hive (kg/year)
Traditional (Bark/Log)	3–5
Top-bar Hive	15–40
Langstroth Hive	30–100

Source: RLEEP, 2013; Total Transformation Agribusiness, 2003

Despite the productivity advantages of improved hives shown in Table 2, adoption remains limited. Most beekeepers manage fewer than ten hives, and only 6.4 percent of rural households are engaged in apiculture (TRADE Programme, 2023). Where improved technologies are combined with better management and adequate forage access, productivity outcomes improve substantially. For example, beekeepers in Nkhata Bay recorded average annual harvests of 79 kg from 14 hives, demonstrating the potential for semi-commercial production under supportive conditions (TRADE Programme, 2023).

The shift toward improved hives is also motivated by environmental sustainability considerations. Traditional bark hives contribute to forest degradation, whereas modern hives enable non-destructive harvesting and colony preservation. In Malawi, apiculture is increasingly integrated into community forestry initiatives and village natural resource management areas, linking livelihood diversification with conservation objectives (TRADE Programme, 2023; USAID, 2021). This approach reinforces the role of beekeeping in promoting ecosystem conservation, climate resilience, and biodiversity protection, as similarly observed in Ethiopia and other regional contexts (Sarka, 2017; Zapata-Hernández et al., 2024).

1.7 Honey Value Chain Structure and Actors

The honey value chain in Malawi is an emerging livelihood system with growing relevance for rural income diversification and employment, particularly in the Northern and Central regions where ecological suitability and donor-supported forestry programmes have encouraged sector development. Participation of women and youth is increasing, especially in post-harvest handling, aggregation, and retail activities, indicating gradual progress toward inclusion (USAID, 2021).

The value chain operates through two largely parallel pathways. One consists of independent smallholder beekeepers selling directly into informal markets, while the other is organized around cooperatives and producer associations that support aggregation, basic processing, and access to semi-formal markets. Although cooperative models show stronger coordination and bargaining power, overall value chain integration remains weak, a challenge also observed in Ethiopia's honey sector (Nega & Eshete, 2018; Sarka, 2017).

Smallholder beekeepers remain the backbone of production and primary processing, supplying honey and beeswax to aggregators and processors who handle bulking, filtration, packaging, and branding (RLEEP, 2013; USAID, 2021). The majority of honey is marketed domestically through both informal and formal retail channels, while exports remain minimal due to persistent quality and certification constraints. Supporting actors include extension service providers, financial institutions, quality assurance bodies, and market facilitators; however, access to finance, equipment, and coordinated support services remains limited. Strengthening producer–processor linkages alongside robust quality management systems is therefore critical for effective value chain upgrading.

1.8 Value Addition, Quality Assurance, and Packaging

Malawi's favorable ecological conditions and rising honey production offer significant potential, yet the sector remains constrained by limited value addition, inconsistent quality assurance, and inadequate packaging. These challenges are particularly acute at the post-harvest stage, where weak technical capacity, informal practices, and insufficient institutional support reduce product consistency, market appeal, and overall competitiveness in both domestic and export markets.

Smallholder beekeepers predominantly employ rudimentary extraction methods, such as hand-pressing or the Cold Drip Method (CDM). While CDM is cost-effective and accessible, it is inefficient and susceptible to contamination from prolonged exposure and use of non-food-grade equipment (RLEEP, 2013; USAID, 2021). Advanced technologies, including mechanical presses and centrifugal extractors, are largely limited to established processors like NALI Honey, Mzuzu Coffee, and Eco Products, as equipment costs often exceed USD 3,000 (RLEEP, 2013). Value addition beyond raw honey is minimal, with by-products such as beeswax, propolis, pollen, and royal jelly rarely processed or commercialized despite their potential in cosmetics, pharmaceuticals, and specialty foods—patterns similar to those in Ethiopia (Sarka, 2017; Nega & Eshete, 2018). In Malawi, beeswax recovery and pollination services remain underdeveloped, though occasional support for macadamia farms has been noted (Van Blyderveen, 2022). This heavy reliance on raw honey sales limits income diversification and opportunities for chain upgrading.

Quality assurance constitutes a critical bottleneck throughout the value chain. Traditional harvesting practices, including hive burning, brood comb removal, and non-sterile tools, compromise purity from the source. These issues are exacerbated by post-harvest handling in domestic or open-air settings, which often fails to comply with Malawi Bureau of Standards requirements (e.g., MS21 for hygiene, MS366 for honey specifications, and MS19 for labeling) (RLEEP, 2013; USAID, 2021). Essential parameters like moisture content are seldom measured scientifically—only about 3% of beekeepers use refractometers, with most depending on visual or tactile judgments. Practices such as reheating crystallized honey to improve appearance further degrade quality and shelf life, mirroring challenges observed in Ethiopia that have limited export growth (Nega & Eshete, 2018). Although pre-certification pathways exist to ease compliance, uptake is low due to high costs, limited extension services, and capacity constraints. The scarcity of accredited laboratories for residue and microbial testing further hinders access to demanding markets like the European Union (Sarka, 2017).

Packaging and broader certification gaps compound these issues. Smallholders frequently use recycled plastic containers, raising food safety concerns and diminishing product presentation. Food-grade alternatives, such as PET jars or glass bottles, are often unavailable or unaffordable in rural areas due to import dependency and weak supply networks (Total Transformation Agribusiness, 2003; USAID, 2021). Labeling tends to be substandard, with low-quality materials undermining branding, traceability, and consumer trust. Systemic deficiencies, including absent pesticide monitoring, traceability protocols, and accredited testing, effectively bar Malawi from premium export segments, despite the country's largely chemical-free production and strong positioning potential for organic and fair-trade certification.

1.9 Market Dynamics, Demand, and Trade

Malawi's honey market is expanding amid growing health awareness and domestic demand, but persistent supply-side constraints in quality, aggregation, and certification continue to impede commercialization (USAID, 2021).

The market is segmented into dominant informal channels—roadside vendors, open markets, and farmgate sales featuring mostly uncertified, unbranded honey—and emerging formal channels such as supermarkets, pharmacies, hotels, and health stores that prefer branded, certified products from processors and cooperatives (RLEEP, 2013; USAID, 2021). Product categories include imported branded honey (mainly from South Africa, Tanzania and India), locally branded and certified (often donor-supported), branded but uncertified (mid-tier outlets), and unbranded informal sales. Informal channels still account for over half of total volumes, reducing traceability and standards adherence (USAID, 2021).

Pricing varies by season, region, and channel, with most producers acting as price-takers, especially in remote areas with few buyers. Rising competition has increased farmgate prices in some locations, but transparency is limited, relying primarily on informal networks. Digital platforms like ESOKO remain underutilized despite their potential for enhancing efficiency (RLEEP, 2013).

Domestic demand is estimated at over 200 metric tons annually, surpassing local supply (around 120–150 metric tons based on available data), leading to ongoing imports from South Africa and India (USAID, 2021). Exports are modest but growing, directed to South Africa, Eswatini, Japan, and Taiwan. Interest from EU markets persists, yet barriers related to quality consistency, aggregation, and certification remain significant. Malawi's predominantly natural production systems provide a comparative advantage for organic and fair-trade niches, provided scaling and quality management improve.

1.10 Policy, Institutional, and Regulatory Environment

The sustainability and commercial growth of Malawi's beekeeping sector are governed by a framework of national policies and regulatory instruments designed to manage forest resources, ensure product quality, and promote equitable trade.

Table 3: Policy and Regulations

Policy / Law	Analysis (Relevance, Implications, Gaps)	Recommendations
National Agriculture Policy (2024) Ministry of Agriculture	**Relevance:** Recognizes beekeeping as a priority livestock/value chain; emphasizes climate-smart production, pollination services, biodiversity, and economic diversification. Encourages integration into agricultural curricula and capacity building. **Implications:** Access to extension services, modern inputs, private sector investment; adoption of improved hives and processing equipment; opportunity to increase honey yield per hive; fosters rural entrepreneurship, especially for women/youth. **Gaps:** Limited focus on post-harvest handling, quality assurance, and value addition; fragmented institutional mandates; weak linkages with forestry/trade; limited M&E indicators specific to honey.	• Establish a funded National Beekeeping Development Programme • Partner with MBS for honey quality standards enforcement • Promote cooperative formation and market linkages • Integrate apiculture with forestry, biodiversity, and climate programs- Include honey-specific indicators in national M&E • Design incentives for private investment in processing/packaging
National Livestock Policy (2021–2026)	**Relevance:** Integrates beekeeping in livestock sector; supports commercialization and livelihood	• Develop a National Apiculture Strategy aligned with livestock policy

Ministry of Agriculture – DAHLD	diversification; emphasizes youth/women inclusion. **Implications:** Enables targeted extension delivery, disease surveillance, and private sector engagement; potential to formalize informal beekeeping. **Gaps:** Superficial mention of beekeeping; no dedicated targets, budget, or institutional arrangements; weak cross-sectoral coordination with forestry, trade, and climate initiatives.	• Set clear performance targets and financing mechanisms • Strengthen DAHLD capacity for honey-specific challenges (pest/disease management, productivity, quality improvement)
National Agricultural Investment Plan (NAIP) Ministry of Agriculture	**Relevance:** Includes apiculture under livestock diversification and climate-smart agriculture; commits to training 4,500 beekeepers; links honey production to ecosystem sustainability. **Implications:** Platform for capacity building, access to modern hives/inputs, and agro-processing linkages; integrates honey in climate resilience/economic transformation initiatives. **Gaps:** No earmarked budget, infrastructure, or dedicated programs; weak linkage to trade/export strategies; honey not flagged as a flagship value chain.	• Explicitly prioritize honey in NAIP • Expand beekeeper training to include processing, packaging, and marketing • Allocate dedicated funds for honey infrastructure and value addition • Strengthen alignment with export promotion and climate-smart programs
Malawi 2063 / MIP-1 National Planning Commission	**Relevance:** Promotes agricultural diversification and commercialization; includes beekeeping in anchor farm models linking smallholders to markets, inputs, and extension; supports youth/women entrepreneurship. **Implications:** Structured platform for increasing production, income, and cooperative engagement; potential for integration with environmental restoration and honey marketing initiatives. **Gaps:** Minimal operational guidance; no dedicated apiculture strategy; limited export and environmental program integration.	• Develop a National Apiculture Strategy aligned with Malawi 2063 • Scale anchor farm models for honey • Integrate beekeeping with environmental restoration programs- Strengthen export readiness • Mainstream honey in district agricultural plans
National Export Strategy II (2021–	**Relevance:** Focuses on export diversification and agro-processing; honey fits objectives but is not explicitly	• Include honey as a priority export product

2026) Ministry of Trade	prioritized; encourages MSME participation. **Implications:** Opportunities for improving packaging, branding, certification, and market access; potential support for honey cooperatives and processors. **Gaps:** Honey omitted from priority export products; weak coordination between trade and agriculture; limited rural producer outreach.	• Improve institutional coordination between Trade, Agriculture, and Forestry- Develop a honey export development program • Provide training on export compliance and standards • Promote honey in regional and international niche markets
National Climate Change Management Policy (2016) Ministry of Natural Resources, Energy & Mining	**Relevance:** Supports Forest and ecosystem conservation, climate adaptation, and green livelihoods; aligns with honey sector needs. **Implications:** Promotes Forest conservation for bee forage, climate-smart methods, environmentally friendly honey marketing; enhances resilience of beekeeping communities. **Gaps:** No explicit apiculture support; limited integration with climate finance and adaptation programs.	• Include apiculture in climate action plans- Provide incentives for forest-friendly beekeeping • Incorporate beekeeping in capacity building and extension programs • Foster community projects linking honey production with environmental stewardship
National Environmental Policy (2004) Ministry of Natural Resources and Climate Change	**Relevance:** Supports sustainable resource use and biodiversity; essential for maintaining bee habitats and traditional beekeeping practices. **Implications:** Encourages integration of apiculture with conservation/agroforestry; promotes community natural resource management. **Gaps:** Outdated; lacks modern beekeeping or climate references; weak coordination with current agriculture and forestry policies.	• Update policy to include pollination and honey value chains • Promote biodiversity-friendly beekeeping practices • Encourage partnerships between honey producers and conservation programs
National Forest Policy (2016) Ministry of Natural Resources & Climate Change – Forestry	**Relevance:** Recognizes honey as a non-timber forest product; supports forest-based livelihoods and sustainable forest management. **Implications:** Protects bee forage habitats; legitimizes forest-based honey	• Operationalize honey as a flagship forest product • Develop support guidelines for forest honey cooperatives

	production; links apiculture with biodiversity and climate resilience efforts. **Gaps:** Lack of targeted apiculture programs; limited cross-sector collaboration; underdeveloped gender/youth inclusion in forest apiculture.	• Promote investment in forest apiculture • Enhance intersectoral collaboration-Mainstream women and youth empowerment
Forestry Act (1997) Department of Forestry	**Relevance:** Legal foundation for forest conservation and sustainable harvesting; supports non-timber forest products including honey. **Implications:** Facilitates access to forest forage; provides legal recognition for honey; entry point for integrating beekeepers into forest conservation agreements. **Gaps:** No direct provisions for apiculture; bee forage often ignored in forest plans; no protection against pesticide use near reserves.	• Amend forest guidelines to include apiculture zoning and bee forage protection • Streamline forest access rights for registered beekeepers • Promote forest-based beekeeping in reforestation and climate resilience programs
Environment Management Act (2017) Environmental Affairs Department	**Relevance:** Governs sustainable natural resource use; mandates Environmental/Social Impact Assessments; protects ecosystems essential for honey. **Implications:** Protects bee forage zones; can channel finance to honey cooperatives; supports nature-positive livelihoods. **Gaps:** No direct mention of apiculture; lack of guidance on pesticides or biodiversity offsets.	• Recognize apiculture as an ecosystem service in EIA guidelines • Mainstream honey value chains in environmental planning • Train local officers to support honey cooperatives in land-use compliance
Control of Goods Act Ministry of Trade	**Relevance:** Regulates import/export of goods, including honey; provides legal basis for export promotion. **Implications:** Requires export permits; can restrict low-quality imports; supports traceability. **Gaps:** No honey-specific procedures; slow permits; limited coordination with agriculture for export support.	• Designate honey as a priority export product-Simplify export permit procedures • Align honey export procedures with SADC/AfCFTA protocols • Train cooperatives on licensing and export documentation
Malawi Standard DMS 366:2021	**Relevance:** Honey quality standard covering moisture, HMF, sugar,	• Conduct national awareness campaigns

Malawi Bureau of Standards	labeling, hygiene; aligns with Codex Alimentarius; critical for premium domestic/export markets. **Implications:** Enables producers to improve quality, traceability, and market access; encourages investment in processing/testing/packaging. **Gaps:** low awareness among producers.	• Train producers and aggregators on GMP and HACCP

1.11 Gender, Youth, and Disability Inclusion

Inclusive participation of women, youth, and persons with disabilities is essential for the sustainability and equitable growth of Malawi's beekeeping sector, yet social norms, limited access to productive assets, and weak institutional support continue to constrain meaningful inclusion.

Beekeeping in Malawi has historically been male-dominated due to cultural perceptions, safety concerns, and control over productive resources. The RLEEP (2013) survey shows that 65–83 percent of beekeepers in key districts were male, with near parity only in Mulanje. Men generally dominate decision-making and access to training, hives, and markets. However, beekeeping is less labour-intensive and compatible with household routines, making it suitable for women, who are often active in post-harvest handling and marketing, though these roles remain informal. Targeted, gender-responsive training and finance have demonstrated improved participation and income outcomes.

Youth participation has traditionally been limited, as beekeeping has been dominated by older farmers and constrained by start-up capital and limited youth-focused support. More recently, youth groups have begun adopting beekeeping as an income-generating and conservation-linked enterprise. Evidence from Malawi and the region shows that youth engagement improves when access to modern hives, practical skills training, and clear market linkages is provided, given the sector's low land requirements and relatively quick returns.

Persons with disabilities have largely been overlooked in apiculture programmes, reflecting broader gaps in inclusive design and data. Emerging experiences indicate that beekeeping can be adapted through modified hive placement, appropriate protective equipment, and accessible training, enabling meaningful participation. Where deliberate efforts address physical and attitudinal barriers, inclusive beekeeping has been shown to enhance income, self-reliance, and social inclusion.

1.12 Regional and International Benchmarking

To assess the competitiveness and growth potential of Malawi's beekeeping sector, it is essential to evaluate its performance and regulatory alignment against regional neighbors and international market standards.

Table 4: Regional and International Benchmarking

Country / Region	Policy / Regulatory Framework and Analysis
Uganda	Uganda's National Apiculture Policy (2009) and Apiculture Development Strategy (2013–2018) aim to commercialize beekeeping through strengthened input supply systems, research, training, and infrastructure. Apiculture is recognized as a forestry-compatible livelihood and supported through regional apiary resource centers and public–private partnerships. Uganda produces approximately **12,000–15,000 MT of honey per year** and exports honey and beeswax to EU and COMESA markets. Industry coordination, branding ("Honey of Uganda"), and export certification are overseen by the Uganda National Apiculture Development Organisation (TUNADO), supported by established quality assurance and testing protocols.
Zambia	Zambia's Animal Health (Beekeeping) Regulations (2020) provide one of the most structured apiculture regulatory regimes in the SADC region. Beekeepers must obtain permits, undergo disease surveillance, and comply with defined export standards, enforced by the Director of Veterinary Services. Zambia's honey production is estimated at **3,000–5,000 MT annually**, and despite moderate volumes, the country has positioned itself as a credible exporter to EU and regional markets. Institutions such as the Zambia Honey Council support aggregation, export readiness, and quality control.
Tanzania	Tanzania regulates apiculture under the Beekeeping Act (2002) and the National Beekeeping Policy Implementation Strategy (NBPIS). The strategy targets expansion of gazetted bee reserves from 11,236 ha to 114,000 ha and increased certification of producers, with implementation overseen by the Tanzania Forest Services Agency (TFS). Tanzania produces an estimated **30,000–35,000 MT of honey annually**, making it one of Africa's leading producers, and also leads regional beeswax production. The sector is strongly integrated with forestry, tourism, and biodiversity conservation policies, reflecting a clear comparative advantage.

Ethiopia	Ethiopia has a comprehensive National Apiculture Strategy with explicit production targets, including scaling output to approximately **200,000 MT by 2025**. Current production is estimated at **170,000–200,000 MT per year**, ranking Ethiopia as Africa's largest honey producer and among the top ten globally. The strategy promotes modern hive adoption, private sector investment, and commercialization, supported by institutions such as the Ethiopian Honey and Beeswax Producers Association and the Ethiopian Conformity Assessment Enterprise (ECAE). Challenges persist around informal trade, post-harvest contamination, and high export testing costs.
South Africa	South Africa enforces stringent honey grading, labeling, and hygiene standards under the Product Standards Act, complemented by disease and pest control measures under the Agricultural Pests Act. Honey is classified into regulated grades based on diastase activity, sugar profile, moisture content, and contaminant thresholds. Beekeepers must register every two years and visibly mark hives, with inspections and disease surveillance institutionalized. Although annual honey production is relatively low at approximately **2,000–3,000 MT**, the robustness of the regulatory framework supports consumer protection and access to high-value export markets.

1.12.1 Implications for Malawi

Benchmarking apiculture in SADC member states (Zambia, Tanzania, South Africa) and leading African producers (Uganda, Ethiopia) highlights lessons for Malawi, which currently relies on traditional beekeeping, lacks a national policy, and faces challenges in quality, traceability, market access, and sustainable resource management.

The following key implications are recommended for Malawi:

Development of a National Apiculture Policy and Regulatory Framework

Malawi should adopt a comprehensive national apiculture policy supported by appropriate legislation. This framework should establish provisions for beekeeper registration, hive inspection, disease surveillance, and export certification, drawing on Zambia's Animal Health (Beekeeping) Regulations (2020) and Tanzania's Beekeeping Act (2002). The policy should integrate apiculture with forestry, wildlife, agriculture, and environmental policies in alignment with the SADC Regional Agricultural Policy and Wildlife Strategy.

Strengthening of Quality Standards and Supporting Infrastructure

National honey quality standards should be established and enforced, covering purity, moisture content, diastase activity, and absence of contaminants. Investment in domestic laboratory capacity is essential to reduce dependence on external facilities and ensure compliance with regional and international requirements. South Africa's grading and inspection systems and Zambia's export-oriented quality protocols provide effective models.

Establishment and Strengthening of Producer Organisations

A national apiculture coordinating body should be created or an existing institution mandated to oversee sector development, training, input supply, aggregation, and market linkages. Modelled on Uganda's TUNADO and the Zambia Honey Council, this body should promote cooperative formation and capacity building to enhance collective marketing, value addition, and access to finance.

Promotion of Environmental Sustainability and Cross-Sectoral Coordination

Measures should be introduced to protect bee habitats, including gazetted bee reserves, regulated pesticide use, and promotion of api-agroforestry systems. These interventions, successfully applied in Tanzania and Uganda, will support colony health, biodiversity conservation, and long-term sector viability.

Enhancement of Export Readiness and Market Access

Interventions should focus on compliance with SADC, COMESA, and international standards to facilitate access to regional and high-value export markets. Initial emphasis on intra-SADC trade, combined with investments in post-harvest handling and certification, will enable Malawi to capitalize on growing demand for quality honey and beeswax, as demonstrated by Zambia and Uganda.

Implementation of these recommendations, through a coordinated, evidence-based approach supported by relevant stakeholders and development partners, will enable Malawi to expand honey production, improve rural livelihoods, generate foreign exchange, and contribute to environmental conservation objectives.

HONEY PRODUCTION ANALYSIS

The study followed a survey-based method in the estimation of the honey production levels in Malawi. This section presents the findings on honey production leveraging the survey results and the data provided by the district councils. The study accounted for the variations across, hives types, colonization rates, and regions.

1.13 Hives Types, Colonization, and Productivity

Hive technology plays a central role in shaping productivity outcomes and investment decisions within Malawi's honey industry. An assessment of hive utilization, colonization rates, and yields provides important insights into both the technological profile of the sector and the operational constraints faced by smallholder beekeepers (Table 6).

This study found predominant penetration of the Kenyan top-bar hives among beekeepers in Malawi, suggesting wide acceptability of improved hive technologies with proven yield potentials in other regions. Most importantly, the dominance of top-bar hives (54.74%) and traditional hives (35.38%) in the sector reflects their lower upfront costs, local availability of construction materials, and compatibility with extensive, low-input beekeeping systems commonly practiced by smallholders. In contrast, the limited uptake of Langstroth hives (9.88%) points to persistent barriers related to capital requirements, technical complexity, and limited access to extension services and appropriate accessories, rather than a lack of productivity potential.

Table 5: Hive utilization, colonization rates, and productivity

Hive Type	Utilization (%)	Average Yield (KG/hive)	Colonization Rate (%)
Top Bar	54.74	9.23	67.94
Traditional/Local	35.38	8.46	69.28
Langstroth	9.88	10.73	73.03
Overall	-	9.10	68.87
Std Variation	-	7.20	25.81
Significance – ANOVA (χ^2)	-	2.7514 (p=0.253)	0.2921 (p=0.864)

Although Langstroth hives record higher average yields (10.73 kg per hive) and superior colonization rates (73.03%), the absence of statistically significant differences indicates that hive technology alone is not the binding constraint to productivity. The high variability in yields (standard deviation of 7.20 kg) suggests substantial heterogeneity in management practices, including differences in hive placement, colony management, pest and disease control, and harvesting techniques. As a result, many beekeepers are unable to fully realize the technical advantages of improved hive technologies, particularly improved hive systems, due to gaps in skills, inputs, and routine management.

Importantly, traditional hives exhibit colonization rates comparable to improved hives, implying that bee availability and environmental suitability are generally adequate. Productivity constraints, therefore, appear to emerge after colony establishment, driven by factors such as poor hive management, destructive harvesting practices, limited use of protective equipment, and inadequate seasonal feeding or hive inspection. This helps explain why top-bar hives, despite being more manageable and theoretically more productive, do not consistently deliver substantially higher yields in practice among smallholders.

Figure 1: Hive technologies observed during the survey, left (traditional), middle (top-bar) and right (Langstroth)

Overall, the findings point to a technology–capacity mismatch within Malawi's honey industry. While improved hive technologies are present, their productivity advantages are not systematically translated into higher output among smallholders. Addressing this gap will require complementary investments in beekeeper training, strengthened extension services, improved access to essential accessories (protective clothing, smokers, extractors), and appropriate market incentives to justify adoption of higher-cost hives. Without tackling these systemic constraints, the promotion of improved hive technologies such as the Langstroth or Top-bar alone is unlikely to generate meaningful or sustained productivity gains.

Focus Group Discussions (FGDs) with beekeepers echoes the quantitative findings on colonization and productivity, highlighting several practical and ecological constraints that limit effective hive utilization. Participants reported that a substantial number of hives remain uncolonized due to low swarm availability, inappropriate hive siting, exposure to predators, and declining forage resources resulting from deforestation and overexploitation of forest landscapes. Knowledge gaps related to seasonal timing and hive baiting techniques were also identified as key factors contributing to low colonization rates, even where hive structures are technically sound. These qualitative insights reinforce the statistical evidence that colonization outcomes are weakly associated with hive technology type and are instead driven by management practices and ecosystem conditions. From a policy perspective, addressing colonization bottlenecks through targeted extension support, beekeeper training, ecological restoration, and community-based forest management is essential to improving overall honey output, as productivity gains cannot be realized where hives remain uncolonized.

1.14 Regional Honey Productivity Variations

The regional productivity results in Table 7 provide important policy-relevant insights into honey production performance. While average yields differ across regions, being highest in the Central Region and lowest in the Southern Region, the lack of statistically significant variance in yields across regions (Bartlett's test, $\chi^2 = 1.30$, $p = 0.523$) indicates that regional location alone does not explain productivity differences. Instead, the wide dispersion of yields within regions suggests that beekeeper-level management practices, access to extension services, and local production conditions are the dominant determinants of output.

Table 6: Regional honey productivity variations

Hive Type	Region (KG/hive)			
	Central	North	South	Overall
Langstroth	11.46	11.12	9.55	10.73
Top Bar	11.98	8.88	7.57	9.23
Traditional/Local	9.84	8.26	4.22	8.46
Overall	**11.10**	**8.82**	**8.15**	**9.10**
Bartlett's equal-variances test: $\chi^2 =$ 1.2961 Prob>χ^2 = 0.523				

Nevertheless, the consistent lower yields in the Southern Region across all hive technologies, implies that structural constraints such as forage scarcity, environmental degradation, and limited management intensity are constraining productivity and cannot be addressed through uptake of improved technology alone. From a policy perspective, these findings underscore the need to complement hive technology promotion with targeted extension, forage development, and landscape-level interventions, particularly in lower-performing areas, and to prioritize management-intensive support measures.

1.15 Estimation of National Honey Production Levels

National honey production was estimated using a regionally weighted hive-based production model that integrates district-level hive inventories with region-specific colonization rates and yield parameters. This approach improves on simple national averaging by explicitly accounting for spatial heterogeneity in ecological conditions, management intensity, and production systems across Malawi's three main agro-ecological zones (Northern, Central, and Southern Regions).

$$\sum_{region} \left(Hives_{region} \times Colonization_{region} \times Yield_{region}\right)$$

The analysis estimates that Malawi currently has 45,879 active beehives, of which approximately 32,977 are colonized, reflecting an overall regionally adjusted colonization rate of about 72 %, with substantial geographical variation (Table 8). Applying average region-specific productivity coefficients, 11.10 Kg/hive in the Central Region, 8.82 Kg/hive in the Northern Region, and 8.15 Kg/hive in the Southern Region, yields an estimated national honey production of approximately **301.6 metric tonnes per year**, with an uncertainty bound of 286.5 to 316.6 metric tonnes based on a ±5 percent sensitivity band.

Table 7: Estimated beehive footprints and annual production in Malawi

ADD	DISTRICT	HIVES	COLONISED HIVES	ANNUAL PRODUCTION (KGs)	PRODUCTION (MT)
KRADD	CHITIPA	2,053	1,334	11,769.85	11.77
KRADD	KARONGA	1,089	708	6,243.24	6.24
MZADD	MZIMBA	2,383	1,549	13,661.74	13.66
MZADD	RUMPHI	10,878	7,071	62,363.57	62.36
MZADD	NKHATABAY	9,941	6,462	56,991.75	56.99
KADD	KASUNGU	1,413	1,102	12,233.75	12.23
KADD	MCHINJI	427	333	3,696.97	3.70
KADD	NTCHISI	651	508	5,636.36	5.64
KADD	DOWA	1,171	913	10,138.52	10.14
SLADD	NKHOTAKOTA	826	644	7,151.51	7.15
SLADD	SALIMA	1,080	842	9,350.64	9.35
LADD	LILONGWE	1,710	1,334	14,805.18	14.81

LADD	DEDZA	1,152	899	9,974.02	9.97
LADD	NTCHEU	835	651	7,229.43	7.23
MADD	MACHINGA	1,053	885	7,208.84	7.21
MADD	ZOMBA	1,804	1,515	12,350.18	12.35
MADD	MANGOCHI	1,020	857	6,982.92	6.98
MADD	BALAKA	907	762	6,209.32	6.21
BLADD	BLANTYRE	710	596	4,860.66	4.86
BLADD	MULANJE	680	571	4,655.28	4.66
BLADD	THYOLO	410	344	2,806.86	2.81
BLADD	CHIRADZULU	380	319	2,601.48	2.60
BLADD	PHALOMBE	994	835	6,804.92	6.80
BLADD	MWANZA	1,041	874	7,126.69	7.13
BLADD	NENO	317	266	2,170.18	2.17
SHVADD	CHIKWAWA	954	801	6,531.08	6.53
TOTAL		**45,879**	**32,977**	**301,554.94**	**301.55**

Estimated National Production		**301.55**
Upper Uncertainty Bound +5%	**1.05**	**316.63**
Lower Uncertainty Bound -5%	**0.95**	**286.48**
Average Yield (Kg/Hive)	**9.10**	
North	8.82	
Central	11.10	
South	8.15	
Colonisation Rate (%)	**0.69**	
North	0.65	
Central	0.78	
South	0.84	

Although Malawi has nearly 46,000 hives, only 33,000 are effectively productive, implying that over 12,900 hives remain idle. At current productivity levels, these uncolonized hives represent a lost production potential of approximately **105 metric tonnes per year**. This means that over one-quarter of Malawi's installed apiculture capital is economically underutilized.

Most importantly, colonization rates vary sharply by region:

- Northern: 65%
- Central: 78%
- Southern: 84%

This pattern is consistent with FGD evidence showing that in forest-rich northern districts, swarm availability is high but management practices and hive placement limit capture, while in the South, colonization is higher but ecological limits constrain honey accumulation.

1.15.1 Regional Structure of Production Capacity

Hive distribution and output are highly spatially concentrated. The Northern Region, driven primarily by Rumphi (10,878 hives) and Nkhata Bay (9,941 hives), continues to account for the largest share of national hive stock and honey output, accounting for more than half of the national production. This spatial pattern is economically significant. These areas are characterized by low population density, extensive forest cover, and large plantation landscapes (coffee, macadamia, rubber), which provide high-quality and continuous forage for bees. This confirms that land use and ecosystem conditions are first-order determinants of honey production capacity, overshadowing differences in beekeeper technology or management.

However, the Central Region exhibits the highest productivity per hive, driven by a combination of superior colonization rates (78%) and the highest regional yield (11.10 kg per hive). This implies that investments in the Central Region generate significantly higher marginal returns per hive than in other regions, despite a smaller total hive footprint.

In contrast, the Southern Region, despite having the highest colonization rate (84%), show consistently lower hive densities and smaller production volumes, despite being more densely populated. For example, Thyolo and Chiradzulu each produce less than 2.81 MT, compared with over 62.36 MT in Rumphi. This points to structural constraints from land fragmentation, deforestation, and competing land uses, rather than beekeeper effort.

1.15.2 Regional Investment Priorities

Based on the findings above, the Malawi honey sector suffers from regional imbalances (dominance of the North, ecological slowdown in the South) and a national systems gap (quality, markets, research). Investment must be spatially tailored to address specific bottlenecks, while national-level programs build the foundations for a cohesive, high-value industry.

Table 8: Proposed regional production investment priorities in Malawi

Region	Key Challenges	Policy Focus	Priority Investment
North	Low colonization rate (65%) despite very large hive	• Swarm attraction and baiting programs	• Scale Unlocking Zone

	numbers and strong forage potential.	• Hive placement and apiary management • Predator control and maintenance training	• High-impact, low-cost productivity unlocking.
Central	Limited hive density relative to productivity potential.	• Credit for hive expansion • Private sector apiary development • Langstroth and commercial hive upgrading	• Commercial scaling and private-sector anchoring.
Southern	Forage collapse from deforestation and land pressure.	• Beekeeping-linked reforestation • Community-based forest co-management • Floral restoration	• Nature-based ecological restoration. • "Honey for Trees" PES programs & bee-friendly reforestation.

1.16 On-going National Data Collection System Design

Malawi currently lacks a reliable, standardized system for estimating national honey production. Unlike staple and cash crops, honey and other apiculture products are not covered by the Agricultural Production Estimates Survey (APES) or any other routine national statistical operation. Existing figures are therefore drawn from sporadic project surveys, NGO reports, and localized district records, none of which are designed to produce nationally consistent or trend-comparable estimates.

This data gap constrains evidence-based policymaking in at least four ways. First, it prevents government and donors from quantifying the economic contribution of apiculture to rural livelihoods and exports. Second, it limits the ability to monitor productivity, climate vulnerability, and forest–pollinator interactions. Third, it weakens investment planning for processing, marketing, and extension services. Fourth, it undermines accountability for public and donor spending in the sector.

To address this, the study recommends the establishment of a National Apiculture Data System (NADS), a survey-based stock-and-flow monitoring platform for honey and hive production, fully embedded within Malawi's national agricultural statistics architecture.

The proposed NADS would function as a lightweight, low-cost annual survey system that tracks three core elements:

- **Stocks** – number and types of hives, and their operational status
- **Flows** – honey harvested, sold, and lost during the season
- **Productivity** – yields per hive and per beekeeper

The system is explicitly designed to complement, not replace, existing national surveys. Where possible, its core modules should be aligned with APES and the Integrated Household Survey (IHS), allowing honey to become part of Malawi's mainstream agricultural statistics.

Internationally, similar systems are already in use. Ethiopia's Apiculture Management Information System (APMIS) and the U.S. National Agricultural Statistics Service (NASS) Honey Bee Surveys demonstrate that a dedicated, low-burden apiculture survey can produce reliable national estimates when embedded in official statistical systems. NADS would follow this proven model while being adapted to Malawi's institutional and ecological context.

1.16.1 Proposed Methodology for the National Apiculture Data Collection System

NADS would be implemented through an annual honey and apiculture survey covering all honey-producing units, including:

- Smallholder beekeepers
- Beekeeping cooperatives
- Commercial apiaries

The survey would collect information for the immediately preceding production year, using recall periods aligned with the honey harvesting cycle.

Data collection would focus on a small but policy-critical set of indicators:

- Number of hives (by type and location)
- Active vs. inactive hives
- Honey harvested (quantity)

- Honey sold (quantity and value)
- Losses due to pests, absconding, fire, and other shocks

To improve accuracy, the system would include a small objective-measurement subsample (around 10–15% of respondents) in which enumerators physically verify hives and directly measure harvested honey where feasible. These data would be used to statistically correct for recall and reporting bias in the full sample.

Institutional Governance and Data Flow

Although apiculture in Malawi is formally housed under the Department of Animal Health and Livestock Development (DAHLD), honey remains fundamentally a forest-based product, and the Department of Forestry (DoF) continues to manage much of the grassroots extension and beekeeper engagement through Forest Assistants and Assistant Forest Officers. At the same time, the Department of Agriculture Planning Services (DAPS), through its Statistics Unit, retains the national mandate for agricultural data systems and official production estimates.

The study therefore recommends a joint governance model:

- **DAHLD** provides sector leadership and technical oversight on apiculture
- **DAPS (Statistics Unit)** lead sampling design, data management, and official estimation
- **DoF** supports field implementation through its community-level forest and beekeeper networks

At the district level, EPA staff and Forest Assistants would administer the survey instruments, verify beekeeper listings, and submit data to the District Agricultural Development Office for validation before transmission to national level.

This arrangement builds on existing institutional strengths, avoids duplication, and anchors honey statistics within Malawi's official statistical system.

Sampling Frame

NADS would use a multi-stage stratified sampling design to ensure national representativeness while keeping costs low.

Stratification would occur along two key dimensions:

- Agro-ecological zones
- Beekeeping and forest-cover intensity

Within each stratum, districts and EPAs with known beekeeping activity would be prioritized, followed by the selection of sections, blocks, and finally individual beekeepers. Beekeeper lists would be verified using existing grassroots structures, including Agricultural Extension Development Officers and Forest Assistants.

This approach ensures that both high-production areas (such as Rumphi and Nkhata-Bay) and emerging beekeeping zones are adequately represented.

Data Integration with Existing Systems

For long-term sustainability, NADS should not operate as a stand-alone project. Its data structures and reporting formats should be fully compatible with APES and national agricultural databases, allowing honey statistics to be incorporated into Malawi's official production accounts, value-added estimates, and agricultural GDP calculations.

By embedding NADS within existing survey operations and district reporting systems, Malawi can generate credible, annually updated national honey production estimates at a fraction of the cost of repeated ad hoc studies, providing donors and government with the data foundation needed to scale investment, track impact, and manage the sector strategically.

Table 9: Operationalisation Roadmap of the System

Phase	Objective	Key Activities	Deliverables
Phase 1: System Design, Review, & Piloting	Establish a functional and tested national honey data system	• Form DAHLD–DAPS–DoF steering committee • Design honey survey modules • Develop sampling framework • Pilot in selected high-production districts • Test data flows and quality control	• Validated survey tools • Pilot production estimates • Operational data collection and reporting system
Phase 2: National Rollout	Generate Malawi's first nationally representative honey estimates	• Train EPA and Forestry staff nationwide • Implement survey in all honey-producing districts • Produce first national honey production report	• National honey baseline • District honey profiles • Productivity benchmarks

Phase 3: Integration & Institutionalization	Embed honey statistics into government systems	• Integrate honey module into APES and NAMIS databases • Align with livestock and forestry reporting • Formalize annual reporting calendar	• Honey officially included in agricultural statistics • Routine publication mechanism
Phase 4: Quality & Policy Enhancement	Improve precision and analytical value	• Expand physical verification subsample • Link honey data to forest and climate datasets • Introduce loss and productivity diagnostics	• High-credibility yield and loss estimates • Evidence for climate-smart apiculture
Phase 5: Sustainability & Scale-Up	Ensure long-term government ownership and policy use	• Government assumes full operational responsibility • Honey data used in investment and export strategies	• Fully institutionalized National Honey Data System

HONEY VALUE CHAIN ANALYSIS

1.17 Value Chain Players, Roles, and Linkages

The honey value chain in Malawi is composed of a diverse set of actors performing interlinked functions from input supply to production to markets. The structure is largely informal and fragmented, but it exhibits significant potential for growth and formalization. The value chain can be broadly divided into five functional segments: input supply, production, aggregation and processing, and marketing. Each segment is characterized by distinct actors, roles, and interaction dynamics that determine overall efficiency and competitiveness of the honey sector. The value chain is summarized in

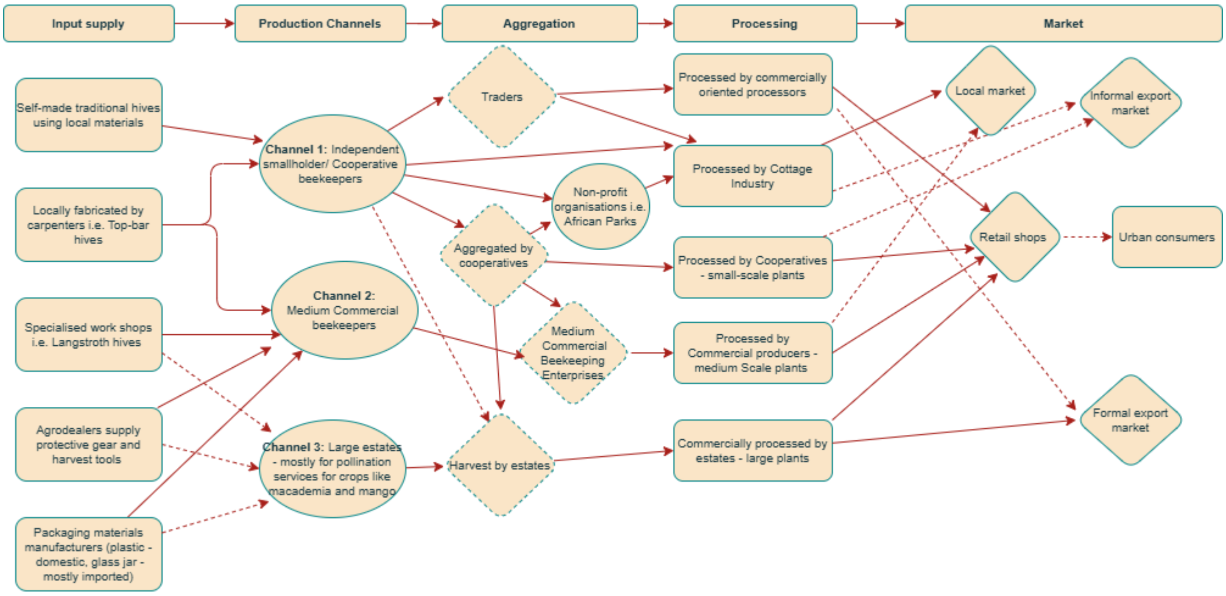


Figure 2: Honey Value Chain Schematic

1.17.1 Input Supplies

Input suppliers are critical to Malawi's honey value chain, providing the materials, skills, and services needed for beekeeping. Key suppliers include:

- Honey Products Limited
- African Honey & Food Products (Fredricks Honey)
- Harmonia Beekeeping and Food Limited
- Honey with Heart
- Honey Den Limited
- ICAN Investments
- Local artisans and carpenters

They supply a range of inputs supporting both traditional and modern systems, including:

- Traditional and modern hives (top bar and Langstroth)
- Protective clothing (bee suits, gloves, gumboots)
- Basic tools (smokers, hive tools, knives, brushes, feeders)
- Small-scale extraction equipment (honey presses, sieves, manual extractors)

Some critical inputs are largely imported, such as advanced honey processing machines, wax presses, large-capacity extractors, honey filters, queen rearing tools, and standardized packaging equipment.

Suppliers also provide services like:

- Training on hive management and beekeeping practices
- Advisory support on sustainable and commercial beekeeping
- Honey aggregation, quality control, and bulking
- Market linkages and off-take arrangements
- Financing support through loans or equipment hire

Key challenges include heavy reliance on imports, limited local manufacturing, environmental degradation, inconsistent honey supply, and limited access to finance. Opportunities lie in growing domestic and regional demand, localizing equipment production, expanding youth- and community-based enterprises, value addition, and linking beekeeping with conservation and climate-smart initiatives.

Survey data show that beekeepers obtain most of their inputs from self-made sources (46%), followed by NGOs and CBOs (35%), local suppliers (25%), and national suppliers (5.5%). NGOs, development projects, and government programs also play a crucial role. Honey With Heart provides training, equipment, and market support near national parks, World Connect supports women-led projects and cooperatives like Kapombedza and Chiwamba, and Drop of Compassion promotes village-level beekeeping for income and environmental benefits. FAO, in partnership with government and EU programs, offers technical support and equipment through projects such as the Uchi Project, while government initiatives like the TRADE Programme and AGCOM provide grants, training, and cooperative strengthening. Together, these actors improve access to inputs, training, finance, and markets, supporting sustainable practices and opportunities for smallholders, cooperatives, youth, and women across Malawi's honey value chain.

1.17.2 Producers

Honey production in Malawi is dominated by three main producer typologies: smallholders (both independent and those organized into cooperatives or farmer organizations), commercial beekeepers, and estates that maintain apiaries primarily for pollination services. Each group contributes differently to national production, exhibits distinct characteristics, and faces specific challenges and opportunities within the honey value chain.

Channel 1: Independent smallholder beekeepers and cooperative or farmer organization members:

Independent smallholder beekeepers and members of cooperatives or farmer organizations constitute the primary production base of Malawi's honey sector, representing an estimated 27,000 producers nationwide. These producers operate either individually with privately owned hives or collectively through group-managed hives within cooperatives or farmer organizations.

Survey data collected from 357 beekeeper households shows that producers manage an average of 6.73 hives per household, although ownership varies considerably across regions. The Northern Region records the highest average number of hives per household, while the Central and Southern Regions report lower averages. This variation reflects differences in ecological suitability, forest cover, and the historical presence of beekeeping support programs.

Table 10: Average Hives per Household

Region	Average Hives per Household	Standard Deviation
Central	4.76	3.92
North	7.57	5.62
South	4.08	3.30
Overall	**6.73**	**5.33**

Most producers rely primarily on traditional log hives and top-bar hives, though members of cooperatives often have better access to improved technologies, technical training, and inputs through support from NGOs, development partners, and government initiatives. Beekeeping activities are typically located near forests, national parks, and private forest reserves, which provide important forage resources for bee colonies.

This group collectively produces approximately 259 metric tonnes of honey, accounting for about 86 percent of Malawi's estimated total honey production of 301.55 metric tonnes, highlighting the central role of smallholders in national honey supply.

The socio-economic profile of the surveyed producers reflects a diverse rural livelihood base. Men account for 58.7 percent of beekeepers while women represent 41.3 percent, indicating relatively strong female participation in the sector. The average age of producers is 48.3 years, with a median age of 48 years, suggesting that beekeeping is primarily practiced by middle-aged rural households.

Households are moderately large, with 51 percent comprising 5–7 members, while 27 percent have eight or more members and 22 percent have between one and four members. Educational attainment is generally modest, with the majority of producers having completed primary education (57.6 percent), followed by secondary education (36.7 percent), while 6.3 percent report no formal education.

Experience levels vary across producers. Approximately 34 percent have less than five years of beekeeping experience, indicating recent entry into the sector, while 27 percent have more than ten years of experience, reflecting the presence of long-established practitioners alongside newer participants.

Table 11: Socio-economic Characteristics of Surveyed Beekeepers (n = 357)

Characteristic	Category	Percentage / Value
Gender	Male	58.70%
	Female	41.30%
Age	Mean age	48.3 years
	Median age	48 years
Household Size	1–4 members	22%
	5–7 members	51%
	8 or more members	27%
Education Level	No formal education	6.30%
	Primary education	57.60%
	Secondary education	36.70%
Beekeeping Experience	Less than 5 years	34%
	5–10 years	39%
	More than 10 years	27%

Economic data further indicates that surveyed households report an average annual income of MWK 2.9 million across livelihood activities. However, disparities are evident across gender and age groups. Male producers report an average income of MWK 3.2 million compared with MWK 2.5 million for female producers, indicating a 28 percent gender income gap. Similarly, adults earn an average of MWK 3.2 million while youth earn MWK 1.7 million, reflecting an 88 percent income gap between adult and youth producers.

Key producers in Malawi's honey sector include Kabunduri Honey Producers and Marketing, Lweya Honey Cooperative, Nkhawali Honey Producers and Processing Cooperative Society Limited, Chituka Beekeepers Cooperative, Mpoto Cooperative, Livingstonia Beekeepers Cooperative, Thazima Honey Producers & Marketing Cooperative, Team Work (TEWO), Katambasula Cooperative, Songani Beekeepers Association, Tikondane Beekeeping, Thumba Honey Producers & Marketing Cooperative, Katete Beekeeping, and Kachikumba Beekeeping. These organizations facilitate hive management, collective marketing, access to training and inputs, and aggregation of honey from smallholder producers, forming the backbone of the country's honey production network.

Key off-takers that purchase honey from these producers include Kwithu Kitchen, African Parks (through the Honey With Heart initiative), Pure Honey, Chunga Investments, Village Farms, and local vendors. These buyers provide crucial market access, enabling producers to generate income, supplement household livelihoods, and integrate into formal and semi-formal honey value chains.

Chapter 2: Medium Commercial beekeepers

These represent a smaller but significant segment of the sector. Operating 50 or more hives, these producers are generally professionally managed and adopt modern or top-bar hives with more systematic colony management. Commercial beekeepers contribute approximately 12 metric tonnes, or 4 percent of national production. Their honey is primarily sold to processors or other formal buyers, allowing them to secure higher prices and more consistent income than smallholders. Producers in this category are typically younger to middle-aged adults, often with higher education and access to labor and financial resources to support hive management. Their main challenges include maintaining colony health, labor management, seasonal fluctuations in forage availability, and access to modern processing technology.

Channel 3: Large Estates

Estates make up the third typology and maintain apiaries primarily to provide pollination services for high-value crops such as macadamia, mango, and citrus. Honey produced as a by-product contributes approximately 30 metric tonnes, or 10 percent of national production. These operations are highly structured and professionally managed, with modern hives, dedicated labor, and direct access to processors or export markets. Estates such as

- Malawi Mangoes Limited in Salima,
- Kawalazi Estate in Nkhatabay
- Gala Farms in Lilongwe

While they are well-resourced, estates face challenges related to labor costs, environmental factors affecting forage and colony productivity, and the management of high-value pollination services alongside honey production.

1.17.3 Honey Aggregation

Honey aggregation in Malawi is a critical node linking dispersed producers to processors, formal markets, and consumers. Aggregation determines both the quality of honey that reaches the market and the income that producers earn. The system is structured around four main channels: cooperatives and farmer organizations, commercial registered beekeepers, estates, and informal vendors, each operating differently in scale, efficiency, and market orientation.

Cooperatives and Farmer Organizations form the backbone of structured honey aggregation. Collectively, they handle approximately **247 MT** of honey annually, sourced from both cooperative members and affiliated independent smallholders. Most of this honey, around **160 MT**, is sold to formal offtakers, including processors, retail companies, and social enterprises.

A small portion, estimated at 3–5 MT, is retained by cooperatives for in-house processing, bottling, and local marketing, demonstrating the potential for value addition at the cooperative level. While these efforts are encouraging, the majority of cooperative honey is bulked and sold without further processing due to limited working capital, storage facilities, and packaging capacity. These constraints often delay purchases and affect timely supply to offtakers.

Medium Commercial Beekeepers aggregate approximately **12 MT** annually. They primarily source honey from their own apiaries and, in some cases, from a few smallholder out-growers. Commercial producers typically sell directly to formal buyers or niche markets, which allows for better quality control and more consistent traceability compared to informal channels. Despite their higher standards, the overall contribution of commercial producers to national aggregation is modest.

Estates continue to aggregate honey entirely within their own production systems. As previously discussed, estates handle about **30 MT** annually, maintaining strict traceability and centralized processing. Honey from estates does not enter broader aggregation networks, as estates primarily produce honey as a high-value by-product of pollination services.

Informal Vendors and Traders absorb the remaining **90 MT** of honey. These actors source honey directly from cooperatives and independent smallholders and supply semi-formal and informal urban markets. Honey is usually traded in bulk containers without grading, quality control, or traceability. Flat pricing structures dominate, offering little incentive for producers to improve post-harvest handling, which results in quality losses and limits the sector's ability to access premium markets.

1.17.4 Honey Processing

Honey processing in Malawi is central to product quality, safety, and value. It ranges from basic small-scale processing by cooperatives and smallholders to industrial-level processing by commercial processors and estates. Each level serves distinct markets and requires different infrastructure, technology, and standards.

Processed by Commercially Oriented Processors / Industrial

Formal processors absorb approximately 169 MT annually, sourced primarily from cooperatives and affiliated smallholders. This volume is subsequently allocated to three main destination segments:

- **Retail (certified formal outlets):** 109 MT, representing 36% of total national production, supplied to supermarkets, pharmacies, and registered retail outlets. Certified honey meets mandatory standards for packaging, hygiene, and quality control.
- **Semi-Formal Domestic Markets:** 15 MT, representing 5% of total national production, supplied to urban trading centres, kiosks, and local shops where certification enforcement is less strict. This segment allows some processed honey to reach markets between informal and fully formal channels.
- **Industrial and Institutional Use:** 45 MT, representing 15% of total national production, supplied in bulk to hotels, beverage producers, food manufacturers, and other institutional buyers. Industrial allocation is part of formal processor intake and does not constitute a separate production stream.

Processors in this category use modern equipment including settling tanks, fine filters, refractometers, automated bottling lines, and standardized packaging, ensuring compliance with food safety standards and consistent product quality.

Small-Scale and Cottage Processing

Smallholders and some cooperatives retain a portion of honey for local processing. This typically involves basic straining and gentle heating, producing honey for informal markets. Around 90 MT (30% of national production) flows through vendors and informal traders, reaching local urban markets, village shops, and unregulated cross-border trade to Zambia, South Africa, and Tanzania. Honey in this segment is largely unlabelled, lacks traceability, and quality is highly variable, with minimal price incentives for proper handling.

Cooperative-Level Processing

Several cooperatives operate small processing units with basic filtration and bottling facilities. This allows them to improve hygiene and moisture control, though volumes remain limited. Cooperatives retain a small portion of honey for internal sale (around 3% of their production, roughly 5–6 MT), while the majority, about 160 MT (53% of national production), is sold to formal offtakers. Cooperatives that process and sell internally include:

- Thumba Honey Producers & Marketing Cooperative (Ntchisi)
- Livingstonia Honey Cooperative (Rumphi)
- Maluso Honey Cooperative (Lilongwe)
- Nkhotakota Forest Honey Cooperative (Nkhotakota)

The retained honey is mostly supplied to local community outlets, schools, or small retail points.

Medium Commercial and Large Estate Processing

Medium Commercial processors and Large estates utilize industrial equipment such as settling tanks, fine filters, refractometers, and automated bottling lines. They produce high-quality, shelf-ready honey, including value-added products like kombucha and honey-based beverages. Estates aggregate all their production internally and supply primarily to industrial processing or formal markets. A small portion (4 MT, 1% of national production) is sold locally near the estates for informal consumption. Estates maintain strict traceability and quality control, ensuring compliance with food safety standards.

1.17.5 Market Channels

Formal Domestic Retail

Approximately 109 MT (36% of national production) of honey reaches MBS-certified retail outlets via formal offtakers. These outlets require certified honey, consistent quality, and proper packaging. Retailers include:

- Sana Supermarkets
- Chipiku Plus
- Shoprite
- Macdena
- Tutlas
- Food Lovers Market
- Kwithu Kitchen outlets
- Sanam
- Pharmacies
- City Supermarkets
- Other local retailers

Industrial processors and estates supply most of this certified honey, while cooperatives and formal offtakers provide additional volumes. Value-added products such as kombucha are also produced and sold in this channel.

Informal Local Markets and Vendors

Around 90 MT (30% of national production) is handled by informal vendors and traders, purchasing from cooperatives and smallholders. Honey in this segment is sold in:

- Village markets and trading centres

- Urban roadside stalls
- Local shops and kiosks

A further 50 MT (16% of national production) from formal offtakers enters local or semi-formal markets, where MBS certification is not strictly enforced. Informal markets are characterized by ungraded, unlabelled honey, inconsistent quality, and low traceability. A small portion of estate honey (4 MT, 1%) is also sold locally near estates. Some informal honey is exported unofficially to Zambia, South Africa, and Tanzania, though volumes are not recorded.

Export Market

Exports currently remain limited, with official statistics showing only about 22 kg exported. The export segment, both regional (SADC) and international, requires certified honey with consistent quality, traceability, and proper packaging (glass jars). Access to these markets is dominated by a few commercial processors and large estates that can meet rigorous food safety and MBS requirements. Many producers are restricted by certification costs and regulatory barriers.

Stakeholder Power Mapping

Stakeholder power mapping was undertaken to assess how authority, influence, and control over resources are distributed along the honey value chain, and how this distribution affects coordination, investment incentives, and value chain performance. Power is defined as the ability of an actor to influence prices, standards, market access, financing, and policy implementation.

Table 12: Stakeholder Power Mapping

Power/Interest	High Interest	Low Interest
High Power	• Commercial processors and packagers • Large estates producing honey as a by-product • **Large international NGOs/donor projects**	• Government institutions (Dept. of Animal Health, Malawi Bureau of Standards, Ministry of Trade) • Large retailers and supermarkets

Low Power	• Smallholder beekeepers • Cooperative beekeepers / Farmer Business Organisations • Local hive makers and artisans • **Local community-based NGOs/CBOs** (with direct engagement but limited influence)	• Financial institutions • Informal service providers

The stakeholder power–interest analysis reveals significant structural weaknesses in the governance and coordination of the honey value chain in Malawi.

Smallholder beekeepers and cooperatives are positioned in the low power, high interest quadrant. FGDs confirm that these actors carry the highest production, climate, and market risks but have minimal influence over pricing, quality requirements, or contractual arrangements. This situation is worsened by the absence of dedicated public extension services for apiculture. Government extension systems are largely focused on crops and livestock, leaving beekeepers without regular technical support on modern hive management, colony health, quality control, disease surveillance, and post-harvest handling. This gap contributes directly to low productivity and inconsistent quality.

Commercial processors and packagers fall within the high power, high interest quadrant. Their control over processing infrastructure, certification, branding, and access to formal and export markets gives them substantial influence over the value chain. While their interest in securing reliable volumes of quality honey is high, weak upstream organization and limited extension support increase transaction costs and restrict sourcing mainly to a few cooperatives or estates.

Government institutions, including the Department of Animal Health and Livestock, Malawi Bureau of Standards, and the Ministry of Trade, are classified as high power but low interest actors. Although they hold formal authority over regulation, certification, and import control, honey remains a low priority within sectoral programming. There is no fully operational regulatory framework governing honey aggregation and trading, enforcement of quality and import regulations is weak, and laboratory and inspection capacity remains limited.

The near absence of structured apiculture extension services represents a critical coordination failure. Without trained extension officers dedicated to honey, there is no systematic link between policy, standards, and producer practices. This undermines compliance with food safety requirements and constrains access to higher-value markets.

Financial institutions and informal traders remain low power, low interest actors. Financial institutions are discouraged by perceived risk, informality, and lack of traceability. Informal traders, while classified as low power institutionally, exert practical influence through liquidity provision and market access, often encouraging poor handling practices and adulteration that undermine the entire value chain.

Diagnosis of Governance and Coordination of the value chain

Fragmented Institutional Mandate

KIIs highlighted that governance of the honey sector has historically been weak due to the absence of a dedicated legal and regulatory framework. The transfer of responsibility for beekeeping from the Forest Department to the Department of Animal Health and Livestock (DAHL) has not yet translated into effective coordination or enforcement mechanisms. FGDs indicated that producers remain largely unaware of regulatory developments, while private actors operate without standardized national guidance. This fragmentation undermines trust, traceability, and sector-wide planning.

Weak Horizontal Coordination Among Producers

FGDs revealed that side-selling, inconsistent adherence to group rules, and limited collective marketing are common among beekeepers. While FBOs exist, their governance capacity remains weak, reducing their bargaining power with off-takers. The absence of functional aggregation centres further exacerbates this problem, leading to household-level storage, adulteration risks, and quality inconsistency. As a result, producers are unable to leverage economies of scale despite strong market demand.

Vertical Coordination Failures Between Producers and Buyers

KIIs with private off-takers (e.g. Kwithu Kitchen) indicated that the primary constraint is unreliable volumes and inconsistent quality, rather than lack of demand. FGDs confirmed that producers lack clear information on quality standards, contract terms, and price formation mechanisms. The limited use of formal contracts and absence of traceability systems increase transaction costs and discourage private investment in expanding production zones.

Limited Role of Finance and Risk-Sharing Mechanisms

Both FGDs and KIIs underscored that financial institutions remain largely absent from the honey value chain. The perceived risk of agriculture, combined with weak producer organization and lack of collateral, has resulted in minimal credit flows. Although some off-takers provide limited cooperative-level financing, this remains insufficient to support adoption of modern hives or expansion of production. The absence of blended finance or risk-sharing instruments represents a systemic governance gap.

Policy–Market Misalignment

Stakeholder consultations revealed a disconnect between policy intent and market realities. While national strategies (Vision 2063, MGDS III, Forest Policy, and National Charcoal Strategy) indirectly support apiculture, honey remains under-prioritized in implementation. The continued availability of imported honey despite new licensing regulations illustrates weak enforcement and coordination between trade policy and market surveillance institutions. This undermines domestic producers and distorts price signals

1.18 Domestic Market Dynamics

Malawi's domestic honey market is characterized by strong and growing demand, constrained by limited and inconsistent local supply. Formal buyers report significant unmet demand, while informal markets absorb the majority of locally produced honey. The market is segmented into formal retail, informal trade, and household consumption, each with distinct quality requirements, price points, and sourcing patterns.

1.18.1 Formal Buyer Demand

Primary data collected from key processors, retailers, and manufacturers between August and November 2025 reveal a substantial procurement gap in the formal honey market. While fourteen major buyers collectively require **316 metric tons (MT) annually**, actual purchases in 2025 reached only **167.3 MT**, representing a fulfillment rate of 52.9% (Table 13).

Table 13: Formal Honey Demand vs. Actual Purchases by Key Buyers (2025)

Buyer	Annual Demand (MT)	Actual Purchase (MT)	Gap (MT)
Kwithu Kitchen	105	40	65
M & B Company (Tamu Tamu)	60	30	30
Mzuzu Coffee	50	25	25
African Parks (Honey with Heart)	20	15	5
Peculiar Honey Bee Products	20	14	6
Honey Products Limited	10	5	5
Chunga Investments	10	7	3
Pure Uchi	8	5	3
Mapule General	15	11	4
Tilime Honey	5	4.5	0.5
Gala Farms	5	4	1
Greenwing Capital Ltd	3	2.8	0.2
Kirk AgriBusiness	3	2	1
Rosebill Shop	2	2	0
Total	**316**	**167.3**	**148.7**

Source: Field survey, 2025.

Interviews with Kwithu Kitchen revealed that the company supplements local supply with **8–9 MT of monthly imports from Tanzania** (USD 2.90/kg) to meet consumer demand. This pattern is common among formal buyers, who cite inconsistent quality, seasonal shortages, and inadequate volumes as key constraints to sourcing locally.

Interviews with Kwithu Kitchen confirmed that domestic production cannot meet formal market demand. During the 2024/2025 season, the company purchased 40 metric tons, against a requirement of 105 metric tons. To maintain consumer supply, Kwithu Kitchen imports 8–9 metric tons of honey per month from Tanzania, at approximately USD 2.90 per kg (MWK 5,000–5,100 per kg). The firm's experience underscores that strong consumer demand exists, but supply limitations constrain formal market fulfillment.

1.18.2 Informal Market Channel

Approximately 90 MT of honey annually flows through informal traders and vendors, who purchase directly from producers or cooperatives and sell in local markets, roadside stalls, and village shops. This channel operates with minimal quality control, often using unlabeled, repurposed containers. Informal trade also includes unrecorded cross-border sales to Zambia, Tanzania, and South Africa. While this channel provides immediate liquidity to producers, it offers lower prices and discourages quality improvement.

Interviews with honey vendors in major urban markets, including Lilongwe, indicated that traders routinely source honey from Tanzania to supplement local supplies, particularly during periods of domestic scarcity. Vendors reported that local honey is often seasonal and inconsistent in volume, leading to price volatility that consumers are unwilling to absorb. As a result, sourcing decisions are driven primarily by consumer demand for reliable, year-round availability at affordable prices, with imported honey sold alongside local honey in open markets, often without formal labeling or traceability.

1.18.3 Household Consumption Demand

Based on the 2019/20 Integrated Household Survey (IHS), only 1.57% of Malawian households reported consuming honey in the past week. Extrapolating to the national household count of approximately 4.7 million, an estimated 73,800 households consume honey. Using a conservative average consumption rate of 2.756 kg/household/year (derived from IHS unit conversion), total household demand is estimated at 203.4 MT annually.

1.18.4 Total Domestic Demand and Supply Gap

Malawi's total domestic honey demand is best measured through end-use household consumption, estimated at 203.4 MT per year based on the 2019/20 IHS. This figure captures all honey consumed by households, whether self-produced or purchased through formal retailers, processors, or informal vendors. Aggregating formal buyer demand (316 MT) and informal market flows (90 MT) alongside household consumption would result in double-counting, as most supply ultimately reaches the same consuming households.

Despite national production of 301.55 MT, Malawi faces a substantial supply deficit, estimated at approximately 307.85 MT per year when total demand across all channels is considered. This gap is partially met through imports, but persistent shortages and seasonal price volatility remain. To better distinguish household self-production from purchased honey, quantify overlaps between channels, and refine future demand estimates, a dedicated consumer market survey is strongly recommended.

1.18.5 Import Trends and Market Distortions

Despite legal restrictions on honey importation under the *Control of Goods (Import and Export) (Commerce) (Prohibition) Order, 2025*, Malawi continues to import significant quantities of honey to meet unmet domestic demand. Imports are largely driven by supply shortfalls in the formal and informal markets, where domestic production is insufficient to satisfy consumer expectations for availability, quality, and price stability.

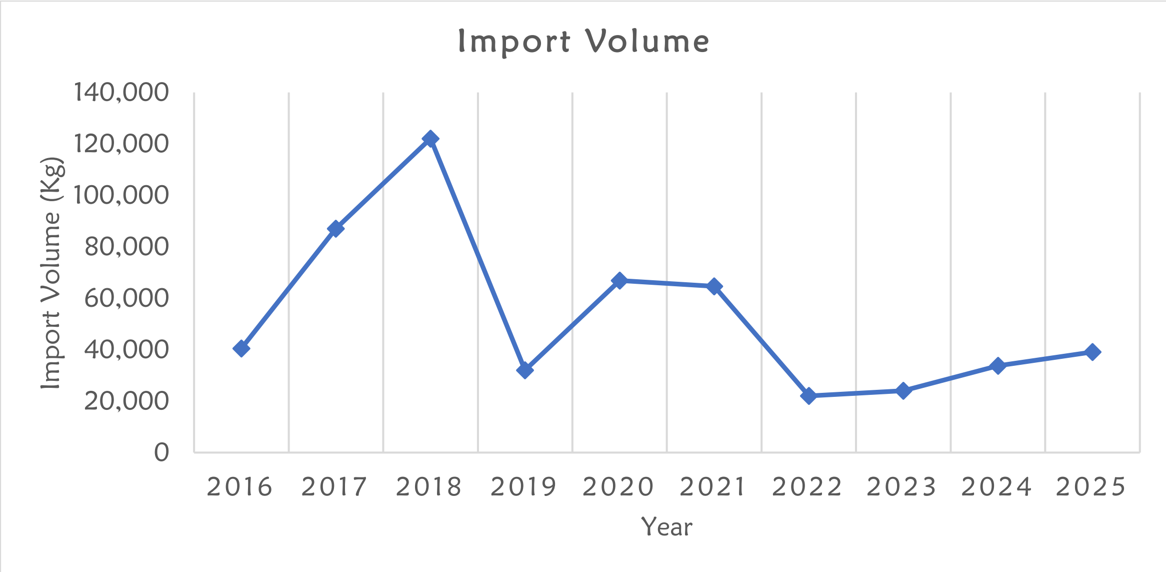
Analysis of import trends from 2016 to 2025 shows a gradual shift in source markets, reflecting both price competitiveness and regional trade efficiencies. While South Africa historically dominated Malawi's honey imports, Tanzania has emerged as the primary supplier, accounting for 86% of imports in 2025. Other sources include India and South Africa, but their share has declined in recent years.

The growing reliance on imported honey highlights three key issues for policy:

1. **Persistent domestic supply gaps:** Even with formal protections, domestic production cannot meet consumer and industrial demand, leading buyers and vendors to source from regional markets.
2. **Price pressures and market displacement:** Imported honey, often cheaper and more consistent in quality, competes directly with local honey, limiting incentives for investment in domestic production.
3. **Policy enforcement limitations:** Prohibition alone cannot suppress imports; informal cross-border trade and retail-level substitution ensure that consumer demand continues to drive supply decisions.

From a policy perspective, this underscores that Malawi's honey market clears at the consumer level, not the producer level. Any intervention aimed at improving the domestic honey sector must address production, aggregation, quality, and market linkages to reduce import dependence while protecting consumers.

Figure 3: Honey Imports into Malawi (2016–2025)



Source: MRA & NSO, 2025

Figure 3 illustrates a persistent reliance on imported honey to meet domestic needs, with total imports exceeding 531,000 kg over the last decade and valued at over MWK 1.1 billion. The rise of Tanzania as the dominant supplier reflects both price competitiveness and regional trade linkages, while imports from India and South Africa remain secondary. This trend underscores the structural inadequacy of domestic supply and highlights the need for interventions that increase production, improve aggregation, and enhance market efficiency, rather than relying solely on import restrictions.

1.19 Export Market and Potential

The export of natural honey from Malawi is fully permitted and does not require a specific licence, unlike certain commodities such as groundnuts, pigeon peas, or unprocessed cane sugar. Exporters must comply with standard customs procedures administered by the Malawi Revenue Authority (MRA) and with sanitary and phytosanitary (SPS) requirements imposed by importing countries. Honey is therefore not subject to restrictive export controls.

While the import ban supports domestic production, its impact depends on the capacity of local actors to scale production, maintain quality, and ensure consistent supply. Without complementary investments in aggregation, quality assurance, and market coordination, protection alone is unlikely to stimulate sustainable growth.

Despite a permissive export regime, Malawi's honey exports remain limited. Stakeholders indicate that the main constraints are post-production compliance issues, including the lack of internationally recognised certification, weak traceability systems, inconsistent quality, and limited access to accredited testing facilities. These challenges particularly restrict access to high-value markets, such as the European Union, despite confirmed buyer interest.

Malawi's honey exports were negligible between 1994 and 2002, reflecting limited production and a nascent sector. Exports formally began in 2003, with just under 10 tonnes shipped, generating approximately MWK 250,000. Export activity remained sporadic in the following years, with volumes and revenue fluctuating. A period of notable growth occurred between 2012 and 2015, peaking at over 23 tonnes in 2013, earning MWK 42.5 million. This phase demonstrates that international and regional markets were willing to absorb Malawian honey when supply, aggregation, and quality standards aligned.

Following 2015, export volumes and values declined sharply, with most years recording less than 5 tonnes and negligible revenues by 2024–2025. Exports were directed to a mix of regional and international destinations. Key markets included South Africa, Zimbabwe, Mozambique, Kenya, Japan, Taiwan, and China, with some years showing highly concentrated trade flows to single countries. These trends highlight that Malawi's export performance is supply-driven, constrained by limited production, fragmented aggregation, inconsistent quality, and gaps in certification and traceability. Strengthening production, quality assurance, aggregation, and certification systems is essential to stabilise exports, increase revenue, and expand access to both regional and international markets.

Figure 4: Natural Honey Export Volumes from Malawi (1994–2025)

Source: MRA & NSO, 2025

1.19.1 Estimated Regional and International Demand for Honey

Consultations with the Malawi Investment and Trade Centre (MITC) and local vendors indicate substantial estimated demand for Malawian honey in both regional and international markets. Buyers from the Netherlands and Germany have expressed interest in sourcing honey, reflecting opportunities in high-value European markets, contingent on meeting quality, traceability, and certification standards.

At the regional level, vendor consultations in Lilongwe revealed that locally produced honey is already being exported informally or semi-formally to South Africa and neighbouring countries. Although small in scale, these flows demonstrate active regional demand and highlight opportunities for Malawian producers to expand into nearby markets while formal export systems are strengthened.

Internationally, countries such as Japan and Taiwan have shown significant interest, suggesting potential for further diversification of export destinations. The data also indicate that demand is stronger for residue-free, high-quality honey, which aligns with Malawi's comparative advantage in producing forest-based honey.

Table 14: Indicative Regional and International Demand for Honey

Country	Estimated Demand (Metric Tonnes)
Japan	400
South Africa	300
Netherlands	-
Germany	-
Taiwan	-

Source: MITC

1.19.2 Competitor Benchmarking – Regional and Global

Malawi's honey sector operates in a dynamic regional and international market, where price, quality, and market positioning determine competitiveness. Wholesale honey prices across selected countries (late 2025) provide insight into Malawi's relative advantage.

Table 15: Competitor Benchmarking

Country	Price Range (USD/kg)	Notes
Malawi	9.61 – 13.73	Forest/organic honey; premium niche.
Tanzania	1.53 – 2.86	Bulk export-oriented; lower-priced.
Zambia	6.71 – 14.77	Forest honey premium; moderate volume.
Mozambique	2.35 – 3.51	Bulk natural honey.

Zimbabwe	5.43 – 10.18	Bulk natural honey.
Kenya	6.85 – 20.55	Premium/organic; bulk exports ~$3–7.
South Africa	0.68 – 1.37	Bulk natural; premium $6–9.
US	3.64 – 6.61	Extracted, unprocessed honey; USDA National Honey Report, Oct 2025.
China	2.35 – 3.70	Bulk natural honey; major exporter.
UK	4.73 – 16.23	Bulk and premium imported honey.
New Zealand	20–100+	Premium Manuka honey; MGO-rated.

Sources: *National Honey Report*, United States Agricultural Marketing Service, Volume XLV – Number 11, November 28, 2025; Selina Wamucii, 2025

Malawi's wholesale honey prices ($9.61–13.73/kg) are higher than most regional competitors, reflecting the premium quality of forest and organic honey. This pricing positions Malawi well for niche and high-value markets, both regionally and internationally, especially where consumers value natural, traceable, and sustainably produced honey. Regional competitors such as Tanzania, Zambia, Kenya, and South Africa produce larger volumes at lower prices, demonstrating that Malawi's honey is less competitive in bulk commodity markets, even domestically.

Globally, premium honey (e.g., New Zealand Manuka at $50–100+/kg) illustrates the value of certification, traceability, and branding, highlighting opportunities for Malawi to differentiate its honey further. To strengthen its position, Malawi should focus on quality assurance, certification, aggregation, and market linkages, leveraging its forest and organic honey niche while gradually scaling volumes to meet premium market demand.

COST-BENEFIT ANALYSIS (CBA)

A discounted cost–benefit analysis was undertaken to assess the commercial viability of establishing a 50-hive beekeeping enterprise using two alternative improved technologies, Top-bar and Langstroth hives, over a 10-year investment horizon. The analysis was designed to reflect realistic small-to-medium scale commercial conditions in Malawi and to support evidence-based investment and policy decisions.

The CBA applies a 5 percent social discount rate, consistent with medium-term agricultural investment appraisal in developing economies. The baseline farm-gate honey price was set at MWK 6,500 per kilogram, with the following dynamic assumptions applied over the project life:

- Honey prices increase by 10% per year
- Operating costs increase by 15% per year
- Productivity increases by 12% annually for Langstroth hives and 10% for Top-bar hives

Baseline productivity was estimated at 10.75 kg per Langstroth hive and 9.23 kg per Top-bar hive, translating into annual production of 536.5 kg and 461.5 kg, respectively, in Year 0.

These assumptions reflect empirical evidence that modern hive technologies experience rising productivity as colonies stabilise, beekeepers gain management experience, and market access expands. For example, Amulen et al. (2019) modelled a 15 percent annual increase in honey yields during years 3 to 6 in a 10-year cost–benefit analysis of beekeeping enterprises in Uganda, attributing growth to improved colony establishment, routine hive management, and reduced absconding. Similarly, Tarekegn and Ayele (2020) found that beekeeper experience, education, cooperative membership, and extension access significantly improved technical efficiency among adopters of improved box hives in Ethiopia. Evidence from Tanzania shows that improved hives such as Top-bar, box, and Langstroth consistently generate higher yields than traditional log hives while remaining economically viable, supporting the use of moderate productivity growth assumptions in beekeeping cost–benefit modelling (Kuboja et al., 2016).

Investment and Operating Cost Structure

The initial capital outlay for Langstroth hives is substantially higher than for Top-bar hives due to the higher unit cost of modern frames, supers, and extraction-compatible components (Table 16).

- Total project cost (Year 0):
    - Langstroth system: MWK 15.21 million

- Top-bar system: MWK 12.18 million

While Langstroth hives require approximately 25% more upfront capital, this difference is driven almost entirely by hive acquisition costs; all protective gear, honey handling equipment, and operational infrastructure are identical across the two systems. Annual operating costs (fuel, utilities, and transport) are therefore the same for both technologies in real terms.

Table 16: Investment Cost Analysis for Top-Bar and Langstroth Hive Operations

	Cost Tables				
				Total Costs (MWK)	
	Cost Component	Unit Price	QTY	Top Bar	Langstroth
Initial Investment	Hive acquisition – Top-bar hives	104,401.50	50	5,220,075.00	
	Hive acquisition – Langstroth hives	165,000.00	50		8,250,000.00
	Protective clothing – bee suit	164,059.50	10	1,640,595.00	1,640,595.00
	Protective clothing – gloves	27,840.40	10	278,404.00	278,404.00
	Protective clothing – boots	45,000.00	30	1,350,000.00	1,350,000.00
	Beekeeping equipment – smoker	59,445.85	3	178,337.55	178,337.55
	Beekeeping equipment – pales	11,211.60	20	224,232.00	224,232.00
	Beekeeping equipment – bee brushes	9,445.85	5	47,229.25	47,229.25
	Honey extraction equipment – sieve	37,783.40	5	188,917.00	188,917.00
	Honey extraction equipment – knife	10,500.00	2	21,000.00	21,000.00
	Hive opener	10,000.00	5	50,000.00	50,000.00
	Uncapping rox	15,000.00	5	75,000.00	75,000.00
	Double stand	38,000.00	3	114,000.00	114,000.00
	Jags	4,000.00	20	80,000.00	80,000.00
	Sub-Total			9,467,789.80	12,497,714.80
Operating Costs	Equipment maintenance and repair				
	Replenishment of containers				
	Fuel for operations	828,105.30		828,105.30	828,105.30
	Utilities – water	520,000.00		520,000.00	520,000.00
	Utilities – electricity	640,000.00		640,000.00	640,000.00
	Transportation of honey to markets/ collection centers	725,000.00		725,000.00	725,000.00
	Sub-total	2,713,105.30		2,713,105.30	2,713,105.30
	Total Project Cost			12,180,895.10	15,210,820.10

Source: Field Survey, 2025

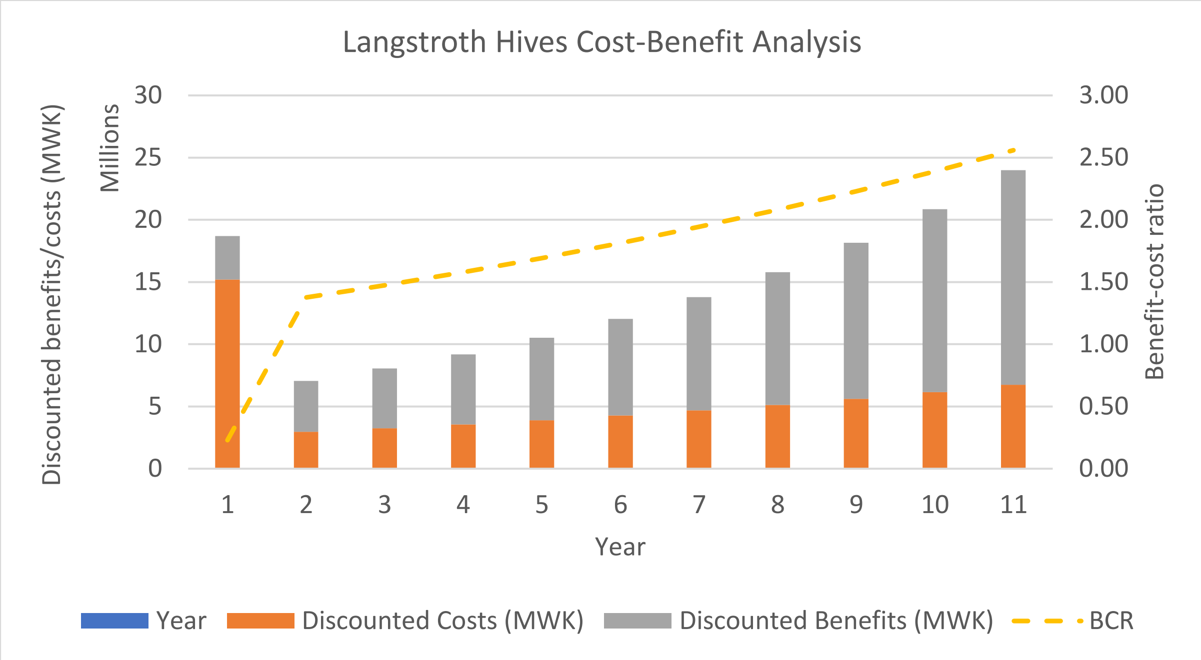
The CBA results in Table 17 show that while both hive systems generate positive economic returns over the 10-year horizon, the Langstroth system delivers significantly higher productivity and financial performance. This distinction has important implications for policies aimed at stimulating rural income generation, climate-smart agriculture, and diversification of household livelihoods.

The Net Present Value (NPV) for the Langstroth system was estimated at approximately MWK 35.1 million, compared to MWK 15.5 million for the Top-bar system. Similarly, the Benefit–Cost Ratio (BCR) was higher for Langstroth (2.56) than for Top-bar (1.84), indicating superior economic returns per Malawi kwacha invested. Although both systems demonstrated financial viability (BCR > 1), Langstroth hives provide a more profitable option under the assumptions applied.

Table 17: Cost-Benefit Analysis for Langstroth and Top-Bar Hives Operations

Langstroth Hives Cost-Benefit Analysis											
Year	Honey Output (kg)	Unit Price (MWK)	Honey Revenue (MWK)	Operating Costs (MWK)	Initial Investment Costs (MWK)	Net Costs (MWK)	Discount Factor	Discounted Costs (MWK)	Discounted Benefits (MWK)	Net Present Value (MWK)	BCR
0	536.50	6,500.00	3,487,250.00	2,713,105.30	12,497,714.80	15,210,820.10	1.00	15,210,820.10	3,487,250.00	-11,723,570.10	0.23
1	600.88	7,150.00	4,296,292.00	3,120,071.10	0	3,120,071.10	1.05	2,971,496.28	4,091,706.67	1,120,210.39	1.38
2	672.99	7,865.00	5,293,031.74	3,588,081.76	0	3,588,081.76	1.10	3,254,495.93	4,800,935.82	1,546,439.90	1.48
3	753.74	8,651.50	6,521,015.11	4,126,294.02	0	4,126,294.02	1.16	3,564,447.92	5,633,098.03	2,068,650.11	1.58
4	844.19	9,516.65	8,033,890.61	4,745,238.13	0	4,745,238.13	1.22	3,903,919.15	6,609,501.69	2,705,582.54	1.69
5	945.50	10,468.32	9,897,753.24	5,457,023.85	0	5,457,023.85	1.28	4,275,720.97	7,755,148.65	3,479,427.68	1.81
6	1,058.96	11,515.15	12,194,031.99	6,275,577.42	0	6,275,577.42	1.34	4,682,932.50	9,099,374.42	4,416,441.92	1.94
7	1,186.03	12,666.66	15,023,047.41	7,216,914.04	0	7,216,914.04	1.41	5,128,926.07	10,676,599.31	5,547,673.25	2.08
8	1,328.35	13,933.33	18,508,394.41	8,299,451.14	0	8,299,451.14	1.48	5,617,395.22	12,527,209.86	6,909,814.65	2.23
9	1,487.76	15,326.66	22,802,341.91	9,544,368.81	0	9,544,368.81	1.55	6,152,385.24	14,698,592.91	8,546,207.67	2.39
10	1,666.29	16,859.33	28,092,485.23	10,976,024.13	0	10,976,024.13	1.63	6,738,326.69	17,246,349.01	10,508,022.32	2.56
							Net NPV			35,124,900.31	

Top - Bar Hives Cost-Benefit Analysis											
Year	Honey Output (kg)	Unit Price	Honey Revenue (MWK)	Operating Costs (MWK)	Initial Investment Costs (MWK)	Net Costs (MWK)	Discount Factor	Discounted Costs (MWK)	Discounted Benefits (MWK)	Present Value (MWK)	BCR
0	461.50	6,500.00	2,999,750.00	2,713,105.30	9,467,789.80	12,180,895.10	1.00	12,180,895.10	2,999,750.00	-9,181,145.10	0.25
1	507.65	7,150.00	3,629,697.50	3,120,071.10	0	3,120,071.10	1.05	2,971,496.28	3,456,854.76	485,358.48	1.16
2	558.42	7,865.00	4,391,933.98	3,588,081.76	0	3,588,081.76	1.10	3,254,495.93	3,983,613.58	729,117.66	1.22
3	614.26	8,651.50	5,314,240.11	4,126,294.02	0	4,126,294.02	1.16	3,564,447.92	4,590,640.41	1,026,192.49	1.29
4	675.68	9,516.65	6,430,230.53	4,745,238.13	0	4,745,238.13	1.22	3,903,919.15	5,290,166.57	1,386,247.42	1.36
5	743.25	10,468.32	7,780,578.94	5,457,023.85	0	5,457,023.85	1.28	4,275,720.97	6,096,287.19	1,820,566.22	1.43
6	817.58	11,515.15	9,414,500.52	6,275,577.42	0	6,275,577.42	1.34	4,682,932.50	7,025,245.24	2,342,312.75	1.50
7	899.33	12,666.66	11,391,545.63	7,216,914.04	0	7,216,914.04	1.41	5,128,926.07	8,095,758.80	2,966,832.74	1.58
8	989.27	13,933.33	13,783,770.22	8,299,451.14	0	8,299,451.14	1.48	5,617,395.22	9,329,398.24	3,712,003.02	1.66
9	1,088.19	15,326.66	16,678,361.96	9,544,368.81	0	9,544,368.81	1.55	6,152,385.24	10,751,020.83	4,598,635.59	1.75
10	1,197.01	16,859.33	20,180,817.97	10,976,024.13	0	10,976,024.13	1.63	6,738,326.69	12,389,271.62	5,650,944.93	1.84
							Net NPV			15,537,066.21	



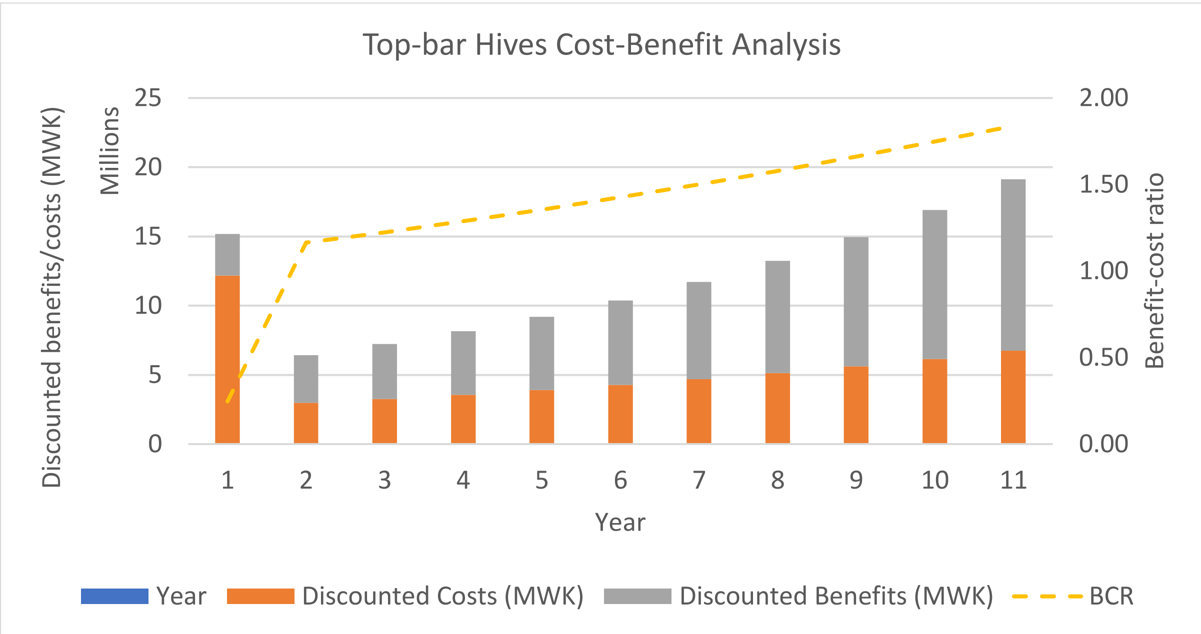


Figure 5: The comparison of the BCR for Top-bar and Langstroth hives over the 10-year period.

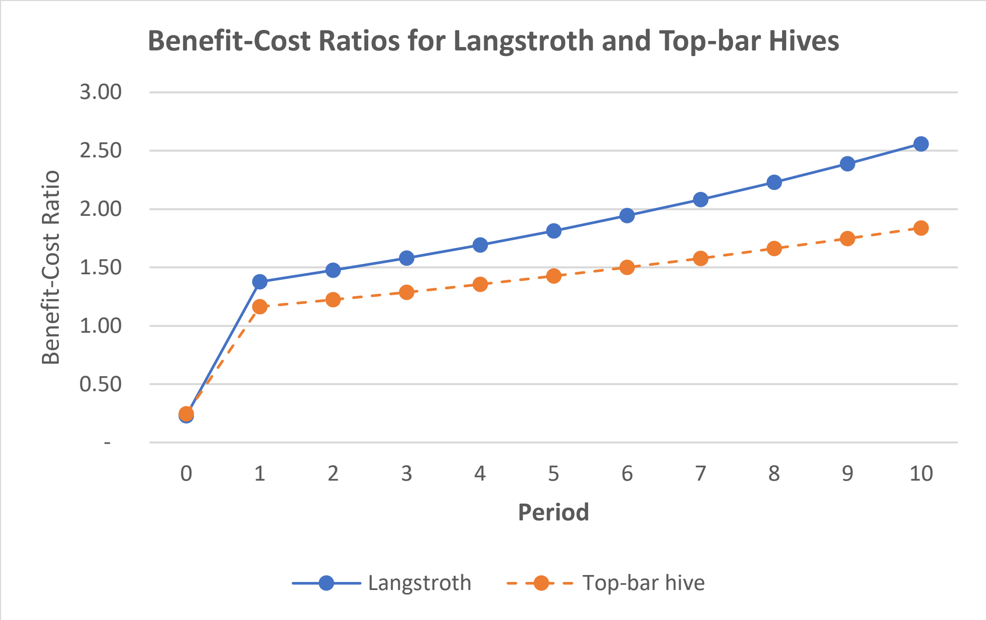


Figure 6: BCR comparison for Top-bar and Langstroth hives over a 10-year period

Figures 7 (Langstroth) and 8 (Top-bar) provide a sensitivity analysis of the production gains based on changes in the discount rate to 3% (decrease) and 8% (increase). The results show that changes in the discount rate does not distort the positive gains of the two hive technologies.

Figure 7: Sensitivity Analysis for Langstroth Hives

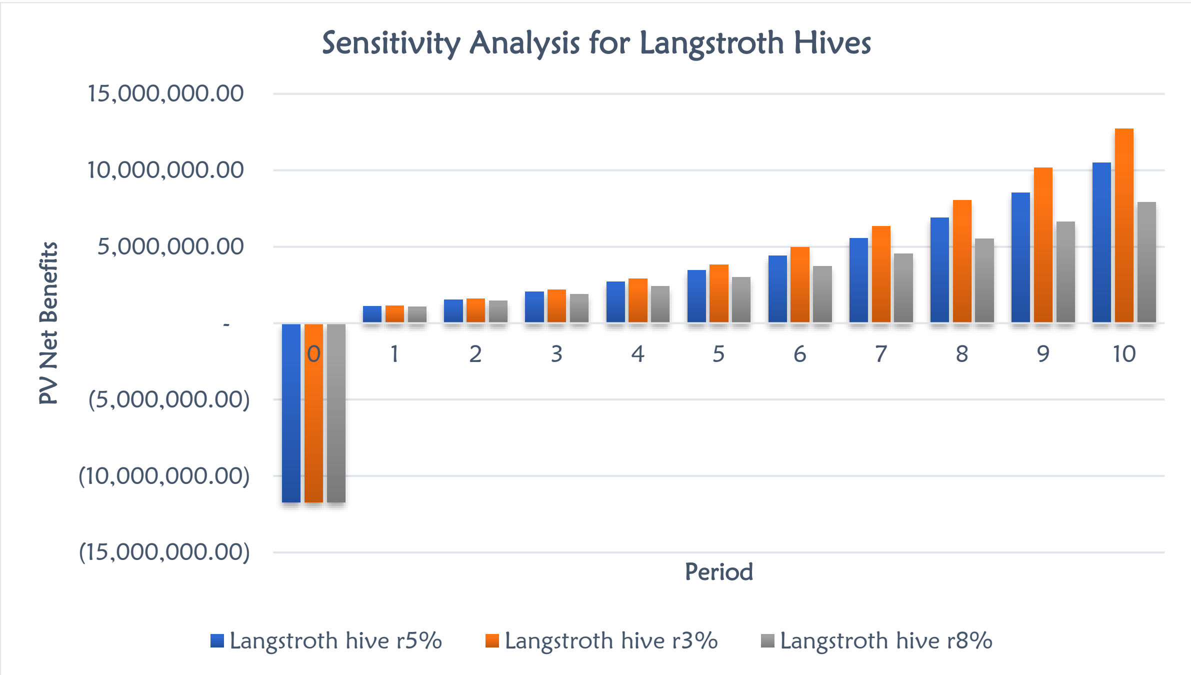
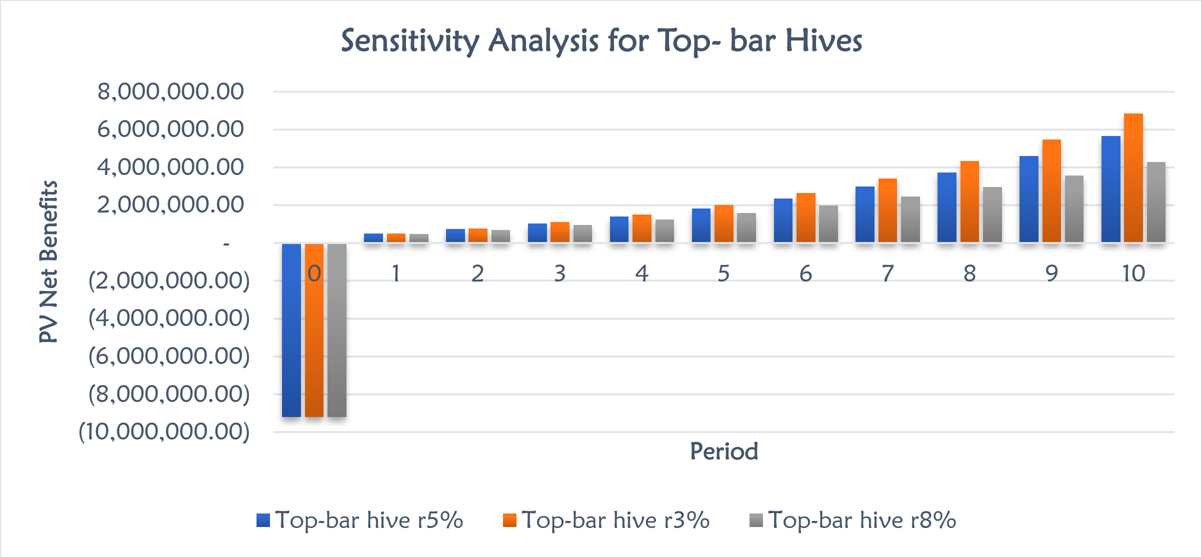


Figure 8: Sensitivity Analysis for Top- bar Hives



GENDER, YOUTH, AND DISABILITY INCLUSION

Beekeeping is vital to Malawi's economy and food security, yet participation remains unequal across gender, age, and disability. This report assesses inclusivity in the sector by analyzing the engagement of women, youth, and persons with disabilities across production, processing, marketing, and governance. Using survey data, cooperative records, and focus groups, it evaluates access to resources, decision-making, and barriers to involvement. The findings aim to guide policies that promote equity and strengthen the sustainability of Malawi's honey industry.

1.20 Comparative Participation Across Districts

Participation patterns across the six surveyed districts reveal clear differences in gender, youth, and disability inclusion within the beekeeping sector. While men constitute the majority of participants in most districts, women's participation remains substantial and, in some cases, exceeds that of men. Youth and persons with disabilities (PWDs) demonstrate more uneven levels of engagement, pointing to district-specific inclusion dynamics.

Table 18: Participation Rates by Demographic Group and District

District	Male %	Female %	Youth %	PWD %
Rumphi	48.0	52.0	14.4	17.3
Nkhata Bay	64.4	35.6	17.2	19.5
Mzimba	61.4	38.6	8.8	15.8
Salima	63.5	36.5	48.1	5.8
Ntchisi	72.7	27.3	18.2	27.3
Zomba	66.7	33.3	6.7	13.3
OVERALL	58.7	41.3	18.6	16.3

Male beekeepers dominate primary roles at 58.7 percent, while women account for 41.3 percent, with Rumphi standing out as the only district where women constitute a majority of primary beekeepers (52%). Youth representation among households averages 18.6 percent nationally, but there is significant variation: Salima exhibits exceptional youth presence at 48.1 percent, nearly three times the national average, whereas Zomba and Mzimba record the lowest at 6.7 percent and 8.8 percent respectively. Participation of youth in beekeeping activities is higher than mere representation suggests, with Ntchisi achieving the highest engagement rate at 81.8 percent despite having only 18.2 percent youth in the sample. PWD inclusion also varies widely, ranging from just 5.8 percent in Salima to 27.3 percent in Ntchisi, reflecting district-specific accessibility practices. These patterns indicate that while male dominance persists in formal beekeeper roles, women and youth actively participate across all districts, and smaller districts like Ntchisi and Zomba demonstrate strong inclusion and cooperative engagement. The data suggest that intentional policies and programs, rather than scale alone, drive equitable participation, highlighting opportunities for scaling best practices from high-performing districts to improve gender, youth, and PWD inclusion nationally.

1.21 Functional Participation across the Value Chain

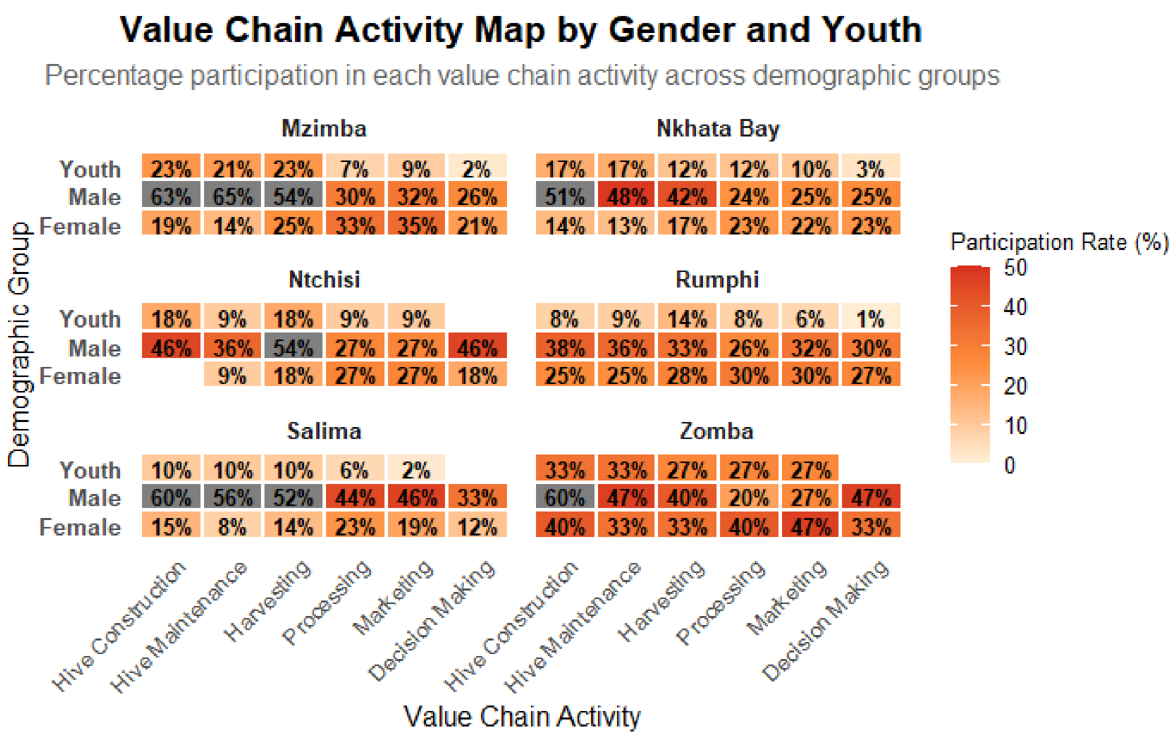


Figure 9: Value Chain Activity Heatmap by Gender and Youth

The overall participation rates presented figure 9 gain greater depth when examined alongside the specific activities illustrated in the heatmap. Men form the majority of participants in most districts and dominate the front-end stages of the value chain, particularly hive construction and maintenance. In contrast, Rumphi stands out: women constitute the majority of total participants (52 percent) and maintain substantial involvement in processing and marketing (approximately 30 percent). This balanced engagement across the chain suggests that targeted programme support can transform beekeeping from a predominantly male-led production activity into a more gender-equitable commercial enterprise.

Youth participation often concentrates in labour-intensive tasks such as harvesting and hive construction, but declines markedly in processing, marketing, and decision-making roles. Zomba provides a striking exception. Despite recording the lowest overall youth participation (6.7 percent), women active in the district achieve the highest participation rates in marketing (47 percent) and processing (40 percent) across the entire sample, frequently surpassing men in these value-adding stages. In non-TRADE districts such as Mzimba and Salima, female involvement drops more sharply as the product advances toward the market.

Men sustain a consistent presence throughout the value chain. Nevertheless, the elevated female participation in processing and marketing particularly evident in districts with targeted support and in Zomba positions women as key contributors to value addition. Progress in the sector depends on moving beyond simply increasing participation numbers toward building technical capacity, asset ownership, and enterprise control. Only through these measures can women and youth engage meaningfully in the higher-growth segments of the honey value chain.

1.22 Gendered and Generational Division of Labor

The allocation of labor across the beekeeping value chain reveals a clear divide between front-end production and back-end processing and marketing. Men overwhelmingly dominate the foundational stages, performing 71.5 percent of hive construction and 73.2 percent of hive placement and maintenance. This concentration in asset creation acts as a significant entry barrier for women and persons with disabilities, as these activities are often viewed through the lens of physical intensity or a perceived technical skills gap.

Women perform nearly half of post-harvest handling and filtering (49.5%) and drive household liquidity through local marketing (46.4%), yet they are largely excluded from technical decisions regarding hive health and placement. Youth participation is relatively high in one-off manual tasks in some districts, but lower in ongoing maintenance, suggesting limited integration into long-term apiary management.

This division creates a critical quality bottleneck. Women are responsible for post-harvest handling but have limited access to formal training (25.6% overall) or extension services (4% for women compared to 26% for men) required to optimise those processes. In districts with targeted support, women show more consistent participation levels across the chain, indicating that when technical barriers are addressed, labor distribution becomes more equitable.

Table 19: Gendered Distribution of Labor Across the Beekeeping Value Chain

Value Chain Activity	% Performed by Men	% Performed by Women
Production Assets (Hive Construction/Ownership)	71.5	28.5
Hive Placement & Maintenance	73.2	26.8
Harvesting (Honey and Wax)	65.6	34.4
Post-Harvest Handling & Filtering	50.5	49.5
Local Marketing/Retailing	53.6	46.4

1.23 Comparative Access to Productive Assets and Services

Access to and control over resources form the foundation of agency within the beekeeping value chain. Although joint management is a common reporting pattern, men consistently exercise higher levels of sole ownership and strategic influence. This disparity is most pronounced in hive ownership, where men are 1.5 times more likely than women to be sole owners (33.3% compared with 22.4%). Youth ownership is particularly limited, standing at only 2.3%, which highlights systemic barriers that prevent younger producers from accumulating productive assets.

A significant gap also exists in service delivery. Men report access to training and extension services at 26%, whereas women report only 4%. This limited access restricts women's ability to progress beyond labour roles into asset management and technical decision-making, as they are frequently excluded from the knowledge required for hive management, colony health, and quality improvement.

Table 20: Access to and Control Over Productive Assets

Asset/Service Area	Men Sole (%)	Women Sole (%)	Joint (%)
Asset Ownership (Hives)	33.3	22.4	51.7
Credit Access	2.5	5.6	0
Service Access (Training/Ext)	26	4	40

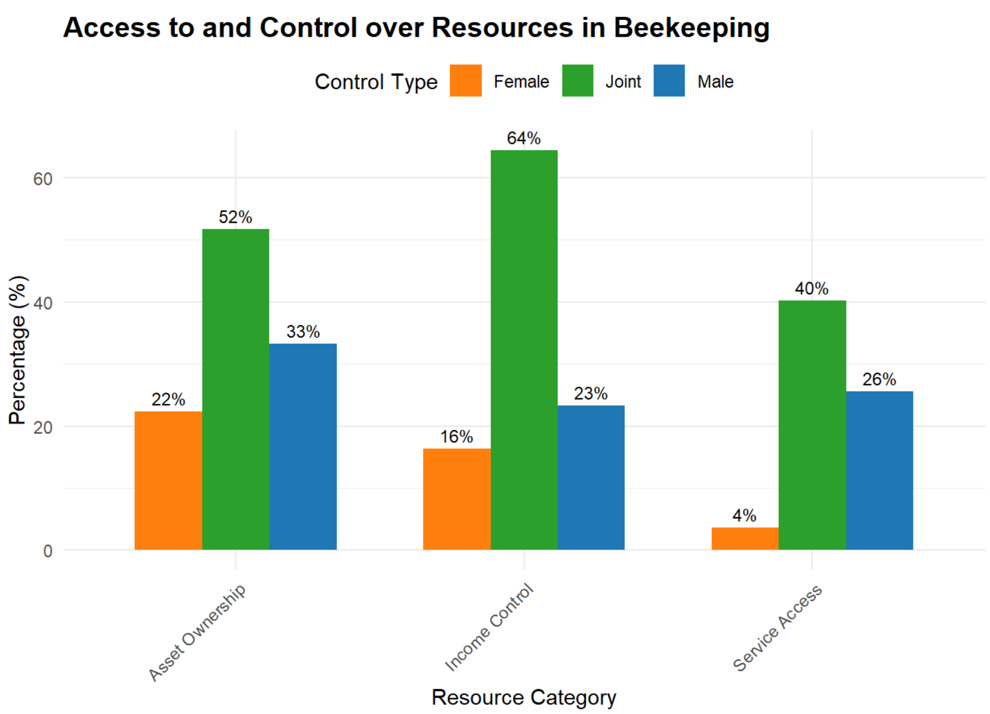


Figure 10: Access and Control Over Resources In Beekeeping

1.24 Control Over Income and Decision-Making

Control over the financial returns of beekeeping reflects socio-cultural norms that often privilege male authority in household financial decisions. While joint decision-making dominates (64.4 percent), men retain significantly greater sole control over honey sales income (23.3 percent) compared to women (16.4 percent), resulting in a gender income-control gap of nearly 7 percentage points.

The data reveals a "Credit Irony": women report higher independent access to credit (5.6 percent) than men (2.5 percent), potentially due to their perceived trustworthiness in local lending groups. However, they remain marginalized from the final allocation of honey income. In districts like Salima, women’s decision-making participation is as low as 12 percent, despite their high involvement in processing. By contrast, in Zomba, women participate in marketing at 47 percent and decision-making at 33 percent, showing that higher marketing involvement, driven by local cultural differences, correlates with stronger financial agency.

Table 21: Gendered Control of Income and Strategic Decisions

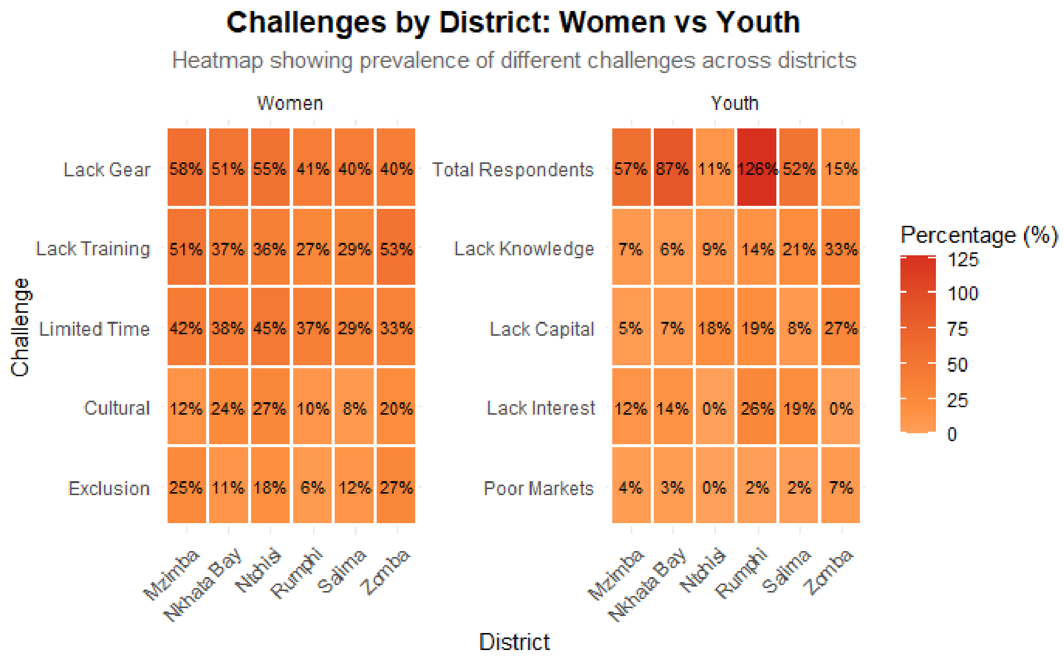
Decision Area	Men Sole (%)	Women Sole (%)	Joint (%)
Decision: Selling Honey	29.9	22.7	54.0
Control: Sales Income	23.3	16.4	64.4
Decision: Use of Income	23.0	20.7	61.2

In districts supported by targeted interventions, the gap in selling decisions is narrower because women are integrated into the marketing and processing stages more effectively, ensuring their labour translates into greater influence at the decision-making table. These variations highlight that while joint decision-making provides a positive baseline, true empowerment requires closing the gap in sole agency. For women and youth, the current pattern shows they are often the engine of the sector through labour, but are not yet the drivers of the financial outcomes.

1.25 Comparative Constraints Facing Women and Youth

The challenges identified in the beekeeping sector reveal a clear distinction between the practical barriers faced by women and the motivational or financial hurdles faced by youth. Women most frequently report lack of protective gear (46.6 percent), limited time (36.8 percent), and restricted access to training (35.1 percent). These practical and socio-cultural factors directly hinder women's ability to participate in technical or time-intensive beekeeping activities. Cultural restrictions (14.7 percent) and exclusion from decision-making (12.6 percent) represent additional structural barriers that limit women's agency and capacity to advance into leadership roles within the value chain.

Figure 11: Challenges Faced by Women and Youth in Beekeeping



For youth, the primary barrier is a lack of interest (17.8%), which suggests that beekeeping is often perceived as an unattractive or low-reward enterprise. This is compounded by knowledge gaps (12.6%) and insufficient capital (12.4%), which prevent younger individuals from investing in the necessary assets to establish their own apiaries. While poor market access is reported at a lower rate (2.6%), it remains a hurdle for those youth who are motivated to participate but lack the connections to profitable trade channels.

The data shows notable variations in how these challenges manifest across the surveyed districts. In Nkhata Bay and Rumphi, there is a more consistent level of participation across all stages of the beekeeping value chain, with women showing higher involvement in technical roles like hive maintenance compared to other districts. This aligns with findings in the activity heatmap that show narrower participation gaps in the Northern region. In contrast, districts in the Central region, such as Salima and Ntchisi, show higher intensities of cultural constraints and exclusion from decision-making. This correlates with lower female engagement in the marketing and strategic selling of honey in these areas. However, Zomba in the Southern region presents a unique finding where women have a dominant presence in marketing (47%) despite the broader challenges identified. These district-level differences suggest that while constraints like gear and capital are universal, the impact of socio-cultural barriers on decision-making is highly localized.

1.26 Time Poverty

Beekeeping demands significant weekly labor. Average time dedicated to honey production is 44 hours per week, with women contributing slightly more (45.7 hours) than men (42.8 hours). This highlights the dual burden of production and household responsibilities, which may limit women's engagement in other income-generating opportunities.

The honey value chain in Malawi is uniquely tied to the health of the country's ecosystems. Unlike many agricultural commodities, honey production relies on standing forests and diverse floral resources, providing a natural incentive for conservation. The study employed surveys, focus group discussions (FGDs), and key informant interviews (KIIs) with beekeepers, cooperatives, government officials, and other stakeholders. This section evaluates how current beekeeping practices either support or threaten these environmental foundations.

1.27 Adoption of Sustainable Beekeeping Practices

1.27.1 Hive Types and Usage Patterns

Hive technology serves as a key determinant of both productivity and environmental performance within the honey value chain. Modern hive systems, particularly Top Bar and Langstroth designs, enable controlled colony management, non-destructive harvesting, and repeated use without damaging surrounding vegetation. These attributes significantly reduce pressure on forest resources compared to traditional hives, which are often constructed from felled trees and managed through practices that disturb colonies and surrounding habitats.

Figure 12: Distribution of Hive Types Used by Beekeepers

Hive Type	Utilization (%)
Top Bar	54.74
Traditional/Local	35.38
Langstroth	9.88

The dominance of Top Bar hives reflects the cumulative impact of donor-supported projects and non-governmental interventions over the past decade. However, the continued reliance on traditional hives by more than one-third of beekeepers signals a structural sustainability gap. This persistence stems not from preference but from systemic barriers: limited access to finance, inadequate technical skills, weak extension coverage, and the absence of affordable hive manufacturing and distribution systems.

Without deliberate policy intervention, the honey value chain risks maintaining a dual production system where environmentally harmful practices coexist with improved technologies, thereby diluting conservation gains and undermining the sector's long-term sustainability.

1.27.2 Honey Harvesting Methods: Fire versus Smokers

Harvesting methods have direct and immediate implications for forest safety and biodiversity conservation. The use of open fire during harvesting substantially increases the risk of uncontrolled bush fires, particularly in forest reserves and woodland areas during the dry season. Fire-related damage not only destroys bee forage but also undermines the ecological foundation upon which the honey value chain depends.

Figure 13: Harvesting Tools Used in Honey Collection

Harvesting Tool Used	Percentage (%)
Smoker	68.9
Traditional open fire/smoke	27.7

The relatively high adoption of smokers (68.9%) reflects the impact of donor-supported programs and NGO interventions that have provided this equipment to beekeepers over recent years. However, the continued use of open fire by nearly one-third of respondents represents a significant environmental and regulatory concern. This finding points to persistent gaps in equipment access, enforcement of fire management regulations, and extension messaging. The environmental cost extends beyond individual beekeepers, as fire outbreaks affect shared forest landscapes and public conservation assets. Addressing this issue requires coordinated action across forestry, agriculture, and disaster risk management institutions rather than isolated beekeeper-level interventions.

1.27.3 Hive Locations and Forest Dependency

Beekeeping in Malawi is fundamentally linked to forested and semi-forested landscapes, reflecting the ecological basis of honey production. Survey data reveals that most hives are located in areas with natural vegetation, confirming that the sector relies heavily on healthy forest ecosystems to ensure nectar availability, colony resilience, and sustainable honey yields.

Table 22: Distribution of Hive Locations by Land-Use Category

Land-Use Category	Percentage of Hives (%)
Village forest areas	45
Forest reserves/national parks	28
Own apiary (private land)	13
Communal land	9
Rented/isolated areas	5

Village forests emerged as the most frequently reported hive location, reflecting both their ecological richness and the presence of community-based management structures that regulate access and use. This predominance underscores that honey production is not merely an individual livelihood activity but depends on the collective stewardship of shared natural resources.

The high proportion of hives in forest reserves and national parks (28%) further highlights the sector's reliance on protected landscapes, while simultaneously exposing it to risks from encroachment, illegal logging, and weak enforcement of conservation regulations.

Privately managed apiaries and homestead plots accounted for a smaller share of hive placements (13%), indicating early adoption of more controlled or semi-commercial production systems. While these sites allow for greater management autonomy and the use of modern hive technologies, they do not yet reduce overall dependence on communal or protected forests. Communal lands (9%) and rented or isolated areas (5%) represent adaptive strategies where beekeepers manage access limitations or land constraints. However, these sites are less ecologically secure and more vulnerable to disturbance, which could affect colony productivity over time.

The distribution of hive locations carries important implications for environmental sustainability. First, the heavy reliance on village forests and reserves indicates that individual-level conservation efforts alone are insufficient. Long-term sustainability requires robust collective governance mechanisms that regulate access, prevent overexploitation, and coordinate habitat management. Second, the emerging trend of privately managed apiaries and rented trees illustrates opportunities for semi-commercial expansion and on-farm conservation, but also points to the need for clear tenure arrangements and guidance to prevent ecological degradation. Finally, the overall pattern reinforces that honey production in Malawi is highly forest-dependent, making coordinated interventions in habitat management, reforestation, and forest governance essential to sustain both ecological health and sector productivity.

1.27.4 Habitat Management and Reforestation

The sustainability of Malawi's honey value chain depends critically on the management of landscapes where hives are located. Survey results indicate that beekeepers adopt a range of environmental practices, although adoption varies significantly across different interventions.

Table 23: Adoption of Environmental Practices by Beekeepers

Environmental Practice	Percentage of Hives (%)
Protection of Natural Vegetation	74.4
Tree Planting	71.6
Soil Conservation	38.7
Pest Management	18.4
Water Conservation	10.6

The high adoption of vegetation protection and tree planting demonstrates that beekeepers actively preserve and restore forage resources, maintain habitat connectivity, and support pollinator diversity. Soil conservation (38.7%), pest management (18.4%), and water conservation (10.6%) remain limited, indicating gaps in holistic environmental management. Soil and water management are critical for sustaining forage and colony health, while pest management protects hives from species such as wax moths and small hive beetles.

FGDs consistently highlighted a strong recognition among beekeepers that honey production depends on healthy forest ecosystems. Across FGDs conducted in Zomba, Rumphi, Nkhata Bay, Salima, and Mzimba, participants reported engaging in practical conservation actions centered on tree planting—particularly of bee forage species such as Acacia, mango, orange, avocados, and Guava—as well as the establishment and maintenance of firebreaks around apiary sites, the discouragement of deforestation, and the protection of surrounding forested areas from bushfires. These practices are largely implemented through collective action at cooperative or group level and reflect an embedded understanding that safeguarding forests is essential for sustaining honey yields, livelihoods, and the long-term viability of the sector.

Individual-level practices, such as planting nectar-rich species near apiaries and establishing firebreaks, primarily target honey yield and colony survival. Since most hives are in communal or protected landscapes, collective management through Village Natural Resources Management Committees (VNRMCs) is critical. VNRMCs regulate access to forest resources, enforce conservation rules, mediate conflicts, and coordinate landscape-level interventions such as reforestation and fire management. Where VNRMCs are active, beekeepers benefit from stable forest conditions and improved coordination.

In Nkhatabay District, a local Village Natural Resources Management Committees (VNRMC) manages a designated village forest area and has established its own apiary within it. This dual-purpose model protects forest resources by enforcing sustainable management rules while generating income through honey production and sales. It exemplifies how beekeeping can align conservation objectives with community livelihoods, incentivizing tree retention, reduced deforestation, and habitat preservation in a high-production Northern Region area where hives are heavily forest-dependent. This community-driven approach offers a scalable example of linking environmental stewardship with economic benefits for broader replication.

Private-sector innovations illustrate integrated habitat management. Gala Farms Estate cultivates basil as dedicated bee forage, ensuring year-round nectar supply and reducing pressure on natural forests. Some commercial beekeepers rent trees from smallholder farmers, paying MWK 5,000 per tree per season, which expands hive placement while encouraging tree retention.

A notable example of innovative environmental practice in Malawi's honey sector is observed among commercial beekeepers in Lilongwe District. These operators rent individual trees on private farmland at a rate of MWK 5,000 per tree per season for hive placement. This arrangement not only secures suitable apiary sites with good forage access but also directly incentivizes landowners to retain and protect mature trees rather than fell them for charcoal, agriculture, or other uses. By attaching economic value to standing trees, the model fosters forest conservation on private land, reduces deforestation pressure, and generates supplementary income for landowners. It demonstrates a practical, market-based linkage between beekeeping and habitat preservation, aligning with broader efforts to integrate apiculture into sustainable land management. This approach could be scaled to other districts with similar private land dynamics, strengthening the sector's contribution to biodiversity and climate resilience.

Barriers to comprehensive adoption include limited technical knowledge, costs and labor demands for soil, water, and pest interventions, and weak collective governance where VNRMCs are inactive. Policy and institutional support remains fragmented across forestry, agriculture, water, and environmental sectors.

Scaling habitat management requires broadening extension services to include soil, water, and pest management, combined with incentives such as premiums for sustainably produced honey or payments for ecosystem services. Strengthening VNRMCs, promoting private-sector models like basil cultivation and tree rentals, and integrating land use planning can enhance forest protection, secure forage resources, and support resilient honey production.

1.28 Impact of Environmental Practices on Honey Production

The adoption of environmental practices in Malawi’s honey sector generates both ecological and economic benefits, directly influencing colony health, forage availability, and honey yields. Survey data show that beekeepers perceive the greatest impacts as increased honey production (51%) and improved forage availability (44%), followed by reduced colony mortality (22%) and enhanced biodiversity (11%).

Table 24: Reported Impacts of Environmental Practices on Honey Production

Reported Impact	Respondents (%)
Increased Production	50.97
Improved Forage	43.73
Reduced Colony Mortality	22.01
Enhanced Biodiversity	11.14

These findings demonstrate that beekeepers prioritize practices with direct, tangible benefits, particularly those that enhance colony health and honey yields. Practices such as tree planting, protection of natural vegetation, and establishment of firebreaks directly improve the availability and quality of bee forage while reducing exposure to environmental hazards like fires and soil erosion. Consequently, these actions support both immediate productivity and the long-term resilience of hives and surrounding ecosystems.

The relatively lower reporting of biodiversity enhancement benefits indicates limited recognition among beekeepers of broader ecological services. While less immediately visible, these benefits are critical for sustaining diverse floral resources, pollinator populations, and ecosystem stability all of which underpin honey yields over time. This gap highlights the need for extension services, cooperative training, and policy guidance that emphasize both short-term production gains and long-term ecological stewardship.

Emerging private sector innovations, such as Gala Farms Estate's cultivation of basil for dedicated bee forage, illustrate how targeted habitat management can simultaneously enhance productivity and ecological resilience. This practice increases available forage during periods of floral scarcity, reduces competition with wild vegetation, and strengthens colony survival. However, such integrated practices remain isolated, under-supported by policy, and insufficiently embedded in national extension systems.

The cumulative effect of widespread environmental practices is not merely additive but synergistic. When tree planting is combined with protection of natural vegetation, soil conservation, and controlled harvesting methods, the result is a more resilient honey value chain capable of withstanding climate variability, sustaining yields, and supporting livelihoods. Conversely, gaps in adoption particularly in soil, pest, and water management expose hives to long-term productivity risks, including forage degradation, colony losses, and reduced honey quality.

Environmental practices serve as both a production and conservation strategy in Malawi's honey sector. Their adoption enhances honey yields, strengthens colony health, and contributes to ecosystem services that underpin long-term sustainability. Scaling these practices requires coordinated action through policy support, cooperative management, targeted incentives, and technical guidance, ensuring that ecological and economic benefits are realized across the value chain.

1.29 Environmental Risks and Challenges

Honey production in Malawi is intimately linked to the health of forests and natural ecosystems, making it highly vulnerable to environmental stressors. Survey data reveal that beekeepers perceive deforestation, climate change, and pesticide exposure as the most pressing threats. Specifically, 45% of respondents identified deforestation, highlighting widespread habitat loss and degradation of critical bee forage areas. Climate change (35%) and pesticide use (32%) are also significant, while flooding (20%) and drought (12%) are less frequently reported but represent growing climate-related risks.

Table 25: Environmental Problems Affecting Honey Production

Environmental Problem	Respondents Reporting (%)
Deforestation	45
Climate Change	35
Pesticide Use	32
Flooding	20
Drought	12

The predominance of human-driven pressures—deforestation and pesticide use—over direct climate impacts highlights these as the most immediate threats to honey production. Deforestation reduces forage availability and habitat connectivity, increases colony vulnerability, and disrupts seasonal honey flows. Pesticide use, particularly in areas adjacent to commercial estates, contributes to bee mortality, colony weakening, and reduced yields.

Focus group discussions provide important insights into localized risk dynamics. In Nkhatabay's Mzenga area, members of the Lweya and Kabundili cooperatives reported significant bee deaths in forests near Kawalazi Estate, which they attributed to chemical drift from nearby agricultural activities. This example illustrates how land-use conflicts and unregulated agrochemical practices can directly undermine honey production, even in areas with otherwise intact forests.

While flooding and drought are reported less frequently, they are interconnected with human-driven pressures. Deforested areas are more prone to soil erosion and reduced water retention, which worsens the impact of extreme weather events. Climate variability can also intensify the effects of pesticide exposure, as weakened colonies are less resilient to environmental stress. These interdependencies underscore the need for integrated approaches that address both direct threats and underlying environmental vulnerabilities to ensure the long-term sustainability of Malawi's honey sector.

CHALLENGES ACROSS THE VALUE CHAIN

This section outlines the principal constraints limiting productivity, market integration and value addition across Malawi's honey value chain.

Production and Environmental Constraints

Honey production in Malawi is structurally constrained by persistent biological, technical and environmental factors that undermine productivity, reliability of supply and long-term sustainability. Survey evidence indicates that pests and diseases, notably small hive beetles, wax moths, ants and chalkbrood, constitute the most binding production constraint, with approximately 74 to 78 percent of beekeepers identifying them as a major or very major challenge. These biological pressures are exacerbated by inadequate access to essential beekeeping equipment, including protective clothing, smokers and appropriate harvesting tools, affecting about 60 percent of producers, as well as hive theft, reported by 58 to 60 percent, particularly in forest-based and remote production systems.

Environmental stressors further weaken production outcomes. Climate variability, affecting approximately 38 to 42 percent of producers, disrupts flowering cycles, colony strength and harvesting calendars. Deforestation and declining forage availability, reported by 28 to 35 percent, reduce the ecological carrying capacity of traditional beekeeping landscapes. Pesticide exposure, especially in areas adjacent to commercial agriculture, affects 15 to 20 percent of producers and contributes to colony weakening, absconding and mortality.

Production challenges are compounded by continued reliance on traditional bark and log hives and destructive harvesting practices, including the use of open fire and indiscriminate comb cutting. These practices result in high colony losses, compromise regeneration of colonies and contribute to declining productivity over time. Consequently, average yields remain low, commonly in the range of 5 to 12 kilograms per hive per year, even among producers using improved top-bar hives. Low and inconsistent yields constrain household incomes, reduce marketable surplus and undermine the ability of producers to engage meaningfully with formal markets.

In focus group discussions across the six honey-producing districts (Rumphi, Nkhata Bay, Mzimba, Lilongwe, Ntchisi, and Salima), beekeepers repeatedly highlighted two major interconnected barriers: limited access to protective equipment and pest control tools, and insufficient knowledge of modern colony management. Without affordable smokers, suits, gloves, and veils, many continue using destructive open-fire harvesting methods, which cause colony losses, stress the bees, and reduce future yields while increasing safety risks and forest fire threats. At the same time, participants admitted widespread confusion around improved hives, particularly Langstroth, such as incorrectly harvesting from the queen excluder chamber or brood areas, mismanaging supers, failing to prevent swarms properly, and lacking skills in timely inspections, integrated pest management, and seasonal feeding. They noted that while some modern hives have been distributed through programs, follow-up training has been inadequate, leaving beekeepers to fall back on traditional practices even with better equipment, resulting in underperformance of high-potential technologies and perpetuating low productivity across the sector.

Input Supply and Technology Constraints

The input supply system represents a foundational structural weakness in Malawi's honey value chain. While specific access barriers such as high equipment costs, reported by 13.8 percent of producers, distance to suppliers, reported by 10.1 percent, and general unavailability of inputs, reported by 4.9 percent, are present, the dominant constraint is the absence of a functional, commercially driven input market. Approximately 46 percent of beekeepers rely on self-fabricated equipment, 35.1 percent access inputs through donor or NGO-supported initiatives, and 25.3 percent source from local artisans or traders, while only 5.5 percent obtain inputs from formal national suppliers.

This structure reflects systemic underdevelopment of private-sector participation in beekeeping input supply. Heavy reliance on project-based distribution mechanisms limits standardisation, quality assurance and continuity of supply. As a result, adoption of modern technologies, including Langstroth hives, standard frames, foundation sheets, centrifugal extractors, refractometers and full protective gear, remains extremely limited among smallholders.

The consequences are far-reaching. Inadequate access to quality inputs constrains productivity gains, perpetuates environmentally harmful practices and directly contributes to quality defects that originate at the point of harvest. More fundamentally, the absence of a viable input market undermines the scalability of the sub-sector and limits the effectiveness of extension and capacity-building efforts.

in stakeholder consultations and key informant interviews, the lack of a commercially viable private-sector input supply system was frequently cited as a major constraint. Beekeepers and cooperatives remain heavily dependent on sporadic donor-supported distributions of hives, protective gear, smokers, and other essentials, or on self-fabricated and improvised alternatives, due to limited commercial availability, high import costs, and unreliable rural supply chains. This donor reliance creates vulnerability: when projects conclude, access disappears, slowing the adoption of modern technologies, perpetuating destructive practices, and hindering productivity and quality improvements across the sector. Participants stressed that without a sustainable, market-driven input network—including local manufacturing and affordable supply mechanisms—the transition to improved beekeeping remains inconsistent and fragile.

Market Access and Price Formation Constraints

Market participation by honey producers is constrained by weak price formation mechanisms and limited integration into structured markets. From the producer perspective, low farm-gate prices represent the most severe marketing challenge, reported by 82 percent of respondents. This is followed by high transport costs, affecting 55 percent, and seasonal or unpredictable demand, reported by 40 percent of producers. In contrast, processors, packers and exporters consistently report unmet demand for honey that meets minimum quality, volume and consistency requirements, with several indicating the capacity to absorb two to three times their current procurement volumes.

This apparent contradiction reflects deep structural segmentation within the market. Approximately 52 percent of producers sell primarily to local vendors or small-scale aggregators, 40 percent sell directly to consumers, while only 28 percent engage through cooperatives and 22 percent sell directly to processors. Informal channels dominate the market, characterised by weak quality differentiation, limited transparency and buyer-determined pricing.

As a result, the majority of national honey production is locked into low-value market segments where incentives for quality improvement are minimal. Producers lack bargaining power and face limited rewards for upgrading practices, while formal buyers incur high transaction costs in sourcing adequate volumes of consistent quality.

Commercial Governance and Contractual Constraints

Commercial relationships within the honey value chain remain overwhelmingly informal and weakly governed. Cash-on-delivery transactions account for 92.2 percent of all sales, with minimal use of credit, advance payments or deferred settlement mechanisms. Nearly all producers report that prices are unilaterally determined by buyers, with little or no scope for negotiation.

Formal written contracts, guaranteed off-take agreements, input credit arrangements tied to supply commitments and structured payment schedules are largely absent. This informality exposes producers to price volatility and opportunistic behaviour by intermediaries, while simultaneously increasing supply risks and transaction costs for buyers. The absence of predictable commercial relationships discourages long-term investment in processing capacity, aggregation infrastructure and upstream producer support.

Quality Assurance and Regulatory Compliance Constraints

Quality assurance constitutes a major barrier to market upgrading and export competitiveness. Survey data indicate that 60.5 percent of beekeepers are not aware of Malawi Bureau of Standards honey specifications, and 67.4 percent do not undertake any form of quality testing. Access to basic testing equipment, such as refractometers, is limited to approximately 3 percent of producers.

As a result, formal buyers report rejection or downgrading of 30 to 50 percent of supplied honey due to high moisture content, fermentation, contamination, smoke taint and poor presentation. The lack of decentralised, affordable testing services at community or district level, combined with weak enforcement of standards and limited quality-based price incentives, undermines compliance and discourages investment in improved post-harvest handling, storage and packaging.

> A clear illustration of Malawi's quality assurance barriers is Gala Farms Estate in Lilongwe, which produces distinctive, high-quality macadamia-blossom honey and aims to export to regional African markets and potentially the EU. Despite strong production potential, the estate cannot access these premium channels due to the lack of full international accreditation and sufficient testing capacity at the Malawi Bureau of Standards (MBS). Critical export tests—such as pesticide residues, microbial contaminants, and authenticity verification—are not reliably available locally, forcing costly and time-consuming third-party testing abroad. This delays shipments, raises expenses, and blocks competitiveness in stringent markets, forcing reliance on domestic or informal sales and highlighting the broader sector's certification gaps.

Infrastructure and Logistics Constraints

Inadequate rural infrastructure significantly constrains market integration and value chain efficiency. Poor feeder roads and rural access are reported by 85 percent of producers, followed by high transport costs, affecting 58 percent, and limited access to transport services, affecting 23 percent. These constraints are most acute during the main harvest season from October to January, when road conditions deteriorate and access to production areas becomes unreliable.

High logistics costs erode producer margins and reduce incentives to engage with distant but higher-value markets. Processors and aggregators similarly report difficulties in sourcing honey consistently from high-potential areas, reinforcing reliance on informal intermediaries who operate closer to production zones but offer lower prices.

Financial Access Constraints

Limited access to finance represents one of the most binding cross-cutting constraints in the honey value chain. Sixty-nine percent of beekeepers report having never accessed credit for beekeeping activities. Key barriers include lack of suitable financial products, reported by 61.1 percent, high interest rates, reported by 16.7 percent, and perceived enterprise risk, reported by 15.8 percent.

Financial institutions cite lack of collateral, small loan sizes, production and market risks, weak producer organisation and absence of structured off-take agreements as primary deterrents. This financial exclusion perpetuates chronic underinvestment in productive assets, limits technology adoption and constrains the sector's ability to scale and professionalise.

DONOR AND NGO PROGRAM SYNERGIES

The honey value chain in Malawi stands at a critical juncture, characterized by significant potential for growth, yet constrained by systemic challenges including production inefficiencies, market asymmetries, and environmental pressures. Within this context, a network of donor-funded initiatives and non-governmental organizations (NGOs) plays an instrumental role in advancing the sector's development. These efforts are strategically aligned with national development aspirations articulated in the Malawi 2063 vision and the National Agriculture Policy, and are implemented in close collaboration with government-led programs such as the Ministry of Local Government's Transforming Agriculture through Diversification and Entrepreneurship (TRADE) Programme.

The TRADE Programme, a six-year initiative co-funded by the International Fund for Agricultural Development (IFAD) and the OPEC Fund for International Development (OFID), aims to enhance rural livelihoods through value chain commercialization. Within the honey sector, TRADE’s interventions are geographically focused on the districts of Rumphi and Nkhatabay, targeting the development of a more resilient, productive, and market-oriented apiculture sub-sector. This focused geographical approach allows for deeper, more concentrated impact but also necessitates strategic alignment and synergy with other actors operating at national and regional scales to avoid fragmentation and maximize systemic change.

This section provides an analytical overview of the key donor and NGO initiatives supporting Malawi’s honey value chain, examines their geographical footprints and synergistic relationships, and assesses how these collaborative efforts complement and enhance the focused objectives of the TRADE Programme in Rumphi and Nkhatabay.

Key Development Actors, Geographical Coverage and Their Roles

The landscape of support for the honey value chain is shaped by a consortium of international donors and implementing partners, each contributing distinct expertise, resources, and operational methodologies across strategic geographies. The synergy between these actors is not incidental but a result of deliberate alignment with national agricultural and environmental frameworks

Table 26: Key Development Actors in Malawi’s Honey Sector: Focus and Geographical Coverage

Actor/Program	Primary Donor(s)	Geographical Coverage	Core Value Chain Focus
TRADE Programme (Find your Feet)	IFAD, OFID	Rumphi, Nkhatabay (focused)	End-to-end value chain development, market linkages, producer organization strengthening

AGCOM Project	World Bank, EU	Nationwide (25+ districts), including Northern Region hubs	Commercialization grants, productive alliances, market access infrastructure
UNDP UCHI Programme	European Union	Climate-vulnerable districts, including parts of Northern Region	Climate-smart agriculture, agroforestry, resilience building
FAO	EU, UK FCDO	14+ districts nationally; forest landscape restoration sites	Input distribution, capacity building, FLR-integrated beekeeping
African Parks Network	Private donors, conservation funds	Protected area buffers (Nkhotakota, Liwonde and Majete)	Conservation-linked enterprises, organic certification, premium markets
Emmanuel International	Various donors	Zomba, Machinga, Southern Region districts	Community mobilization, VSLA formation, integrated development
AG Care	Tearfund, other faith donors	Salima, Central Region districts	WASH-beekeeping integration, farmer field schools

Analysis of Strategic Synergies and Value Addition

The true power of this multi-stakeholder landscape lies in the concrete, actionable synergies that emerge when these actors coordinate their efforts. These synergies translate directly into enhanced efficiency, greater impact, and sustainable outcomes for the honey value chain.

Table 27: Strategic Synergies Among Development Actors in Malawi's Honey Sector

Strategic Area	Key Actors	Nature of Synergy
Financing & Inputs	AGCOM, FAO,TRADE	AGCOM grants fund hive procurement; FAO ensures technical quality; TRADE manages last-mile distribution and training
Climate Resilience	FAO, TRADE	UCHI's climate adaptation FAO's agroforestry/FLR expertise enhance ecosystem services for beekeeping
Market Differentiation	TRAD, African Parks, AGCOM	TRADE strengthens cooperatives; African Parks provides organic/biodiversity certification pathways; AGCOM funds processing equipment
Capacity Building	FAO, AG Care/Emmanuel Int., TRADE	FAO's technical curricula + NGOs' community training methods + TRADE's localized delivery creates a blended learning system
Monitoring & Learning	All actor, M&E units	Shared data collection and analysis strengthens evidence for adaptive management and policy advocacy

The synergies described above do not emerge automatically. They require deliberate coordination mechanisms, shared information systems, and leadership from a body with the legitimacy and mandate to convene actors across sectors. For the TRADE Programme, this analysis has two direct implications. First, the programme's geographic focus in Rumphi and Nkhata Bay should be understood not as an isolated intervention but as a proof-of-concept that national actors can replicate. When TRADE demonstrates that coordinated value chain development in these districts raises productivity, improves quality, and opens premium markets, it generates a replicable model that AGCOM, FAO and other national programmes can scale across the country's remaining productive beekeeping districts.

Second, the programme's effectiveness depends heavily on the performance of actors operating at national level. Honey quality improvements in Rumphi are of limited commercial value if the Malawi Bureau of Standards lacks the laboratory capacity to certify them. Cooperative strengthening in Nkhata Bay cannot fully translate into export revenues if national trade facilitation infrastructure and certification pathways remain underdeveloped. This interdependency is not a vulnerability — it is an argument for the kind of structured, government-led coordination architecture that this diagnostic study recommends. The establishment of a National Apiculture Coordinating Body, aligned to the priorities of Malawi 2063 and the National Agriculture Policy, would create the institutional home for these synergies to be formally managed, monitored, and deepened over time

IMPLEMENTATION ROADMAP

The following roadmap provides a structured, multi-phase framework to transition Malawi's beekeeping sector from subsistence-level production to a competitive, commercially viable and inclusive industry across a 60-month implementation period.

Table 28: Implementation Roadmap

Phase	Strategic Pillar	Key Actions	Responsible Actors	Timeline
Phase 1 Foundation Building M 1–12	**Policy & Regulatory Framework**	• Develop and gazette a National Apiculture Policy aligned to Malawi 2063 • Establish regulatory framework for beekeeper registration, hive inspection and disease surveillance • Formalize and enforce honey quality standards through MBS	• Ministry of Agriculture (DAHLD) • Ministry of Trade • Malawi Bureau of Standards • National Planning Commission	M 1–12
	Institutional Coordination	• Establish a National Apiculture Coordinating Body modelled on Uganda's TUNADO • Create a DAHLD–DAPS–DoF joint steering committee with defined mandates • Assign clear institutional roles to eliminate fragmentation and duplication	• DAHLD • DAPS • Department of Forestry • DNPW • Key sector stakeholders	M 3–9
	Data System Development	• Design the National Apiculture Data System (NADS) architecture and survey modules • Develop a probability-based sampling framework for honey production estimates • Pilot NADS in high-production districts — Rumphi and Nkhata Bay	• DAPS Statistics Unit • DAHLD • Department of Forestry	M 4–12

	Quality Standards Awareness	• Launch a national MBS honey standards awareness campaign across producing districts • Train 500 producers and aggregators on GMP and HACCP • Distribute refractometers and quality control equipment to cooperatives	• Malawi Bureau of Standards • Cooperatives • Extension Services	M 6–12
Phase 2 Capacity Building M 6–24	**Producer Training**	• Train 10,000 beekeepers in modern hive management techniques • Establish demonstration apiaries in all major honey-producing districts • Develop dedicated apiculture training modules for extension officers	• DAHLD Extension Services • Development Partners • NGOs/CSOs • TRADE Programme	M 6–18
	Technology Adoption	• Distribute 15,000 improved hives (Top-bar and Langstroth) at a 60:40 ratio • Provide full protective equipment kits to 5,000 beekeepers • Support local artisan hive manufacturing to reduce import dependency	• AGCOM • TRADE Programme • Development Partners • Local hive manufacturers	M 9–24
	Colonization Enhancement	• Implement swarm attraction and baiting programmes across the Northern Region • Train beekeepers on optimal hive placement and apiary management • Establish predator control systems to reduce hive abandonment rates	• Extension Services • Cooperatives • TRADE Programme	M 6–18
	Cooperative Strengthening	• Register and formalize 50 beekeeping cooperatives with full legal standing • Provide governance, financial management and record-keeping training • Establish cooperative aggregation centres in 10 priority districts	• Ministry of Trade • Cooperative Development Officers • NGOs/CSOs • Development Partners	M 3–15

Phase 3 Market Development M 12–36	Processing Infrastructure	• Establish 5 district-level honey processing and bottling facilities • Procure centrifugal extractors, settling tanks and bottling equipment • Support 20 cooperatives with small-scale processing unit installation	• AGCOM • TRADE Programme • Private processors • Cooperatives	M 12–30
	Quality Assurance Systems	• Establish 3 accredited honey testing laboratories (North, Central, South) • Implement end-to-end traceability systems from hive to retail shelf • Conduct pesticide residue and microbial testing across the supply chain	• Malawi Bureau of Standards • Ministry of Health • Private laboratories	M 15–36
	Market Linkages	• Formalize supply contracts between 30 cooperatives and formal buyers • Negotiate guaranteed minimum off-take price agreements with anchor buyers • Establish real-time price information systems across producing districts	• MITC • Private processors • Cooperatives	M 12–24
	Export Development	• Include honey as a priority export product in the National Export Strategy • Support 10 producers/cooperatives to achieve international export certification • Facilitate market access negotiations for SADC, EU and Asian markets	• MITC • Ministry of Trade • Private exporters	M 18–36
	Branding & Packaging	• Develop a national 'Malawi Honey' geographic origin brand identity • Establish standardised packaging guidelines and supply chain protocols	• MITC • Processors • Cooperatives • Certification Bodies	M 15–30

		• Support organic and fair-trade certification pathways for cooperatives		
Phase 4 Environmental Sustainability M 12–48	**Habitat Protection**	• Gazette 50,000 ha of designated bee reserves across priority regions • Integrate beekeeping into Village Forest Area (VFA) management plans • Establish buffer zones between apiaries and agricultural estates	• Department of Forestry • Environmental Affairs • DNPW • Local communities	M 12–36
	Forage Development	• Plant 500,000 bee forage trees (Acacia, Gliricidia, fruit species) • Promote api-agroforestry systems among smallholder beekeeping communities • Cultivate dedicated forage crops (basil) on 1,000 hectares	• Development Partners • Department of Forestry • DNPW • Estates	M 15–48
	Climate-Smart Practices	• Train 5,000 beekeepers on climate adaptation and resilience strategies • Promote sustainable harvesting using smokers — eliminating fire use entirely • Establish firebreaks around 200 apiaries in high-risk deforestation zones	• Development Partners • Extension Services • NGOs/CSOs • Cooperatives	M 12–36
	Pesticide Management	• Develop Integrated Pest Management (IPM) protocols for apiaries near estates • Establish spatial planning guidelines to shield apiaries from chemical drift • Monitor and enforce pesticide use restrictions near bee habitats	• Ministry of Agriculture • Agricultural estates • Department of Forestry • DNPW	M 18–42
Phase 5 Financial	**Access to Finance**	• Develop honey-specific financial products — equipment loans and working capital • Establish a guarantee fund to de-risk beekeeping lending	• Financial Institutions • AGCOM • Cooperative SACCOs	M 15–36

Inclusion M 15–42		• Train 3,000 beekeepers in financial literacy and loan management		
	Input Supply Systems	• Support 20 local hive manufacturers and equipment suppliers • Establish an input distribution network covering 15 districts • Promote private sector investment in equipment supply and logistics	• Private sector suppliers • Local artisans • TRADE Programme	M 12–30
	Anchor Farm Models	• Establish 10 commercial anchor farms (50+ hives each) in priority zones • Link anchor farms with 500 out-grower smallholders through formal arrangements • Promote contract farming to guarantee market access for smallholders	• Commercial beekeepers • Private agri-estates • TRADE Programme	M 18–42
	Private Processor Support	• Provide matching grants to 5 processors for capacity expansion • Support value-added product development (kombucha, beeswax, propolis) • Facilitate formal supply partnerships between processors and cooperatives	• Private processors • AGCOM • MITC	M 15–36
Phase 6 Gender & Inclusion M 6–48	Women's Empowerment	• Provide subsidised protective equipment to 2,000 women beekeepers • Establish women-led processing cooperatives in 5 districts • Offer targeted business development and financial literacy training	• TRADE Programme • Women's organisations • Cooperatives	M 6–48
	Youth Engagement	• Train 3,000 youth in modern beekeeping and agri-business entrepreneurship • Provide start-up hive packages to 1,000 young beekeepers	• NGOs/CSOs • Development Partners • TRADE Programme • Cooperatives	M 9–48

		• Create youth beekeeping clubs in 20 districts linked to cooperatives		
	Disability Inclusion	• Adapt equipment and practices for 500 persons with disabilities • Provide accessible training materials and tailored extension services • Establish inclusive cooperatives with targeted disability membership	• NGOs/CSOs • Cooperatives • Disability organisations	M 12–48
Phase 7 Monitoring & Scaling M 24–60	**National Data System Scale-Up**	• Roll out NADS nationally across all honey-producing districts • Integrate honey module into APES and NAMIS • Publish annual national honey production and trade reports	• DAPS Statistics Unit • NSO • DAHLD	M 24–60
	Impact Assessment	• Conduct baseline, midline and endline evaluations of sector transformation • Document best practices and replicable success stories • Assess economic, social and environmental impact of all interventions	• Independent Evaluators • Research Institutions	M 12/36/60
	Knowledge Sharing Platform	• Establish the Malawi Honey Sector Learning Platform • Organise annual national beekeeping conferences with regional participation • Facilitate peer-to-peer learning exchanges between cooperatives	• National Apiculture Coordinating Body • Cooperatives • NGOs/CSOs	M 18–60
	Regional Benchmarking	• Conduct study tours to Tanzania, Zambia, Uganda and Ethiopia • Adopt regional best practices in quality, certification and export systems • Actively participate in SADC and COMESA apiculture technical forums	• MITC • DAHLD • Processors • Cooperative Representatives	M 24–54

CONCLUSIONS AND RECOMMENDATIONS

1.30 Conclusion

Malawi's honey value chain stands at a critical juncture. The evidence presented in this diagnostic study confirms that the sector possesses far greater productive capacity than previously recognized, yet continues to operate well below its potential due to persistent and interconnected systemic constraints. National honey production of 301.55 metric tonnes, more than double previous estimates, remains insufficient to meet domestic demand of 609.4 metric tonnes annually, leaving a supply gap that formal buyers are currently filling through imports. The premium prices that Malawian honey commands in both domestic and international markets signal genuine competitive advantage. What is missing is the coordinated investment, policy architecture, and institutional capacity needed to translate this advantage into sustainable sector growth.

The diagnostic reveals that constraints are structural rather than isolated. At the production level, the dominance of traditional hives, high rates of uncolonized hives, widespread pest and disease pressure, inadequate protective equipment, and continued use of destructive harvesting practices collectively suppress yields and compromise sustainability. Quality assurance emerges as perhaps the most binding constraint on market access and value: with the majority of beekeepers conducting no quality testing, formal buyers are forced to reject or downgrade between 30 and 50 percent of supplied honey, locking the sector into informal, low-value transactions that neither reward quality nor incentivize investment. Weak institutional coordination, the absence of a dedicated National Apiculture Policy, inadequate extension services, and the lack of a reliable national data system further undermine the sector's ability to grow in a coherent and accountable manner.

The financial dimension compounds these challenges. Nearly seven in ten beekeepers report no access to credit, constrained by the absence of suitable financial products, high interest rates, and lack of collateral. The cost-benefit analysis confirms the strong economic returns of improved hive technologies, with a 50-hive Langstroth operation generating a Net Present Value of MWK 35.1 million and a Top-bar system MWK 15.5 million over ten years. Yet upfront investment barriers continue to limit adoption, particularly among women and youth. Women, who constitute up to 43 percent of beekeepers, face compounding disadvantages including limited access to protective equipment, training, and decision-making authority over productive assets. Youth participation in the sector is high, yet youth hive ownership stands at just 2.3 percent, reflecting deep structural barriers to asset accumulation and economic empowerment. Persons with disabilities, representing up to 18 percent of beekeeping households, remain largely underserved by existing programmes.

Environmental sustainability presents both an opportunity and a vulnerability. The sector's deep dependence on forest ecosystems, with 73 percent of hives located in village forests and forest reserves, makes production fundamentally contingent on the health of these landscapes. While beekeepers demonstrate strong environmental awareness through widespread participation in tree planting and vegetation protection, climate variability, deforestation, and pesticide exposure continue to threaten forage availability and colony health. Addressing these risks requires not only better beekeeper practices but integrated landscape governance that connects apiculture with forest conservation, land use planning, and climate adaptation.

Regional experience offers important lessons and cause for optimism. Uganda, Tanzania, Zambia, and Ethiopia have each demonstrated that with appropriate policy frameworks, institutional coordination, quality infrastructure, and market development support, smallholder honey sectors can achieve meaningful gains in production, quality, and export competitiveness. Malawi has the ecological endowment, the human capital, and the market opportunity to follow a similar trajectory. What is required is the political commitment and stakeholder alignment to act on the evidence.

The pathway forward is clear. Transformation requires simultaneous and sequenced action across seven strategic priorities: establishing a sound policy and regulatory framework; building coherent institutional architecture with a designated lead agency and a functioning coordinating body; enhancing production through improved technologies, colonization programmes, and pest management; strengthening quality systems through testing infrastructure and processing investment; developing markets through branding, export promotion, and formalized commercial relationships; mobilizing tailored financing for producers, cooperatives, and processors; and embedding gender, youth, and disability inclusion across all interventions. These priorities are mutually reinforcing, and progress in one area creates the conditions for progress in others, while neglect of any single dimension risks undermining the whole.

1.31 Recommendations

The following recommendations are proposed to address the systemic constraints identified in this study and unlock the full potential of Malawi's honey value chain.

i. Develop and adopt a National Apiculture Policy and Strategy that recognizes honey as a priority export value chain, defines institutional mandates, and sets measurable production and quality targets aligned with Malawi 2063.
ii. Enact dedicated apiculture legislation drawing on regional benchmarks from Zambia and Tanzania, covering beekeeper registration, disease control, export certification, traceability, and enforcement of import controls.
iii. Clarify policy ownership and regulatory leadership between the Department of Forestry and DAHLD by formally designating a lead institution and establishing a binding inter-agency coordination framework with defined roles, responsibilities, and accountability mechanisms.
iv. Establish a National Apiculture Coordinating Body with representation from government ministries, producer organizations, cooperatives, private processors,

exporters, development partners, and research institutions to lead sector planning, coordinate investments, and monitor performance.

v. Design and pilot a National Apiculture Data System (NADS) to track hive stocks, production flows, and yields, alongside a structured scouting and extension system to strengthen colony health management and technical support services.

vi. Scale the adoption of both Top-bar and Langstroth hives with accompanying training, protective equipment, smokers, and extractors, and investigate the underlying constraints limiting Langstroth hive productivity to inform targeted corrective measures.

vii. Develop a National Queen Rearing and Breeding Program to improve colony productivity and genetic quality, alongside targeted interventions to increase colonization rates of existing unoccupied hives.

viii. Eliminate destructive and fire-based harvesting practices through smoker distribution, training in non-destructive methods, and linking compliance to certification and preferential market access.

ix. Develop and implement Integrated Pest and Disease Management protocols for biological constraints including small hive beetles, wax moths, and chalkbrood, alongside a monitoring programme for pesticide residues and chemical drift impacting colony health and product safety.

x. Establish accredited honey testing laboratories across all three regions for microbial testing and quality verification, and distribute refractometers to cooperatives to strengthen quality control at source.

xi. Invest in processing infrastructure and training to support value addition and capture income from honey by-products including beeswax, propolis, and pollen, enabling producers and cooperatives to move beyond raw honey sales.

xii. Map honey reserves and forage availability to determine ecological carrying capacity across regions, conduct spatial planning for apiaries to establish buffer zones from agricultural areas, and integrate critical bee forage zones into district land use plans.

xiii. Develop a unified "Malawi Honey" national brand backed by trademark protection, standardized packaging, and targeted marketing in premium SADC, EU, and Asian markets, supported by an Export Market Readiness Audit to identify sanitary, phytosanitary, and certification barriers.

xiv. Strengthen commercialization and market development by formalizing producer–buyer contracts, commissioning a National Consumer and Market Study, and building market information systems accessible through mobile technology.

xv. Design apiculture-specific financing mechanisms including equipment financing, cooperative working capital loans, matching grant facilities, and weather-indexed insurance products aligned with production cycles.

xvi. Ensure women, youth, and persons with disabilities are active participants and beneficiaries across the value chain through subsidized equipment, start-up hive packages, women-led processing cooperatives, mentorship programmes, and accessible training, with dedicated monitoring indicators to track and report on progress annually.

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APPENDICES

Appendix 1: List of Stakeholders Consulted

Stakeholder Name	Contact Information (Person , Phone , Email)	Category
KRADD – Karonga	Mzembe Enock , 0999035962 , enockmzembe@yahoo.com	ADD
KRADD – Karonga	PM (Name not specified)	ADD
KRADD – Chitipa	Lumbani Msiska , 999280624 / 888480624	ADD
KRADD – Chitipa	DAS (Name not specified)	ADD
MZADD – Mzimba	Kelvin Nyirongo , 0884982527	ADD
MZADD – Mzimba	Chikomola , 881729862 / 993212004	ADD
MZADD – Mzimba	OJS Kumwenda , 0999409606	ADD
MZADD – Rumphi	Nyirongo , 0882464848	ADD
MZADD – Nkhata Bay	Innocent Manda , 099232414	ADD
KADD – Kasungu	Shaibu (DCO) , 0999296411	ADD
KADD – Kasungu	Evelin Chima , 0888897308	ADD
KADD – Ntchisi	Connex Mthizi , 0999575690	ADD
KADD – Dowa	Liwonde , 0999355456	ADD
KADD – Mchinji	Yotam Hastings , 0999212081	ADD
KADD – Mchinji	Mary Kamwaza , 09988527551	ADD
SLADD – Salima	Bensoni Sumani , 0883618090 , bensonsumani7@gmail.com	ADD
SLADD – Salima	Enford Kanyimbo , 0992748445	ADD
SLADD – Nkhotakota	Denis Zingeni , 0999933143	ADD
LADD – Lilongwe	Sheila Kang'ombe , 0999510539	ADD
LADD – Lilongwe	Peter Zunje Nkhoma , 0999354730	ADD
LADD – Lilongwe	Vetta LLW , 0999597652	ADD
LADD – Lilongwe	Rosemary LLE , 0992600670	ADD
LADD – Dedza	Ernest Chatonda , 0999195277	ADD
LADD – Ntcheu	Bridget Chamdimba , 995715139 / 886468474	ADD
MADD – Mangochi	Kondwani Nyengo , 0999327030	ADD
MADD – Mangochi	Chriss Nkhoma , 0990100433	ADD
MADD – Mangochi	Nditani Maluwa , 0888857988	ADD
MADD – Zomba	Isaac Alli , 0881435103	ADD

MADD – Zomba	Hellen Bango , 0881250911 / 993687980	ADD
MADD – Balaka	Chingeni Dyson , 0996758513	ADD
MADD – Machinga	Benati , 0888515009 , benatiadreck@gmail.com	ADD
MADD – Machinga	Madalitso Ngombe , 0999100565	ADD
MADD – Machinga	Jamila , 0995142002	ADD
BLADD – Blantyre	Edward Katunga , 0988304980	ADD
BLADD – Neno	Upe Museko , 996551043 / 880285883	ADD
BLADD – Mwanza	Feston Kwezani , 0888865297	ADD
BLADD – Thyolo	Mziko CK , 0999376100	ADD
BLADD – Thyolo	Prince Shaibu , 0884340120	ADD
BLADD – Mulanje	Osmond Chapotoka , 0999766739	ADD
BLADD – Mulanje	Newton Sodala , 999139712 / 882009792	ADD
BLADD – Chiradzulu	Mphatso Kafuwa , 0888383826	ADD
BLADD – Chiradzulu	Jacquiline Msiska , 0888646770	ADD
BLADD – Phalombe	James Banda , 0999306290	ADD
SHVADD – Chikwawa	Taulayi Francis Mlewa , 0888345713	ADD
SHVADD – Chikwawa	Chimbali CK , 0884644510	ADD
SHVADD – Chikwawa	Ali , 0881435103	ADD
SHVADD – Nsanje	Lichapa James , 0885577799	ADD
Ministry of Trade	Blessings Zitta , 0987255966 , Blessings.zitta@trade.gov.mw	Government
Ministry of Agriculture (Planning Dept.)	—	Government
AGCOM Project Unit	Dan Chilima; Ted Nkhumwa , 0999446840	Government
Department of Animal Health & Livestock Development	Dr Nkhoma , 0884562763	Government
National Statistical Office	Kingsley Manda; Precious Mitima , 0884763074 , kingsly.manda@nso.gov.mw	Government
Malawi Revenue Authority	Mayamiko Shaba (Customs Officer – Business Support), +265 994815329 ,mshaba@mra.mw Mphatso Lucy Olivia Kasamba, mkasamba@mra.mw	
Malawi Bureau of Standards	—	Government
Department of Forestry	Mrs Mughogho	Government
Malawi Investment & Trade Centre (MITC)	Mr Alex , 099235417	Trade Promotion

ICAN Investments	Dumisani Banda , 0995897108	Private Sector
Mure Investments	Andrew Namankhoma , 0882846885	Private Sector
FAO	Lilian Mpama; Adam Saffer , 0888567164 / 088178900 , Adam.saffer@fao.org	International Organization
GIZ (EYA Project)	Tawonga Maluwa; Inken Adrian , 0881628581 , Inken.adrian@giz.al	International Organization
UNDP (Uchi Project)	Jean Damour Kundimana , 0980475098 , Jeandamour.kundimana@undp.org	International Organization
FAAD – Nkhata Bay	John Harawa , john.harawa@gmail.com	NGO
Assemblies of God Care	Hendrix Nkhata	NGO
Total LandCare	Blessings Mwale	NGO
Find Your Feet	Mr Canan Chunga	NGO
Mulanje Mountain Conservation Trust	Carl Bruessow; Kate Chanthuya , 0999935920 , kate@mountmulanje.org.mw	Conservation
African Parks	Dickxie Makwale , 0999965046 , Dixiem@africanparks.org	Conservation
Mzuzu University	Edwin Hara; Francis Kamangadazi , fkamangadazi@gmail.com	Academic
Chitedze Research Station	Judith Chikoti , 0888890119	Research
LUANAR	Prof. Masamba , 0997296161	Academic
LUANAR	Trust Kasambara , 0992393029	Academic
Gala Agriculture Company Ltd	Eng. Tiyezye Ngwira Mpokonyoka , 888207748 / 999965165 , ngwirampokonyoka@galamacs.com	Private Sector
Tithokoze Farm	Clara Malunga , 0999520724	Private Sector
Green Win	Peter Nyasulu , 0999487922 , peternyasulu@gmail.com	Private Sector
Tilime Honey Produce Ltd	Mercy Asau , 0999892466 , Mercyesau1@gmail.com	Honey Processor
The Honey Den	James Mwenefumbo , 0888320749 , mwenefumbojames@gmail.com	Honey Processor
Wala Enterprise	Chilungamo Phiri	Private Sector
Kirk Agri-Business	Amon Kabuli , 0994560095	Private Sector
Mzuzu Coffee	Bernard Kaunda , mdkngambi@mzuzucoffee.org	Private Sector
Kwithu Kitchen	Dr Anna Keys; John Keys , 0999852433 / 0994585584 , Anna@maloto.org	Private Sector
JHZ Enterprise	Justin Chitedze , 0999375256 , Justin.chitedze@gmail.com	Private Sector
Mapule General Dealers	Alfred Mologo , 0999423685 , Mologo47@gmail.com	Private Sector
Honey Processor Ltd	Mathews Dunga , 0884482611 , mathewsdunga@gmail.com	Honey Processor
Kandikole Farmers/Processors	Prince Tauzi , 0997828324 , tauziprince@gmail.com	Processor
Anold (Private Business Entity)	—	Private Sector

Mtakataka Beekeeping Cooperative	Enock Bene	Cooperative
Kabunduli Honey Producers & Marketing	—	Cooperative
Lweya Honey Cooperative	996306153	Cooperative
Nkhawali HPPCS Ltd	Isaac B Chirwa	Cooperative
Chituka Beekeepers Cooperative	—	Cooperative
Thazima Honey Producers & Marketing Cooperative	—	Cooperative
Team Work (TEWO)	Mr Kaunda , 0999111752	Cooperative
Katambasula Cooperative	—	Cooperative
Tikondane Beekeeping	—	Cooperative
MBPA	Amon Kabuli , 0994560095 , Amonmw.mbpa@gmail.com	Producer Association
Songani Beekeepers Association	—	Association
Thumba Honey Producers & Marketing Cooperative	—	Cooperative
Katete Beekeeping	—	Cooperative
Kachikumba Beekeeping	Jenet Itshadi; Racton Andrea , 0983832121 / 0997429344	Cooperative
Mpambazi Youth Club	—	Youth Association

Appendix 2: Household/Beekeeper Survey Questionnaire

Question	Response Code/Format
INTRODUCTION	
Farm Household Survey Questionnaire	note
Good morning/afternoon. My name is ...., and I am working with the Agricultural and Natural Resources Management Consortium (ANARMAC). We are conducting this survey on behalf of the TRADE Programme under the Ministry of Local Government. The purpose of this study is to carry out a diagnostic assessment of the honey value chain, covering all stages from pre-production, production, and post-production. We would like to learn more about your experiences with beekeeping and honey production, how honey is used, and, for those who sell it, the marketing and business aspects. Your participation in this survey is completely voluntary. You may choose not to answer any question or to withdraw at any point without any negative consequence. Please note that there are no direct personal benefits from participating in this study; however, the information you provide will be very valuable in helping to improve the honey value chain in Malawi. All the information you share will be treated with the strictest confidentiality. Your name and personal details will not appear in any report or be disclosed to anyone outside the research team. This interview will cover topics such as beekeeping practices, production, income, processing, storage, and marketing. Before we begin, do you have any questions about the survey?	note
1. Would you like to participate in this study?	1=Yes 2=No

2. Name of enumerator	1=Brain Chilewe 2=Clifford Nyondo 3=Wezzie Chisenga 4=Joseph Kazinga 5=Chipo Ngwira 6=Sandra Jeremiah 7=Beatrice Jacob 8=Alinafe Mdolo 9=Ssisquo Chavula 10=Wyson Kayenda
3. Name of supervisor	1=Ian Kumwenda 2=Don Nyirenda 3=Wezzie Chisenga
4. Respondent name	text
4a. Respondent phone number	text
SECTION A1. HOUSEHOLD IDENTIFICATION	
A1. HOUSEHOLD IDENTIFICATION	note
5. Region	1=Central 2=North 3=South
6. District	1=Nkhata Bay 2=Rumphi 3=Mzimba 4=Zomba 5=Ntchisi 6=Salima 7=Lilongwe
7. Extension Planning Area (EPA)	1=Mzenga 2=Limphatsa 3=Chinthetche 4=Mwazisi 5=Mzimba Boma 6=Nsondole 7=Thondwe 8=Chingale 9=Kalira 10=Chinguluwe 11=Tembwe 12=Mitundu 13=Other (Rumphi) 14=Other (Mzimba) 15=Other (Zomba) 16=Other (Ntchisi) 17=Other (Salima) 18=Other (Nkhata Bay)
7a. Please Specify	text
8. Traditional Authority (TA)	1=Kabunduli 2=Timbiri 3=Malengamzoma 4=Chikulamayembe 5=Kampingo Sibande 6=Nkagula 7=Nkapita 8=Chikho 9=Khombedza 10=Kalonga 11=Kuulunda 12=Other (Rumphi) 13=Other (Mzimba) 14=Other (Zomba) 15=Other (Ntchisi) 16=Other (Salima) 17=Other (Nkhata Bay) 18=Other (Lilongwe)
8a. Please specify the TA	text
8b. Group Village Head	text
8c. Village	text
9. GPS Coordinates	geopoint

10. Honey Cooperative/Club	1=Kabunduri Honey Producers and Marketing 2=Lweya Honey Cooperative 3=Nkhawali Honey Producers and Processing Cooperative Society Limited 4=Chituka Beekeepers Cooperative 5=Mpoto Cooperative 6=Thazima Honey Producers & Marketing Cooperative 7=Team Work (TEWO) 8=Katambasula Cooperative 9=Songani Beekeepers Association 10=Tikondane Beekeeping 11=Thumba Honey Producers & Marketing Cooperative 12=Katete Beekeeping 13=Kachikumba Beekeeping 14=Mpambadzi Youth Club 15=Not a member 16=Other
10a. If Yes, Please Specify	text
SECTION A2. HOUSEHOLD CHARACTERISTICS	
11. What is your relationship to the household head?	1=Household head 2=Wife/Husband 3=Son/Daughter 4=Brother/Sister 5=Parent (Mother/Father) 6=Non-relative 7=Other
12. Who in the household usually makes decisions regarding beekeeping activities?	1=Household head (male) 2=Household head (female) 3=Wife of household head 4=Husband of household head 5=Son of household head 6=Daughter of household head 7=Other
12a. If Other, specify	text
13. Sex of the Honey Farmer	1=Male 2=Female
14. Age of the farmer	integer
15. Marital status	1=Married 2=Never married 3=Divorced 4=Widowed
16. Highest Education Level	1=Never went to school 2=Primary 3=Secondary 4=College/University 5=Other
17. Number of people in the household	integer
18. Do you or household members have disabilities?	1=Yes 2=No
18a. If yes, specify type	1=Hearing Impairment 2=Mobility Impairment 3=Cognitive/Intellectual Disability 4=Mental Health Condition 5=Chronic Illness or Other Health Condition 6=Developmental/Communication Disability

19. What roles do you play in beekeeping?	1=Hive construction/repair 2=Colony management 3=Honey harvesting 4=Wax processing 5=Marketing/selling honey products 6=Freezing honey/wax products 7=Other
19a. If Other, specify	text
SECTION A3. HOUSEHOLD LIVELIHOODS PROFILE	
20. What are the main sources of income?	note
20a. Main source of income	1=Beekeeping 2=Crop farming 3=Livestock farming 4=Piece work 5=Employed 6=Non-farm business 7=Forestry products 8=Other
20b. Second source of income	1=Beekeeping 2=Crop farming 3=Livestock farming 4=Piece work 5=Employed 6=Non-farm business 7=Forestry products 8=Other
20c. Third source of income	1=Beekeeping 2=Crop farming 3=Livestock farming 4=Piece work 5=Employed 6=Non-farm business 7=Forestry products 8=Other
21. Please specify	text
22. What is the annual household income (MWK)?	integer
23. Which crops do you grow for income? (Select all that apply)	1=Maize 2=Soybean 3=Groundnuts 4=Rice 5=Cassava 6=Potatoes 7=Pigeon peas 8=Millet 9=Sunflower 10=Mangoes 11=Tobacco 12=Pawpaw 13=Other
23a. Please specify	text
24. Which livestock do you keep for income? (Select all that apply)	1=Cattle 2=Goats 3=Sheep 4=Pigs 5=Chicken 6=Ducks/Turkeys 7=Other
24a. Please specify	text
SECTION B: BEEKEEPING PRACTICES AND PRODUCTION	
25. How long have you been practicing beekeeping?	1=<1 year 2=1–3 years 3=4–6 years 4=7–10 years 5=>10 years
26. What type of hives do you use? (Select all that apply)	1=Traditional log hive 2=Top-bar hive 3=Langstroth hive 4=Other
26a. If Other, specify	text

27. How many hives do you currently own?	integer
28. How many hives are currently productive?	integer
29. Where are your apiaries located? (Select all that apply)	1=Forest 2=Woodlands 3=Homestead garden 4=Near water bodies 5=Farmland 6=Other
29a. If Other, specify	text
30. How do you acquire bees/colonies?	1=Captured from wild 2=Purchased 3=Split from own colonies 4=Other
30a. If Other, specify	text
31. How often do you inspect your hives?	1=Weekly 2=Bi-weekly 3=Monthly 4=Seasonally 5=Rarely
32. What are the main challenges you face in beekeeping? (Select all that apply)	1=Pests (e.g., ants, wax moth) 2=Predators (e.g., honey badgers, birds) 3=Diseases 4=Lack of knowledge/skills 5=Lack of equipment 6=Low productivity 7=Climate/weather 8=Other
32a. If Other, specify	text
33. How do you control pests and diseases?	1=Use of chemicals/pesticides 2=Smoke management 3=Hive relocation 4=Manual removal 5=Do nothing 6=Other
33a. If Other, specify	text
34. Do you practice seasonal migration of hives?	1=Yes 2=No
34a. If Yes, indicate distance of migration (km)	integer
35. How many honey harvests do you obtain per year?	1=1 2=2 3=3 4=4+
36. Average quantity of honey harvested per hive per season (litres)	decimal
37. How do you store harvested honey? (Select all that apply)	1=Plastic jars 2=Glass jars 3=Clay pots 4=Metal containers 5=Other
37a. If Other, specify	text
38. Do you process honey before selling?	1=Yes 2=No
38a. If Yes, what type of processing do you carry out? (Select all that apply)	1=Filtering 2=Heating 3=Packaging 4=Wax removal 5=Other
38b. If Other, specify	text

39. Do you produce other bee products?	1=Yes 2=No
39a. If Yes, which ones? (Select all that apply)	1=Beeswax 2=Propolis 3=Royal jelly 4=Bee pollen 5=Other
39b. If Other, specify	text
40. Do you have beekeeping training?	1=Yes 2=No
40a. If Yes, who provided the training?	1=Government Extension 2=NGO 3=Private Consultant 4=Cooperative/Club 5=Other
40b. If Other, specify	text
41. Are you aware of environmental practices to improve honey productivity?	1=Yes 2=No
41a. If Yes, which practices do you apply? (Select all that apply)	1=Tree planting/reforestation 2=Preserving water sources 3=Maintaining flowering plants 4=Habitat protection 5=Other
41b. If Other, specify	text
42. Do you participate in any collective honey production activities?	1=Yes 2=No
42a. If Yes, specify type	1=Cooperative/Club 2=Group marketing 3=Joint honey harvesting 4=Training sessions 5=Other
42b. If Other, specify	text
SECTION C: HONEY MARKETING, SALES, AND VALUE ADDITION	
43. Do you sell honey?	1=Yes 2=No
43a. If Yes, what proportion of your harvest do you sell (%)	integer
44. Who are your main buyers? (Select all that apply)	1=Individual consumers 2=Retailers 3=Wholesalers 4=Cooperatives/associations 5=Processors 6=Exporters 7=Other
44a. If Other, specify	text
45. How do you sell honey?	1=Direct sales 2=Through cooperative/club 3=Middlemen 4=Other
45a. If Other, specify	text

46. What is the unit you use to sell honey?	1=Kilograms 2=Litres 3=Bucket (20 litres) 4=Other
46a. If Other, specify	text
47. Current selling price per unit (MWK)	integer
48. Average selling price last season (MWK/unit)	integer
49. Have prices changed in the last 2 years?	1=Yes 2=No
50. Payment methods for buyers	1=Cash on delivery 2=Credit 3=Other
50a. If Other, specify	text
51. Do you package honey for sale?	1=Yes 2=No
51a. If Yes, what type of packaging? (Select all that apply)	1=Plastic bottles/jars 2=Glass jars 3=Metal tins 4=Clay pots/traditional gourds 5=Waxed containers/combs 6=Other
51b. If Other, specify	text
52. Do you face challenges in marketing honey?	1=Yes 2=No
52a. If Yes, what challenges? (Select all that apply)	1=Low prices 2=Limited market access 3=Transport challenges 4=Storage limitations 5=Middlemen exploitation 6=Quality standards 7=Other
52b. If Other, specify	text
53. What determines your buyer's choice? (Select all that apply)	1=Price 2=Payment reliability 3=Distance to market 4=Through contracts 5=Trust 6=Other
53a. If Other, specify	text
54. What proportion of honey sold is processed (%)	integer
55. What proportion of honey sold is raw (%)	integer
56. How much revenue did you earn from honey last year (MWK)?	integer
57. Are you satisfied with current prices?	1=Yes 2=No
58. What would be a fair price for honey (MWK/unit)?	integer
59. List three major constraints in honey marketing	1=High production costs 2=Limited market access 3=Price fluctuations 4=Lack of market info 5=Middlemen setting unfair prices 6=Other

59a. If Other, specify	text
60. How do you transport honey to market? (Select all that apply)	1=Own transport 2=Vendors collect 3=Public transport 4=Other
60a. If Other, specify	text
61. What is the transport cost to the market (MWK)	integer
62. What is the travel time to the nearest market (minutes)	integer
63. Do you have access to market information?	1=Yes 2=No
63a. If Yes, sources of market information (Select all that apply)	1=Government extension 2=Radio/TV 3=Traders 4=Farmer clubs 5=Other farmers 6=Other
63b. If Other, specify	text
64. Are you aware of rules affecting honey marketing?	1=Yes formal (cooperative/government) 2=Yes informal (community/trusted buyers) 3=No
65. If rules exist, who enforces them?	1=Cooperative/association 2=Traditional/community leaders 3=Local government 4=Traders/buyers 5=Other
65a. If Other, specify	text
66. Do these rules affect honey prices or volumes?	1=Yes, positively 2=Yes, negatively 3=No impact
67. How do you usually agree on honey prices with buyers?	1=Buyer sets price 2=Negotiation 3=Cooperative sets price 4=Other
67a. If Other, specify	text
68. Do you work with traders/processors?	1=Yes 2=No
68a. If Yes, what benefits do you get? (Select all that apply)	1=Guaranteed market 2=Better prices 3=Timely payment 4=Access to packaging/processing 5=Technical support 6=Other
68b. If Other, specify	text
69. Challenges when working with traders/processors (Select all that apply)	1=Low prices 2=Distance 3=Transport issues 4=Other
69a. If Other, specify	text
SECTION D1: EMPLOYMENT & LABOR	
70. Do you employ people to assist in beekeeping?	1=Yes 2=No

71. How many people do you employ in total?	integer
71a. Out of total workers, how many are temporary?	integer
71b. Out of total workers, how many are permanent?	integer
72. If Yes, how much do you pay them per week?	1=<1,000 MWK 2=1,000 MWK 3=2,000 MWK 4=2,000–5,000 MWK 5=>5,000 MWK 6=Monthly payments 7=Other
72a. If Other, specify	text
72b. If monthly, specify amount (MWK)	decimal
73. How do you access labor?	1=Work alone/family 2=Temporary 3=Full-time workers 4=Other
73a. If Other, specify	text
74. Do you work with beekeeping input suppliers?	1=Yes 2=No
75. Benefits of working with input suppliers (Select all that apply)	1=Supply equipment 2=Credit 3=Extension services 4=Other
75a. If Other, specify	text
76. Challenges faced when working with input suppliers (Select all that apply)	1=Far away 2=Expensive 3=Other
76a. If Other, specify	text
77. Benefits of working with other beekeepers (Select all that apply)	1=Group work 2=Cooperatives 3=Joint marketing 4=Extension 5=Input sharing 6=Other
77a. If Other, specify	text
78. Do you work with other beekeepers?	1=Yes 2=No
79. Challenges working with other beekeepers (Select all that apply)	1=Far away 2=Uncooperative 3=Lack of skills 4=Other
79a. If Other, specify	text
80. Benefits working with traders/processors (Select all that apply)	1=Guaranteed market 2=Better prices 3=Timely payment 4=Access to packaging/processing 5=Access to training/technical support 6=Other
80a. If Other, specify	text

81. Do you work with traders/suppliers?	1=Yes 2=No
82. Challenges working with traders/processors (Select all that apply)	1=Low prices 2=Far away 3=Transport issues 4=Other
82a. If Other, specify	text
SECTION D2: CAPITAL & FINANCE	
83. How do you pay for inputs?	1=Own money 2=Barter 3=Loan 4=Other
83a. If Other, specify	text
84. Have you accessed beekeeping loans?	1=Yes 2=No
85. Source of beekeeping loans	text
86. Year you accessed the loan	date
87. Purpose of the loan	text
88. Major constraints in accessing finance (Select all that apply)	1=Risky 2=High interest 3=Paper work 4=No lenders 5=Insufficient amount 6=No collateral 7=Other
88a. If Other, specify	text
89. Do you use insurance for beekeeping?	1=Yes 2=No
90. Specify the insurance type (Select all that apply)	1=Bee colony insurance 2=Beehive/equipment insurance 3=Honey production insurance 4=Weather-index insurance 5=Other
90a. If Other, specify	text
91. Purpose of insurance (Select all that apply)	1=Protect colonies against pests/diseases/theft 2=Cover losses from weather events 3=Secure beehives/tools/equipment 4=Protect honey yield/income 5=Access loans/credit 6=Other
91a. Main sources of capital/finance for honey business (Select all that apply)	1=Own savings 2=Family/friends 3=Village savings group 4=Cooperative/association 5=Commercial bank 6=NGO/government program 7=Other
91b. If Other, specify	text
SECTION E1: COOPERATIVE MEMBERSHIP	
92. Do you belong to a cooperative?	1=Yes 2=No

93. What services does the cooperative provide (Select all that apply)	1=Supply inputs 2=Training & extension 3=Access to credit 4=Collective marketing 5=Processing/packaging 6=Advocacy/representation 7=Other
93a. If Other, specify	text
94. Years being a member	date
95. Membership fee (MWK)	integer
96. Main benefits of being in the cooperative (Select all that apply)	1=Better market access 2=Better prices 3=Access to inputs 4=Access to credit/loans 5=Access to training/extension 6=Collective bargaining 7=Networking/sharing experiences 8=Income stability 9=Product certification support 10=Other
96a. If Other, specify	text
97. Main challenges of being in the cooperative (Select all that apply)	1=Poor management 2=Lack of transparency 3=Delayed payments 4=Limited market access 5=High fees 6=Conflicts among members 7=Unequal participation 8=Lack of trust 9=Limited training/support 10=Other
97a. If Other, specify	text
98. What could be done to improve the cooperative?	text
99. Future opportunities for the cooperative (Select all that apply)	1=Expand markets 2=Value addition 3=Access better equipment/technology 4=Training & capacity building 5=Stronger networks/partnerships 6=Collective bargaining 7=Diversify into other bee products 8=Access loans/financial services 9=Environmental conservation initiatives 10=Other
99a. If Other, specify	text
100. Extent member feels they can influence decisions	1=None 2=Small 3=Medium 4=High
SECTION E2: ENVIRONMENTAL PRACTICES	
101. Do you practice environmental management to support beekeeping?	1=Yes 2=No

102. Environmental practices undertaken (Select all that apply)	1=Tree planting 2=Avoid pesticide use 3=Maintain bee forage areas 4=Forest management 5=Water source protection 6=Soil conservation 7=Other
102a. If Other, specify	text
103. At what level are practices done?	1=Individual 2=Group/cooperative 3=Both 4=Other
103a. If Other, specify	text
104. Frequency of engagement	1=Weekly 2=Monthly 3=Seasonally 4=Annually 5=Other
104a. If Other, specify	text
105. Have these practices made a difference?	1=Big improvement 2=Small improvement 3=No change 4=Too early
106. Describe impact (Select all that apply)	1=Improved forage availability 2=Increased honey production 3=Reduced bee mortality 4=Improved colony strength 5=Enhanced biodiversity 6=Reduced chemical exposure 7=Climate resilience 8=Other
106a. If Other, specify	text
107. Challenges/costs in adopting environmental practices (Select all that apply)	1=Lack of seedlings 2=High input costs 3=Lack of knowledge 4=Limited labor/time 5=Fires/deforestation/vandalism 6=Other
107a. If Other, specify	text
108. Environmental problems affecting honey production (Select all that apply)	1=Deforestation 2=Bush fires 3=Drought 4=Flooding/strong winds 5=Decline in flowering 6=Pests/diseases 7=Other
108a. If Other, specify	text
109. Support needed to strengthen/expand practices (Select all that apply)	1=Free/subsidized seedlings 2=Training on sustainable management 3=Inputs/equipment 4=Awareness campaigns 5=Support local by-laws 6=Financial/technical support 7=Other
109a. If Other, specify	text
SECTION F1: OTHER BEE PRODUCTS	
110. Do you produce other bee products besides honey?	1=Yes 2=No
111. Which other bee products do you produce? (Select all that apply)	1=Beeswax 2=Propolis 3=Royal jelly 4=Bee pollen 5=Bee venom 6=Other

111a. If Other, specify	text
112. Quantity produced annually (kg or liters)	numeric
113. How do you process these products?	1=Raw sale 2=Manual extraction 3=Mechanical processing 4=Other
113a. If Other, specify	text
114. How do you market these products?	1=Local markets 2=Cooperatives 3=Traders/processors 4=Direct to consumers 5=Other
114a. If Other, specify	text
115. Price per unit (MWK)	decimal
116. Main challenges in production/marketing of other bee products (Select all that apply)	1=Lack of market 2=Lack of knowledge/skills 3=High production cost 4=Processing equipment shortage 5=Storage issues 6=Low prices 7=Other
116a. If Other, specify	text
117. Support needed to expand production/marketing (Select all that apply)	1=Training 2=Access to equipment 3=Access to finance 4=Market linkages 5=Quality standards/certification 6=Other
117a. If Other, specify	text
SECTION G1: GENDER PARTICIPATION	
118. Are women actively involved in beekeeping activities?	1=Yes 2=No
119. Are youth actively involved in beekeeping activities?	1=Yes 2=No
120. Are people with disabilities (PWDs) involved in beekeeping activities?	1=Yes 2=No
121. Roles performed by women (Select all that apply)	1=Hive management 2=Honey harvesting 3=Processing & packaging 4=Marketing & selling 5=Finance & record-keeping 6=Environmental management 7=Other
121a. If Other, specify	text
122. Roles performed by men (Select all that apply)	1=Hive construction 2=Hive placement 3=Colony management 4=Harvesting 5=Marketing & selling 6=Transport 7=Other
122a. If Other, specify	text

123. Roles performed by youth (Select all that apply)	1=Hive inspection 2=Harvesting 3=Processing 4=Marketing & selling 5=Other
123a. If Other, specify	text
124. Roles performed by PWDs (Select all that apply)	1=Processing & packaging 2=Marketing & selling 3=Record keeping 4=Other
124a. If Other, specify	text
125. Gender-specific challenges in beekeeping (Select all that apply)	1=Limited access to land 2=Limited access to inputs 3=Lack of skills/training 4=Limited access to finance 5=Time constraints 6=Social norms/cultural barriers 7=Other
125a. If Other, specify	text
126. Measures to improve gender equality in beekeeping	text

Appendix 3: FGDs Guides

Welcome and thank you for participating in this focus group discussion. My name is ________, and I am conducting a diagnostic study on Malawi's honey value chain under the Transforming Agriculture through Diversification and Entrepreneurship (TRADE) Programme. This discussion aims to understand your cooperative's role in the honey sector, including production, marketing, challenges, and opportunities, to improve livelihoods, inclusivity, and sustainability. Your insights are valuable, and there are no right or wrong answers. Please feel free to share openly, and we'll ensure everyone has a chance to speak. All information will be kept strictly confidential, and personal details will not be shared. The discussion will take about 60–90 minutes. We will record notes and, with your permission, audio for accuracy. Do you have any questions before we begin?
Are you willing to participate? [Obtain verbal consent from all participants.]

Recording Information

- Group Type: Honey Cooperatives/Associations
- Cooperative/Association Name: ________________________
- Number of Participants: ________________________
- Gender Breakdown: ___ Male / ___ Female / ___ Other
- Age Range: ________________________
- Disability Status: ___ Participants with Disabilities / ___ Without Disabilities
- District: ________________________
- Date: ________________________
- Time Started: ________________________
- Time Finished: ________________________
- Contact Details: ________________________
- Facilitator's Name: ________________________

FGD Guide: Honey Cooperatives and Associations
Objective: Gather insights on the role, operations, challenges, and opportunities of cooperatives/associations in the honey value chain.
Introduction Round: Can each of you share your name, role in the cooperative/association, and how long you've been involved?
Section A: About the Cooperative

1. Cooperative role and history
2. What is the main role of your cooperative/association in the honey sector (e.g., helping members sell honey, buying inputs, training, processing)?
3. How many members do you have, and what proportion of beekeepers in this area belong to the cooperative?
4. How is leadership chosen? How many positions are held by women, youth, or persons with disabilities?

Section B: Honey Production & Costs

4. What types of hives do members use (traditional, top-bar, Langstroth), and how much honey do you usually harvest from each per year?
5. What are the main costs of beekeeping for members? Please think about:

- Buying hives
- Protective clothing (suits, gloves, boots)
- Smokers and harvesting tools
- Bee colonies or catching swarms
- Transport of materials/honey
- Labour (family or hired help – how much would you pay someone locally?)
- Training costs
- Repairs and maintenance
- Packaging (buckets, bottles, jars)

6. What challenges do members face when keeping bees or harvesting (e.g., pests, diseases, fire, theft, climate change)?

Section C: Inputs & Processing

7. How do members get access to inputs (hives, smokers, gear, packaging materials)? What difficulties do you face in getting these?
8. Does the cooperative process honey or make other products (beeswax, candles, propolis, cosmetics)? If yes:
    - What equipment or methods do you use?
    - What are the costs (equipment, labour, utilities, consumables)?
    - What income do you earn from raw honey vs. processed products?

Section D: Markets & Selling Honey

9. Who do you normally sell honey to (traders, processors, shops, directly to consumers)?
10. About how much honey do you sell per year, and at what average price per kg or bucket?
11. Do you sell outside your district, or even outside Malawi? If yes, where, and what challenges do you face (e.g., transport, standards, permits)?
12. Why do some members sell honey on their own instead of through the cooperative?
13. Are there any formal or informal rules that shape how honey is traded (e.g., buyer requirements, local by-laws, traditional practices, verbal agreements)? How do these affect members?

Section E: Linkages, Support & Inclusion

14. Which other organizations do you work with (suppliers, buyers, NGOs, government)? What support have you received, and what would be more helpful?
15. How involved are women, youth, and persons with disabilities in your cooperative? What challenges do they face, and what steps have you taken to support them?

Section F: Environment & Sustainability

16. What practices do members use to protect the environment (e.g., tree planting, controlled fire use, safe harvesting)?
17. How have issues like deforestation or climate change affected honey production in your area?

Section G: Finance & Future Opportunities

18. How do members or the cooperative access money to run activities (loans, savings, grants, selling assets)? What difficulties do you face in getting finance?
19. What opportunities do you see for the cooperative to grow (e.g., new products, better packaging, new markets, partnerships)?
20. What changes in rules, policies, or support from programmes like TRADE would make it easier for you to succeed?

Closing

- What recommendations would you give to improve honey production and marketing in Malawi?
- Is there anything else you would like to share?

Appendix 4: KII Guides

Government/Regulatory Officials

Ministry of Agriculture (DAHLD)

1. What is DAHLD's role in supporting and regulating honey production and beekeeping in Malawi?
2. Do you collect data on honey production, hive numbers, and beekeeping households? What are the main gaps in this data?
3. What services (extension, training, research) are provided to beekeepers?
4. What challenges limit honey productivity and commercialization?
5. Are there specific programmes or strategies promoting honey commercialization?
6. How do you coordinate with other agencies such as Trade, Forestry, and MBS in honey sector development?
7. Are there policy or regulatory gaps that need to be addressed to strengthen the honey subsector?
8. How could TRADE best support DAHLD's role in the honey sector?

Ministry of Trade

1. How does the Ministry support honey and bee product trade?
2. How do you help producers and exporters access domestic, regional, and international markets?
3. Do you track honey exports and imports (volumes, values, destinations, origins)?
4. What are the main opportunities for exporting Malawian honey within SADC, COMESA, and beyond?
5. What are the biggest barriers to trade (tariffs, certification, logistics, competition)?
6. Are honey and bee products included in trade policies or export strategies?
7. How do you coordinate with MITC, MRA, and MBS to promote honey exports?
8. What trade facilitation measures could make Malawian honey more competitive?
9. How can TRADE help strengthen honey trade promotion?

Malawi Bureau of Standards (MBS)

1. What standards and testing requirements apply to honey and bee products in Malawi?
2. Do you provide testing, inspection, and certification services for honey exporters? How many comply?
3. What are the costs and timelines for certification, and how do they affect producers and processors?
4. What challenges exist in meeting MBS or international honey standards?
5. Do you collaborate with regional or international standards bodies?
6. How do you handle non-compliant honey on the market?

7. What capacity gaps exist at MBS (labs, staff, equipment) for supporting the honey sector?
8. How could certification and compliance processes be made easier with TRADE support?

Malawi Revenue Authority (MRA)

1. How is honey classified under customs and tariff codes?
2. What data do you have on honey exports and imports (volumes, values, destinations, origins)?
3. What duties, VAT, or taxes apply to honey trade?
4. Are there challenges in capturing accurate trade data (misclassification, underreporting)?
5. How do you coordinate with Trade, MITC, and NSO in monitoring honey flows?
6. How significant is informal cross-border honey trade, and how is it tracked?
7. What incentives could support formal honey exports?
8. How could TRADE help MRA improve honey trade data and compliance?

Malawi Investment and Trade Center (MITC)

1. What role does MITC play in promoting honey exports and investment?
2. Do you have records of honey export volumes, buyers, and supported markets?
3. Which export destinations are most promising for Malawian honey?
4. What key buyer requirements (certification, packaging, branding) must exporters meet?
5. What challenges do honey exporters face when working with MITC?
6. Are there investment opportunities in honey processing, packaging, or value addition?
7. How does MITC coordinate with MBS, MRA, and Trade to support exporters?
8. How could TRADE help MITC increase honey exports and investment?

Department of Forestry / Wildlife & Parks

1. How does beekeeping fit into forest and wildlife management strategies?
2. Is beekeeping promoted as an alternative or complementary livelihood for forest communities?
3. How does beekeeping help reduce deforestation, fires, or illegal logging?
4. What regulations govern beekeeping in forest reserves and protected areas?
5. Do you collaborate with DAHLD, NGOs, or cooperatives on forest-friendly apiculture?
6. What challenges do beekeepers face in forest areas (access, conflicts, fire management)?
7. Are there forestry or conservation programmes that include honey production?
8. What opportunities exist for scaling up forest-based beekeeping under TRADE?

National Statistical Office (NSO)

1. Does NSO collect data on honey production, processing, or trade?
2. Which surveys or systems include honey (Agriculture Census, IHS, trade statistics)?
3. How reliable and comprehensive is the existing honey data?
4. How are informal honey production and trade flows captured?

5. What are the main data gaps for honey and apiculture?
6. How do you collaborate with DAHLD, Trade, and MRA to share honey statistics?
7. What opportunities exist to strengthen honey data collection (digital tools, cooperative reporting, new survey modules)?
8. How could TRADE support NSO in improving honey/apiculture data collection and dissemination?

Honey Processors, Aggregators, Manufacturers & Offtakers

Section A: Background & Role

1. Please tell us about your enterprise (year established, ownership, size) and its main activities in the honey sector.
2. What honey or honey-based products do you handle (e.g., raw honey, processed, beeswax, cosmetics, beverages)?

Section B: Supply & Procurement

3. Where do you source honey from (districts, cooperatives, farmers, aggregators), and what volumes do you procure annually?
4. What is the average purchase price you pay per kg, and what factors influence it?
5. What are the main challenges in sourcing (e.g., quality, consistency, transport, seasonality)?

Section C: Processing, Costs & Profitability

6. What processing methods or technologies do you use (filtration, pasteurization, packaging, by-product recovery)?
7. Please outline your **initial investment costs** when setting up or expanding your processing operations, such as:

- Processing equipment (e.g., extractors, filters, pasteurizers,)
- Buildings or processing facilities
- Certification & licensing fees (initial)
- Branding & product development
- Other one-time start-up investments

8. Please estimate your **annual operating cost components** (in MWK), including:

- Raw honey purchases
- Packaging & branding materials
- Labour (number of employees & wage bill)
- Transport & logistics
- Equipment servicing & maintenance
- Certification & compliance (renewals)
- Utilities (electricity, fuel, water)
- Other recurring expenses

9. What is your average output (packaged volumes) per year, and at what average selling price?
10. What are your main revenue streams (raw honey, processed honey, beeswax, propolis, cosmetics, etc.), and which are most profitable?
11. Overall, how profitable is your business (gross or net margin if possible)?

Section D: Value Addition & Markets

12. Beyond raw honey, what value-added products or activities do you engage in (e.g., packaging, branding, cosmetics, beeswax products, certification)?
- If none, do you see opportunities for future value addition?
13. Who are your main buyers (supermarkets, hotels, pharmacies, export clients)? Roughly what proportion of sales go to domestic vs. regional/export markets?
14. What challenges do you face in reaching higher-value markets (e.g., tariffs, certification, logistics, competition from imports)?
15. Are there any formal or informal rules that shape how honey is traded in Malawi (e.g., buyer requirements, quality standards, traditional norms)?

Section E: Finance, Policy & Support

16. How do you finance your operations (own capital, loans, donor support), and what financing challenges do you face? If affordable finance were available, what would you prioritize investing in?
17. Which policies, regulations, or standards (e.g., MBS, DAHLD, Control of Goods Act) most affect your business? What challenges do you face with certification or export permits?
18. Have you received support from government, TRADE, NGOs, or development partners? If yes, in what form, and how useful was it?

Section F: Inclusivity & Sustainability

19. How many people do you employ (men, women, youth, persons with disabilities)? Do you have measures to support inclusive participation in your workforce or supply chains?
20. How have climate change or deforestation affected your honey supply? What sustainability measures are you following (eco-packaging, forest-friendly sourcing, partnerships with cooperatives), and what additional steps would help ensure long-term sustainability?

Closing

- What recommendations would you give to strengthen Malawi's honey value chain, especially for processors and offtakers?
- Is there anything else you'd like to add?

Input Suppliers

1. Can you tell us about your business and the main products you supply to beekeepers?
2. Who are your main customers (cooperatives, individual beekeepers, NGOs)?
3. What are your most in-demand products, and how have sales changed in recent years?
4. What are the average prices for your key products (hives, protective clothing, smokers, packaging, bee feed)?
5. What challenges do you face in sourcing or producing these inputs (materials, costs, transport)?
6. How affordable are your products for smallholder beekeepers? Do they buy regularly or only when supported by projects/NGOs?
7. Do you offer training, after-sales support, or credit facilities to your customers?

8. Are there local standards or quality checks for beekeeping inputs? If not, should there be?
9. How does seasonality affect demand for your products?
10. What opportunities do you see to improve access and affordability of beekeeping inputs in Malawi?

Estates and Large-Scale Beekeepers

Respondent's Name: ________________________
Organization & Role in Honey Value Chain: ________________________
Position: ________________________
Date: ________________________
Time Started: ________________________
Time Finished: ________________________
Contact Details: ________________________
District: ________________________

Section A: Background & Enterprise Profile

1. Can you briefly describe your enterprise/estate (year established, ownership, location) and the scale of operations (number of hives, apiaries, staff, training)?
2. Do you primarily:
   - Produce honey from your own hives?
   - Aggregate/buy from smallholder farmers?
   - Both?

Section B: Production Systems & Practices

3. What hive types do you use (traditional, top-bar, Langstroth)? Approximate numbers for each? Why?
4. How many of your hives are active/colonized?
5. What is your **average yield per hive (kg)** and **number of harvests per year**, by hive type?
6. What was your total honey production:
   - Last season (kg/MT)?
   - Average for the past 3–5 years?
7. What proportion of your total honey comes from own production vs. sourced from others?
8. What are the main challenges in maintaining bee colonies (pests, inputs, diseases, forage, climate change, fire, theft)?
9. What practices do you use for environmental sustainability (reforestation, bee forage management, pesticide control, use of smokers vs. fire)? Please provide estimates (e.g., hectares reforested, number of smokers).

Section C: Costs, Production & Profitability

Production-Level Costs

10. What were your major **initial investments**?
    - Hives (traditional, top-bar, Langstroth)
    - Protective gear (suits, gloves, boots, veil, smoker)
    - Hive tools (knife, brush, buckets, harvesting kit)
    - Apiary setup (stands, fencing, land preparation)
11. What are your **recurring/operating costs**?

- Labour (wage rates, if applicable)
- Transport to/from apiaries
- Hive maintenance & repairs
- Replacement of gear/tools
- Training of staff/beekeepers
- Inputs (sugar for feeding, medicines, repellents)

Processing-Level Costs (if applicable)

12. Do you process honey or other hive products? If yes:

- **Methods and equipment used:** filtering, pasteurizing, packaging
- **Initial investments:**
- Honey extractors
- Filters and settling tanks
- Storage containers (food-grade drums, tanks)
- Bottling and packaging machinery
- Facility construction/refurbishment
- Other equipment (wax press, cosmetic processing kit)
- **Recurring costs:**
- Labour for processing
- Packaging and branding (bottles, labels, seals, boxes)
- Transport and logistics
- Certification and compliance (MBS, export permits, lab testing)
- Utilities (electricity, water, fuel)
- Equipment maintenance and repairs
- Rent and other overheads

Profitability & Product Details

13. What is your average annual output and selling price for honey, beeswax, and other products?
14. What are your main revenue streams, which products are most profitable, andwhat proportion of honey is sold raw vs. processed?
15. How do you ensure product quality (MBS compliance, lab testing, certifications, traceability), and what challenges do you face in meeting domestic/export standards?
16. Overall, do you consider your enterprise financially viable?

Section D: Sourcing and Relationships with Others

17. Do you source honey from smallholder beekeepers or cooperatives and others? If yes:

- How do you identify and contract suppliers?
- What pricing or quality arrangements do you use?
- What volumes (kg/MT) and prices (MWK/kg) do you source annually?

18. Do you provide inputs, training, or financing support to your smallholder suppliers?

Section E: Marketing, Sales & Demand

19. Where and how do you sell your products (channels, volumes, prices)? Do you experience seasonal demand fluctuations or unmet demand?
20. Have you tried to access regional or export markets? If yes:

- Which countries?
- What volumes and prices?
- What were buyer requirements (specifications, certifications standards)?
- What challenges did you face?

21. How do you see domestic demand evolving (drivers such as health, taste, income)? What growth rates or per capita consumption do you anticipate?

Section F: Finance, Policy & Support

22. How do you finance your operations (own capital, loans, donor support), and what financing challenges do you face? If affordable finance were available, what would you prioritize investing in?
23. Which policies, regulations, or standards (e.g., MBS, DAHLD, Control of Goods Act) most affect your business? What challenges do you face with certification or export permits?
24. Have you received support from government, TRADE, NGOs, or development partners? If yes, in what form, and how useful was it?

Section G: Cross-Cutting Issues

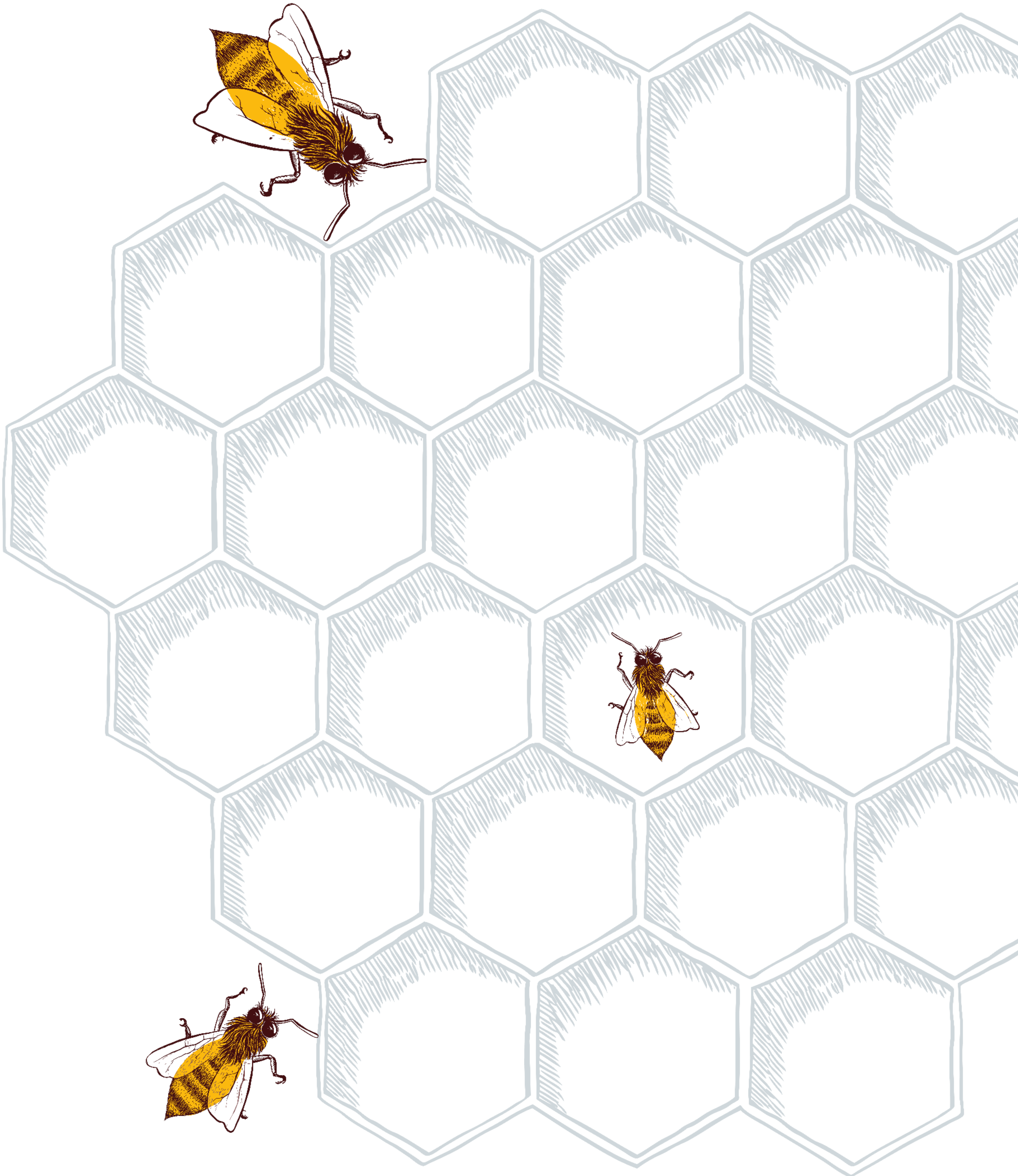
25. How do you integrate **women, youth, or persons with disabilities** into your operations (employment, training, leadership)? Approximate percentages?
26. How is climate change affecting your operations, and what innovations (technological, organizational, financial, market-based) could improve large-scale beekeeping viability and sustainability?

Donors, Development Partners & NGOs

1. Can you briefly describe your organisation's role in supporting Malawi's honey or wider agriculture/agribusiness sector?
2. What programmes or projects related to honey, beekeeping, or natural resources have you supported in Malawi?
3. What are the key objectives and results you expect from your support in this sector?
4. Which groups have been the main beneficiaries of your programmes (smallholders, cooperatives, processors, women, youth)?
5. What successes have you seen so far in honey-related interventions, and what lessons have been learned?
6. What challenges or barriers have limited the impact of your programmes (e.g., coordination, funding levels, uptake by communities)?
7. How do you coordinate with other donors, NGOs, and government actors to avoid duplication in the honey sector?
8. How do you ensure sustainability of interventions once project funding ends?
9. How do you view Malawi's potential for honey exports and regional trade?
10. What opportunities do you see for scaling up or expanding donor support in the honey value chain?
11. How can the TRADE Programme best complement or build on your current efforts?

Associations, unions

1. Can you briefly describe your organization's role in supporting honey producers and the honey value chain?
2. Approximately how many members or groups are engaged in beekeeping, and in which districts or regions?
3. What services do you provide to members (e.g., training, input supply, finance, aggregation, marketing, advocacy)?
4. How do you collect or track data on honey production and sales from your members? What gaps exist?
5. What are the main challenges your members face in honey production, processing, or marketing?
6. Are there any formal or informal rules in the honey market that affect how your members trade?
7. How do you support members to access better markets (domestic, processors, exporters)?
8. What role does your organization play in promoting quality assurance and compliance with standards?
9. How do you ensure participation of women, youth, and persons with disabilities among your members? What barriers remain?
10. What opportunities do you see for scaling up honey production, value addition, and trade under the TRADE Programme?



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