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Transforming Malawi's Apiculture Sector from a Conservation Tool into a Commercial Engine for Inclusive Growth

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Key Messages

- Malawi's apiculture sub-sector presents a clear climate-smart pathway to enhance rural incomes, biodiversity, and ecosystem resilience.
- Despite its commercialisation potential, the sub-sector remains underdeveloped, with significant gaps in productivity and commercialisation arrangements.
- Malawi is well positioned to develop a globally competitive organic honey industry through strategic investments in apiculture.
- The sector must transition from a conservation-focused activity to a commercially driven value chain.
- Commercial growth will require stronger institutions, technical capacity, quality standards, and market systems.
- Sustainable sector growth will require improved production practices, aggregation, and management of production risks.

Introduction

Malawi's apiculture sub-sector offers a valuable yet underutilized opportunity for agricultural growth, environmental sustainability, and rural development. As a low-cost, climate-resilient activity, apiculture can enhance household income, employment, food security, pollination services, biodiversity, and ecosystem resilience. Though Malawi lacks a dedicated national apiculture strategy, the sector is increasingly recognized, either directly or indirectly, in major policies, including the National Agriculture Policy (2024–2029), environmental policies, and Malawi 2063.[123] These frameworks position apiculture as a strategic enterprise for diversification, sustainable resource management, and inclusive growth.

The current state of the apiculture value chain is that it is mostly promoted by Non-Governmental Organisations (NGOs) as a forest conservation tool. It provides tangible economic value to standing trees and aligns conservation with the urgent need for diversified, resilient household income. Thus, very few individuals and producer

groups are using it as a fully-fledged commercial enterprise. To fully harness the commercial value of the value chain, it must navigate a pivotal strategic transition, evolving from a localized tool for forest conservation to a prioritized commercial agricultural node. This shift must reframe apiculture not merely as a "green" activity to mitigate community pressure on protected areas, but as a high-value communal enterprise essential for rural economic empowerment, national biodiversity, and diversification of foreign exchange generation.

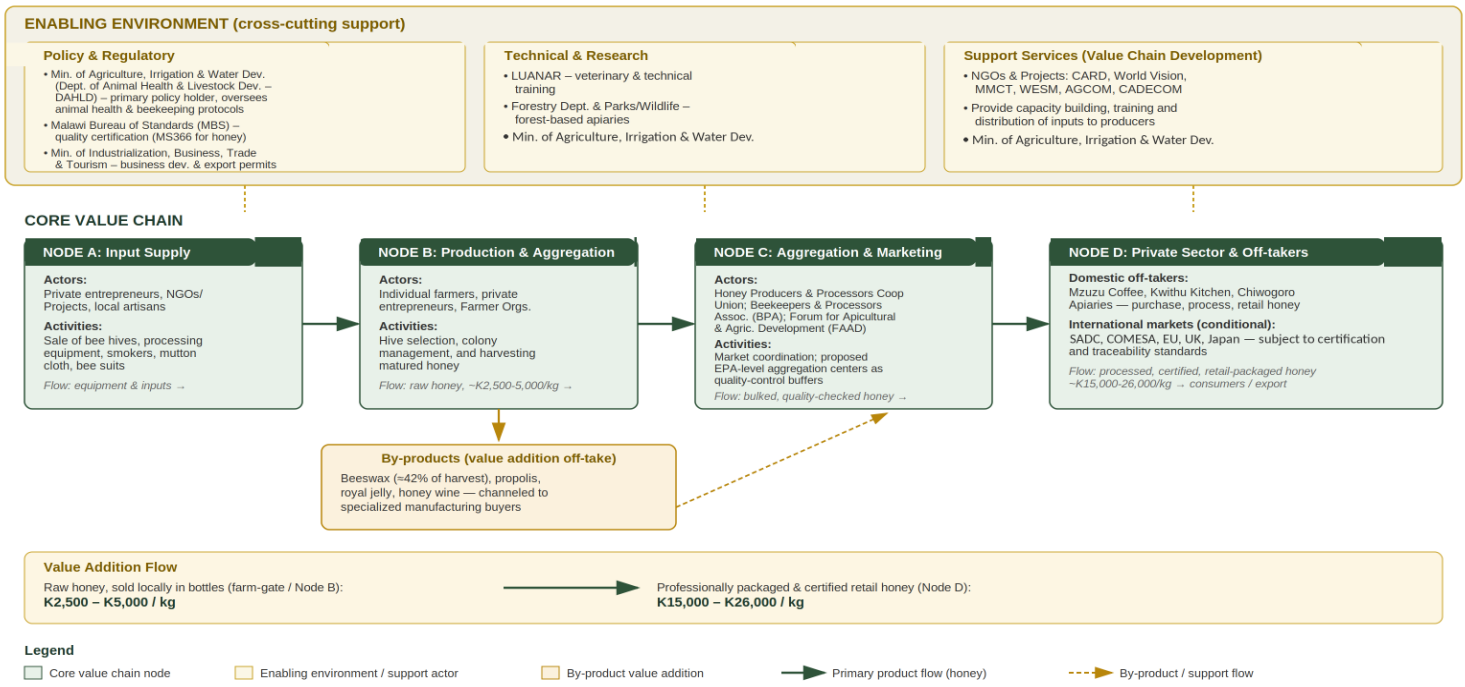
The broader European Union (EU) funded Ulimi ndi Chilengedwe (UCHI) Programme is one of the interventions supporting the commercialization of apiculture in Malawi. This policy brief outlines a strategic roadmap for transforming Malawi's apiculture from a fragmented conservation tool into a high-value commercial industry.

Methodology

The policy brief is based on data that was collected through a multi-stakeholder consultative approach. It synthesizes data from technical experts in public and private institutions, processors, aggregators, producers, input sellers, and development actors across the country. Figure [1] below presents the apiculture value chain, showing product flow, market linkages, and the enabling environment.

Value chain map

Figure 1: Malawi apiculture value chain map: Product flow, market linkages and the enabling environment



Source: Authors' schematic representation of the Malawian apiculture value chain based on stakeholder consultations

Levels run left to right (Input Supply → Production → Aggregation/Marketing → Off-take/Export); enabling environment provides cross-cutting support to all nodes.

The apiculture value chain has four main nodes: input supply; production and aggregation; marketing; and off-taking (Figure 1). An enabling environment, provided by policy bodies, such as the Ministry of Agriculture, Irrigation and Water Development (MoAIWD), the Malawi Bureau of Standards (MBS) and the Ministry of Industrialisation, Business Trade and Tourism (MoIBTT), technical and research institutions, such as Lilongwe University of Agriculture and Natural Resources (LUANAR), Forestry Department), and Non-Governmental Organisations (NGOs), supports the chain through standards and capacity building. A separate product stream (beeswax, propolis, royal jelly, honey wine) branches off at production for specialized buyers, while value addition significantly increases prices from raw honey to packaged and branded retail honey.

Institutional and technical analysis of the value chain

The apiculture sub-sector has recently undergone an institutional realignment, shifting from the Department of National Parks and Wildlife and the Forestry Department within the Ministry of Natural Resources and Climate Change (MNRCC) to the Department of Animal Health and Livestock Development (DAHLD) in the Ministry of Agriculture, Irrigation and Water Development (MoAIWD). This move complies with the requirements of the World Organisation for Animal Health (OIE), an intergovernmental organization that sets global standards for animal health and veterinary public health. However, the move appears to have resulted in a loss of deep-seated institutional knowledge and a lack of a clear national protocol for the sub-sector's development. Besides, most current investments are project-driven, with little focus on sustainability. To inspire commercialisation and bridge the gap between conservation and commercialisation objectives, in 2026, players in the sector established an umbrella organisation called “Honey Producers and Processors Cooperative Union” to bring together smaller beekeeping groups and cooperatives engaged in honey production, processing, and marketing. The establishment represents a critical step toward scaling honey production and improving the quality and market coordination of bee products. In the absence of such a coordinating and aggregating structure, Malawian producers would remain constrained in their ability to reach remunerative markets and meet the high-quality-high-volume requirements of off-takers. National-level processors include Kwithu Kitchen, Mzuzu Coffee, Honey Products Limited and African Honey and Food Products.

Production process, yields, and by-products

The honey production process in Malawi involves four primary stages:

- Hive selection and setup: Hive type is determined largely by the availability of local materials and skilled artisans, along with the entrepreneur's economic status. Based on these factors, beekeepers choose among traditional/village hives, Top Bar hives, or modern Langstroth systems. Hives are typically situated in natural forests or integrated into agricultural landscapes, such as coffee and

macadamia plantations, and preferably located near a water source.

- Colony management and forage: Bees feed on flowering exotic and natural trees (such as acacia, mango, and guava), subsequently serving as "Forest Guardians" and boosting crop yields through pollination.
- Seasonal harvesting: Knowledgeable beekeepers follow strict harvesting protocols to ensure only mature honey is collected. Peak harvesting periods occur in October and January in the Northern Region and in June and December in the Central and Southern Regions.
- Processing and by-product extraction: Raw honey is extracted and processed for retail packaging, while high-value by-products, including beeswax (comprising [4]2% of comb harvests), propolis, and royal jelly, are collected for value-added manufacturing.

Honey yields vary by hive type, management, climate, and agro-ecology, ranging from 8 kg in poorly managed setups to 60 kg in high-performing Langstroth systems. Langstroths outperform other hive types because a single unit can have at least four stacks. Each stack can produce at least 15 kg per harvest, and with good management, harvests can occur every two months.

The primary product in apiculture is honey. However, apiculture generates a spectrum of high-value by-products, including the following:

i. Beeswax: Comprising 42% of a comb harvest; used for candles and polish.
ii. Propolis: A resinous substance used in medicinal Vaselines and soaps.
iii. Royal jelly: A high-grade nutritional supplement.
iv. Bee bread: A fermented mixture of pollen and honey used in food industries.
v. Honey wine: Produced at a ratio of 1 litre of honey to 3 litres of water.
vi. Manure: Each hive produces 3 - 4 kgs of organic manure annually.
vii. Bee venom: A potential high-value by-product collected from bees using a simple electronic device placed at the entrance of a bee hive.

While these products have significant economic value, many smallholder apiculture groups lack the technical know-how for production and post-harvest handling to fully realize that value. Building a critical mass of professional beekeepers would be a prerequisite for Malawi to successfully upgrade this value chain.

Apiculture also offers several other benefits for mankind, including the following:

i. Honey is often recommended as an alternative sweetener to sugar for those with some types of non-communicable diseases;
ii. Honey is often used as an exfoliant scrub to remove dead skin cells; and
iii. Honey is often used for treating acne and as a facial oil.

Pollination services and agroecological integration

The symbiotic relationship between apiculture and agriculture is a powerful yield multiplier. Information from Key Informant Interviews (KII) indicates that integrating bees into agricultural landscapes could boost crop productivity through

Enhanced pollination particularly benefits high-value crops such as coffee, macadamia, and watermelons. Moreover, apiculture serves as a "Forest Guardian." Hives placed in woodlots act as a physical deterrent to illegal charcoal makers and loggers, who are deterred by the risk of bee stings. This provides a direct incentive for communities to maintain intact ecosystems and plant flowering species such as acacia, mango, and guava to ensure a consistent nectar flow.

Economic analysis of the value chain

Comparative analysis of Malawian hive systems

In apiculture, hive selection is the single most important factor in determining an apiary's economic threshold and potential success. While traditional hives are culturally dominant, modern systems offer management and processing efficiencies that are non-negotiable for commercial scaling.

The economic threshold for these systems varies: a farmer requires a minimum of 10 traditional hives to reach a commercial threshold, as they are mostly harvested only once annually (**Table 1).** Conversely, the Langstroth hive's three-harvest-per-year minimum cycle makes an initial investment of 5 hives economically feasible. It should be noted that the Kenyan/Tanzanian Top Bar (KTB/TTB) hive, despite its spaciousness, poses a significant management risk because its design can make bees more aggressive during inspection if honey is present. **Investment costs and feasibility for commercialisation**

Moving from subsistence to commercial production requires significant capital investment.

Table 1: Comparison of common hive systems in Malawi

Feature	Traditional / Village Hives	Top Bar (Kenyan/Tanzanian)	Langstroth Hives
Construction material	Tree planks, local timber	Planks, nails, plastic, wire	Modern components often include Queen Excluder
Typical cost (MWK)	K30,000 – K110,000	K45,000 – K140,000	K120,000 – K185,000
Harvest frequency	Once per year	Often twice per year	Up to three times or more per year, depending on management
Reported yield per harvest	10 - 20 kgs (But noted as potentially higher than Langstroth per harvest)	10 - 35 kg per harvest	10 - 60 kg per harvest
Wax production	Present	High	Minimal (combs are reused)
Primary advantage	Low entry cost; uses local materials	Durable; high wax yield; promoted for modern use	Easiest honey processing; easy to colonize
Common source	Locally manufactured	Self-sponsored or DIY	NGO donations and grants

Source: Authors' computation from field data and notes

The value-addition gap across nodes of the value chain is stark. Raw honey is often sold to vendors for K2,500 to K5,000 per kilogram (kg), whereas professionally processed and packaged retail honey sells for K15,000 to K26,000 per kg. For smallholder producer groups, achieving a 30% net profit requires moving beyond the sale of raw pails of honey and into the certified retail segment.

Our profitability analysis reveals distinct regional profitability profiles driven by a combination of agro-ecological advantages and market dynamics. While the North leverages environmental health to achieve high yields, the South compensates with management intensity and market proximity. That is, producer groups in the Northern and Southern regions realise identical gross margins at 88% and 87%, respectively, while groups from the Central region record slightly lower margins of 75% (**Table 2**). The financial performance of these enterprises indicates an exceptionally high Return on Investment (ROI). For every 1 Malawi Kwacha (MK) invested, the North yields MK7,589, the South yields MK6,890, and the Central region yields MK3,070 (**Table 2**). Furthermore, apiculture is an attractive investment for smallholder groups, with a payback period of less than one year, provided they maintain at least 35 beehives. This rapid capital recovery is possible because annual net profits consistently exceed the initial costs of establishing apiaries. The regional variations in profitability are explained by three critical factors:

- **Superior yields:** The Northern region leads in productivity, averaging 28kg per standard top-bar beehive per harvest, significantly outperforming the South (16.5kg) and the Centre (15kg). This high productivity is largely bolstered by the strategic use of natural forest apiaries, where diverse flowering exotic and natural trees provide consistent forage.
- **Harvest frequency:** While the South records lower yields per harvest, its profitability is sustained by a higher harvesting intensity. Producers in most areas of the Southern region can extract honey three times per year, whereas those in the Central and Northern regions typically harvest only twice. This frequency is dictated by favourable climatic cycles and the regional seasonality of forage flowering.
- **Farmgate pricing:** The Southern region benefits from a significantly more favourable market environment, with honey farmgate prices approximately 50% higher than those earned by producers in the Northern and Central regions. This price premium, combined with the ability to move beyond raw sales into certified retail segments, is essential for producer groups to maximize net profits.

Challenges facing the value chain

Apiary resilience is undermined by specific technical, biological, environmental, and human risks that must be mitigated through capacity building, sensitisation and other innovative measures.

- *Technical:* Low technical know-how in apiculture in over 85% of producer groups is a big constraint to the sub-sector
- *Biological:* These include pests, predators and diseases. Wasps (a type of paper wasp) are a

primary pest interrupting apiculture development in Malawi. These wasps are commonly seen hovering at the hive entrance, grabbing worker bees, killing them, and carrying them away to feed their larvae.

- Other pests include ants (*Nyerere*) that force the bees to abandon their colony after being invaded
- Honey badgers (locally known as "*Chiuli*" in the North) are the main predators in apiculture, especially in some parts of the Central and Northern region of Malawi.

Table 2: Gross margin, payback period and return on investment for honey producers in Malawi

	North	Central	South
Standard top-bar beehives	100	70	35
Yield per beehive (Kg)	28	15	16.5
Harvests/year	2	2	3
Sales quantity	5,600	2,100	1,733
Sales price per kg	14,000	15,000	21,333
Total annual revenue (TR)	**78,400,000**	**31,500,000**	**36,960,000**
Variable costs			
Hired harvesting labour	2,000,000	1,400,000	350,000
Packaging materials		4,410,000	2,230,594
Total annual variable cost (TVC)	**2,000,000**	**5,810,000**	**2,580,594**
Fixed costs			
Standard top-bar beehive	7,500,000	5,162,500	3,150,000
Beehive set-up materials	480,000	1,785,000	892,500
Bee suit	780,000	540,000	390,000
Smoker	130,000	85,000	85,000
Honey harvesting materials	50,000	80,000	80,000
Honey processing materials	188,000	86,500	86,500
Total fixed cost (TFC)	**9,128,000**	**7,739,000**	**4,684,000**
Gross Margin (TR-TVC)	**69,272,000**	**23,761,000**	**32,276,000**
GM (%)	**88%**	**75%**	**87%**
Return on Investment (ROI)	**7,588.96**	**3,070.29**	**6,890.69**
Payback period (TFC/GM)	**0.13**	**0.33**	**0.15**

Source: Authors' computation from field data and notes

Honey badgers are extremely vicious, fearless, and aggressive animals, best known for raiding beehives for honey, bee larvae, and wax. They fearlessly attack beehives because their thick skin protects them from bee stings. They are common in places such as Kaning'ina Forest, Nyika National Park, and other forests and game reserves.

- Disease: Though not clearly identified by respondents, bees are highly susceptible to disease attacks, which can lead to massive production drops. For example, one cooperative in Nkhatabay reported that their honey harvest decreased by over 50% during the 2023/24 season, specifically due to bee disease, whose name was not known at the time of data collection.

- Environmental/climatic: Events like Cyclone Freddy have physically washed away apiaries in some parts of the Southern region, significantly reducing apiary size and production levels. Also, droughts disrupt "flower formation," leading to forage scarcity and colony starvation, which subsequently reduces beehive productivity.
- Human-induced: Pesticide contamination in apiaries near tobacco farms, irrigation schemes and large tree nut and rubber plantations is a leading cause of mass bee mortality and residue contamination in honey and other honey byproducts. Also, rampant theft/vandalism, especially in forest reserves and communal woodlots, further discourages investment in the apiary.
- The "project approach" vs. commercial sustainability: Malawi's apiculture history is marked by episodic, donor-led initiatives implemented by the government and NGOs. These "projects" often distribute hives and provide basic entry-level training but fail to address the "sustainability gap" once funding ends. These projects are often implemented in 3-year cycles. When project funding ends, or NGOs withdraw, farmers often lose interest or revert to side-selling.
- Barriers for producers to access MBS certification: Key Informants cited attaining MBS certification as one of the primary barriers to achieving full compliance in domestic and international markets. Although MBS MS366 applies exclusively to honey, most producer groups lack the certification required for formal retail outlets. Apart from a few consignments to the region reported in grey literature, the main market is currently domestic[4]. Despite this, there is clear demand for locally produced honey and honey products from potential buyers in the European Union (EU), the United Kingdom (UK), Japan, and other regions worldwide. However, the critical missing link for these markets is the absence of a structured national system for production, surveillance, and traceability across the value chain. This system is a prerequisite for demonstrating that Malawian honey is free from bee diseases and, more importantly, from chemical residues originating in pesticide-intensive tobacco, irrigation, and plantation areas. Without establishing a credible system of verification and traceability for Malawian bee-

based products, Malawi risks being locked out of high-value global markets.

Lessons from other countries

Consultations with key stakeholders revealed that Zambia serves as the regional benchmark for sovereignty in honey exports. Kenya, Ethiopia, and Tanzania are also strong examples from the Eastern Africa region. Their success is rooted in a structured production and management framework that Malawi can emulate:

- Strategic budgeting: Mainstreaming apiculture into national budgets rather than relying on NGOs and donor-funded projects.
- Specialized extension: Vocational training programs specifically designed for apiculture technicians.
- National coordination: Centralized aggregation in strategic locations to meet massive international orders. Also, a coordinated national system for quality control and traceability of honey and honey products.
- A dedicated national research program: An active national research program on apiculture. In Malawi, research to identify which chemicals cause the most bee mortality, among other topics, could be integrated into such a program.

Recommendations for value chain integration and upgrading

Integrating and scaling the sector requires a national shift from fragmented projects to a structured industry development strategy. Consequently, we propose the following reforms for consideration by different players in the sub-sector:

- DAHLD: Retool frontline extension staff with modern apiculture production and commercialisation knowledge; Put in place a clear national strategy on apiculture development; and immediately develop and implement disease and residue surveillance strategies.
- DAHLD: Promote a staggered spraying strategy in production areas near large plantations and tobacco estates to safeguard the value chain from chemical risks. A national protocol for staggered spraying, or for spraying only at night or outside foraging hours, is essential to protect colony health and to meet international residue standards.
- Educational Institutions: Integrate apiculture courses into extension training programmes at vocational and higher education levels to create a professional technical workforce. Malawi's honey has the potential to be a premium global "organic" brand. Professionalizing the value chain and addressing the certification gap shifts the role of honey from a rural safety net to a cornerstone of the national economy, and this is possible.
- MBS: Establish regulatory standards for high-value by-products (wax, propolis) and develop protocols for affordable residue testing.
- Producers: Shift to a cooperative model to aggregate volume; adopt improved hive designs, such as the Langstroth and Kenyan Top Bar (KTB) systems, to improve processing

efficiency; adhere to strict "matured honey" harvesting protocols; and strengthen the newly formed Honey Producers and Processors Cooperative Union to improve value chain coordination and governance. The fundamental aspect of this transition should be the dissemination of technical expertise to producers through a modular methodology, ensuring they are thoroughly equipped with skills pertaining to production, processing, group dynamics, and marketing, among others. A comprehensive module on each of these elements would be essential to deliver to progressive producer groups.

- Government and the private sector: Consider establishing Extension Planning Area (EPA)-level aggregation centres through public-private partnerships (PPPs) to strengthen the aggregation and commercialization of honey produced by cooperatives. These centres could serve as secondary-level aggregation and quality-assurance hubs, ensuring that honey meets the required quality, hygiene, and traceability standards before being consolidated at higher levels of the value chain. In addition, the centres could deploy technical back-stoppers to support producer groups in improving production practices, harvesting techniques, post-harvest handling, and quality management, thereby enhancing product consistency, market competitiveness, and producers' incomes.

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