ALCP | Alliances Caucasus 2

REGIONAL MARKET ALLIANCES IN THE SOUTH CAUCASUS

ALLIANCES CAUCASUS 2

HONEY & QUEEN BEE PRODUCTION, MARKET RESEARCH

OCTOBER 2022

KEY CONTACT:

Mercy Corps Georgia
Lela Putkaradze, Lasha Kvichia
ALCP2 WG Coordinator,
Senior Programme Officer
I Deadlock, Ivane Meskhi #32
Batumi 6010, Georgia
Tel: +995 (422) 29 42 94
Mobile: + 995 593 23 32 32
Email: wgcoordinator@alcp.ge

Mercy Corps Georgia
Helen Bradbury
ALCP2 Team Leader
8 Megobroba street
Marneuli 3000, Georgia
Tel: + 995 (357) 22-00-20
Mobile: + 995 (595) 56 00 69
Email: teamleader@alcp.ge

Mercy Corps Georgia
Irakli Kasrashvili
Country Director
48 A. Tsagareli street
Tbilisi 0194, Georgia
Tel: + 995 (32) 25-24-71
Mobile: + 995 (599) 10 43 70
Email: ikasrashvili@mercycorps.org

A significant proportion of rural households produce honey for additional income. Honey and beekeeping can make use of the incredible biodiversity in Georgia where 75 per cent of land is mountainous and much of it untouched by improved or intensive farming techniques. Since 2014, the Alliances programme has been working to develop the honey sector in Georgia including; regulations on the use of antibiotics, national laboratory testing capability, export functions, branding and promotion, development of a flagship wild honey organic certified product 'Jara' developing specialized modules for VET courses in beekeeping; improving processing capability for entry point factories for bulk, brand and niche export to the US, Gulf states, Europe and Japan and founding the Georgian Beekeepers Union (GBU) in 2018. The GBU allies the main players in the honey sector in Georgia, nine beekeeping associations, nineteen private sector companies and unifies 5,500 beekeepers (548 women) in data base. It has become the main advocate, organizer and knowledge development and transfer hub for the sector and will remain essential in the ALCP2[1]. The Jara Beekeepers Association unites and provides the same role for Jara producers. Indeed their sustainability as organizations is vital to the honey sector and under Outcome 2 the programme will focus on organisational strengthening including the generation of income to support what is now voluntary input on behalf of key members, through paid service provision. Activities under Outcome 1 will also help support and enrich the information provision of the GBU and JBA. The ALCP2 will build on this by making bio-certification services more accessible, sustainably increasing export volume and building an improved international image of diversified bee products for export.

At present, honey is the only beekeeping product that is being exported legally from Georgia as a result of systemic interventions in the sector for the last eight years. In 2020, Georgian honey entered bulk honey markets in the EU and since then has been regularly exported to France and Bulgaria. However, bulk honey markets have only been established for Acacia honey, which constitutes only 31% of honey produced in Georgia[2]. Georgian export companies want to explore bulk honey markets for other honey types, mainly Blossom (33%) and Chestnut (29%). The Chestnut honey market is highly dependent on informal sale to Turkish traders, resulting in unstable income, uncertainty and high risks for honey producers. In this as in other matters including laboratory testing availability and many other issues the role of the programme in facilitating the Georgian Beekeepers Union remains of utmost importance for the sustainable development of the sector.

Queen Bees are another beekeeping product that have been traded illegally to Turkey for years and have high potential to enter formal export markets in Turkey as well as the EU and the USA. An improved breed and image, building the reputation of Georgian Bee would have long-term impact on Georgia's international standing for honey and bee products and underpin diversified bee-based products for export. Georgia is the homeland of the Caucasian bee (Apis mellifera caucasica). Georgia has the opportunity to become the best donor for the breed worldwide due to breed purity having remained relatively intact. Several major constraints exist however which prevent the country and producers being able to benefit from this competitive advantage.

The ALCP2 market research therefore focused on two market systems in the beekeeping sector: **honey** and **queen bee**, both having high export potential and opportunity for growth. The honey market system is divided into three parts:

Core Market: describes the basic function of supply and demand between honey, queen bee and other bee products producers and their markets.
Supporting Functions: deals with inputs necessary for honey, beehives and bio beeswax, sustainable provision of support services, quick laboratory testing services, VET bee products modules and Georgian honey image promotion.

[1] See Rules for more information on the GBU
[2] According to the Georgian Beekeepers Union database.

Rules: Improved municipal transhumance access and use and expanded applicability to Government Bio Certification support programmes.

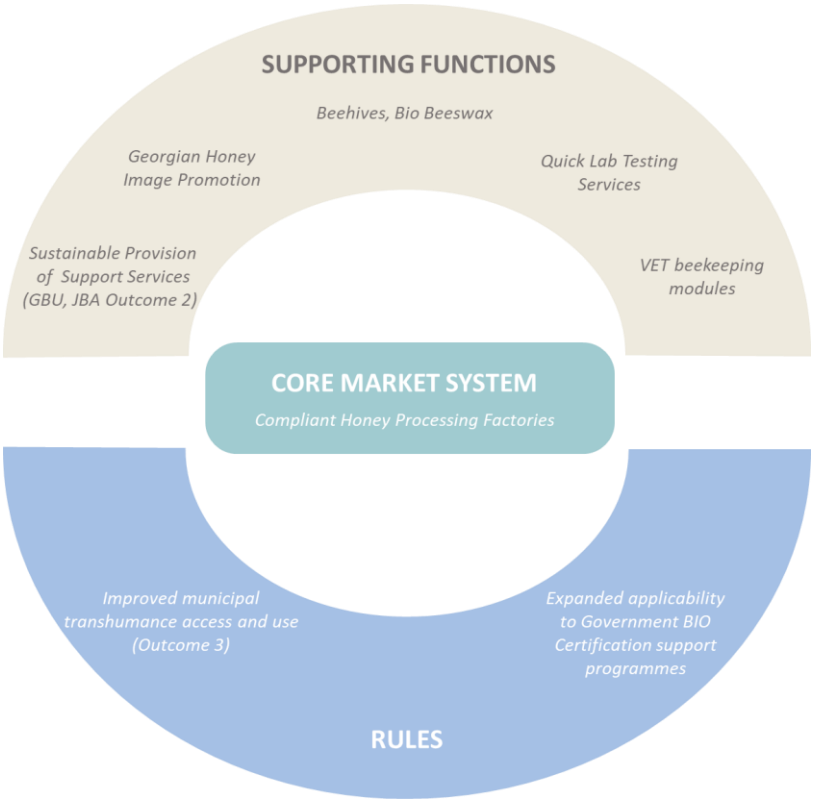

Figure 1 Honey Market System and Intervention Entry Points

The queen bee market system is divided into three parts:

Core market: describes the basic function of supply and demand between queen bee breeders and their markets.
Supporting functions: deals with inputs necessary for queen bee production, information & trainings, scientific research & surveys, apiary inspection management service and high quality donor breeds.
Rules: rules related to the sector including formalizing illegal export markets, entering EU 3rd country list, protection of Caucasian Bee breed and legitimizing international image of Georgian queen bee market.

Figure 2 Queen Bee Market System and Intervention Entry Points

METHODOLOGY

This market research is based on a desk review of current statistics and sources related to honey and queen bee export, key informant interviews with thirty-five market actors (see Annex 1) representing private and public sector players in all three parts of the market system both nationally and in the target regions and eighteen gender disaggregated focus groups conducted with honey producers in Imereti, Samegrelo, Kakheti, Samtskhe-Javakheti, Adjara and Racha.

IMPACT OF CLIMATE CHANGE ON BEEKEEPING

Climate change is a significant factor contributing to the decline in pollinator populations, including honeybees, worldwide. The warming of the planet and changes in weather patterns are changing the dynamics between flowering plants and honeybees, causing nutritional stress. Changes in weather patterns leads to loss of habitat for plant species and to temperature fluctuation and changes in seasonal timing, which then results in weaker bee colonies prone to more diseases, affecting productivity and thus income for beekeepers. These changes in weather patterns are clearly evident in Georgia.

The *ALCP2 Livestock Producer and Beekeeper Focus Group* (FG) *Survey* 2022 revealed that the majority of the interviewed female and male farmers are worrying about changes in weather patterns which negatively impact their beekeeping practices and honey production. Prolonged and heavy rainfall in early spring hampers bees from collecting nectar, thus affecting the volume of honey harvest (the exception is Racha region). For example, the acacia honey harvest dropped by about 50% and chestnut honey by 80% in Western Georgia in 2022. The FG survey revealed that interviewed female and male farmers have increased need for feeding bees with additional feed (syrup, candy) due to chestnut tree disease. Low temperatures in early spring caused Chalkbrood disease in Imereti, which is an infection affecting weak colonies. Unpredictable weather also impacts bee transhumance.

Although climate change does not directly cause bee diseases, it can make bee colonies weaker and more vulnerable to infections. Warm winters increased humidity in the hive provoking Varroa in Samegrelo, for which beekeepers need to invest more in treatment/beekeeping drugs, which have reduced efficacy due to the hhigher temperatures. Uncontrolled use of pesticides and herbicides and wild animal attacks were named as constraints by both female and male beekeepers affecting the health of bee colonies and thus production.

GENDER EQUALITY, DIVERSITY, AND SOCIAL INCLUSION (GEDSI) IN BEEKEEPING

Beekeeping in Georgia is regarded as a male-dominated sector. It is traditionally considered a man's job, requiring strength for the loading and transportation of beehives during transhumance and in honey extraction. However, women who identify themselves as beekeepers represent 10% of beekeepers in Georgia. Reasons that these women have become beekeepers include beekeeping being a family activity and women taking up the role after a father or husband have passed away, support from NGOs which has seen women-based cooperatives formed and women given training, funding and beehives and women adopting more control over the business where it is an additional source of income linked to food production and rural tourism.

For the 90% who identify themselves as male beekeepers, beekeeping mostly remains a household activity and women play an important role within it, though not identifying themselves as 'beekeepers'. They take care of beehives, treat bees, negotiate with customers and sell honey. Men are responsible for bee transhumance, honey extraction/packaging, buying vet medicines and inputs. Beekeeping requires specific knowledge. Unlike livestock husbandry, where roles and responsibilities have some distinct division, in beekeeping, the one with beekeeping knowledge leads. Other family members provide help when necessary, for example, during lifting/moving hives, taking apiary to transhumance, honey extraction and marketing. See Gender Matrix Table 6 and Table 7. Despite the fact that queen bee breeding is less physically intense than honey production women are less involved in commercial queen bee breeding activities. The key constraint is a lack of skills and experience as well as the access to market. More stable market access will encourage more women to develop the necessary skills, diversify production and gain higher income.

The ALCP2 Livestock Producer and Beekeeper Focus Group Survey revealed that Armenian beekeepers in Samtskhe-Javakheti have poor access to information and inputs, including high quality mated queen bees.

According to the 2014 census, 13% of the Georgian population are ethnic minorities, out of which 6% are ethnic Azerbaijanis and 5% ethnic Armenians. Not knowing the Georgian language is one of the biggest constraints for ethnic minorities. This was also revealed during the focus groups; ethnic minorities emphasized that they experience language barriers to accessing information from Georgian channels. Azerbaijani and Armenian beekeepers lack information on the proper use of vet drugs, bee diseases and treatment. Their knowledge about bio/sustainable beekeeping is also limited. Beekeeping training which is mainly in Georgian is not tailored to Armenian and Azeri beekeepers, who mostly through not all speak and understand Russian along with their native language. While the GBU and Facebook page Georgian Bee administered by the GBU's Chairman is a key information platform for Georgian beekeepers, it is not popular among the beekeepers in ethnic minorities, who named the language barrier for not using these resources. They watch Russian (or Armenian or Azeri) language content, are also members of non-Georgian speaking Facebook discussion groups, which does not provide them with information tailored to their region and beekeeping practices.

Table 1 Gender Division of Roles and Responsibilities in Beekeeping

List of Activities	**Women identify themselves as a female beekeeper**			**Men identify themselves as a male beekeeper**		
Taking Care of Beehives	**W**	**M**	**Both**	**W**	**M**	**Both**
Apiary check up	x				x	
Diagnosing of bee diseases	x				x	
Treatment of bees	x	x	x	x	x	x
Buying drugs	x		x		x	
Feeding bees	x	x	x	x	x	x
Beehives smoking	x	x	x	x	x	x
Making and using of traditional remedies for bee treatment	x				x	
Making additional feed to bees	x		x		x	x
Mending beehives		x			x	
Transhumance	***W***	***M***	***B***	***W***	***M***	***B***
Transportation			x		x	
Loading beehives		x	x		x	
Preparation of beehives: cleaning, sorting, placing planks	x		x		x	
Taking care of beehives in pastures	x		x		x	
Honey Harvest	***W***	***M***	***B***	***W***	***M***	***B***
Extraction of honey	x		x		x	x
Placing beeswax in frames	x				x	
Packaging			x		x	x
Producing Other Bee Products	***W***	***M***	***B***	***W***	***M***	***B***
Royal Jelly	x			x	x	x
Pollen	x				x	
Propolis	x			x	x	x

Venom	x				x	
Beeswax			x		x	
Queen bee breeding	x				x	
Sale	***W***	***M***	***B***	***W***	***M***	***B***
Sales management	x		x		x	x
Negotiation with clients	x	x	x		x	x
Marketing	x				x	x

Table 2 Gender Division of Access and Agency, Decision Making Ability, in Beekeeping

	Female beekeeper				**Male beekeeper**			
Resources	**Access**		**Agency**		**Access**		**Agency**	
	W	**M**	**W**	**M**	**W**	**M**	**W**	**M**
Online information (social media, online platforms, etc.)	x	x	x	x	x	x	x	x
TV programmes	x		x			x		x
Trainings / courses in beekeeping	x		x			x		x
Donor grants	x		x			x		x
Bank loans	x	x	x	x	x	x	x	x
Governmental grants	x		x			x		x
Vet drugs	x	x	x			x		x
Bio vet drugs	x	x	x			x		x
Beehives	x	x	x			x		x
Income from selling honey	x		x	x		x	x	x

SUMMARY MARKET ANALYSIS – HONEY EXPORT

The following tables and figures contain the summary market analysis; relevance of the sector to the target group, its pro poor potential, the intervention potential and key constraints in the three parts of the honey market system.

CORE PROGRAMME TARGET GROUP & PRO POOR POTENTIAL

A significant proportion of rural households in Georgia produce honey for additional income. Beekeeping is a primary source of income for 40% of beekeepers in the Georgian Beekeepers Union database. Honey and beekeeping can make use of the incredible biodiversity in Georgia. 75 per cent of land is mountainous, relatively untouched by improved or intensive farming techniques. Beekeepers produce different types of honey[3] according to regions and sell either directly to consumers or intermediaries/aggregators/export companies. For the last three years, beekeepers have observed increasing demand for Georgian honey, especially for Acacia which is being exported in bulk to the EU[4]. Table 1 below summarizes the high relevance, pro-poor potential, and impact potential to the target group of the areas of intervention.

Table 3 Relevance & Pro Poor Potential and Intervention Impact Potential

RELEVANCE	PRO POOR POTENTIAL	INTERVENTION POTENTIAL
High: Honey is an important product to a significant proportion of rural households in all target regions. High demand for honey. Honey is sold both in the domestic and export markets, directly to consumers, supermarkets, tourist places and to intermediaries and honey producing/export companies. High potential to increase export amounts to diversified export markets.	**High:** Beekeeping is a primary source of income for beekeepers owning more than 30 bee colonies.[5] And an important source of additional income to those with fewer.	**High:** Interventions focused on facilitating existing honey producing companies to become exporters through arranging FS&H compliant processing, improved branding, aggregation capacity, increase export volumes, diversify products (honey types) and export markets will stimulate supplier beekeepers to invest and increase production. Increased access to commercialization of honey extraction, homogenization and laboratory testing services will increase outreach and sourcing from small scale beekeepers (owning 30 bee colonies). Facilitating honey producing/export companies to diversify production (propolis, royal jelly, bee venom, bee pollen), including rural tourism products (apiary/factory tours to tourists, Api-therapy) will expand market potential and add value. Marketing and promotion of Georgian honey in target export countries with the support of the Ministry of Environment Protection and Agriculture of Georgia and the Ministry of Foreign Affairs of Georgia (through its embassies overseas) will further diversify markets and increase demand.

[3] Acacia, Alpine, Blossom, Linden, Chestnut and Jara
[4] Mainly France and Bulgaria.
[5] 40% of beekeepers recorded in the Georgian Beekeepers Union database.

		Supplier beekeepers will access more information and stable service provision through membership packages and the paid services of Georgian Beekeepers Union. Including work with women beekeepers to increase skills knowledge and skills related to bee products (especially bee venom) production and Api tourism.

Table 2 bellow illustrates systemic constraints to the supporting functions; core market and rules are offset by the drivers and pro poor opportunities in the current climate offering significant leverage to conduct successful interventions in the honey sector.

Table 4 Systemic constraints to the supporting functions; core market and rules

SYSTEMIC CONSTRAINTS SUPPORTING FUNCTIONS	PRO POOR OPPORTUNITIES AND DRIVERS
Poor access to beekeeping information and trainings (apiary management, bee diseases, use of antibiotics, bio treatment, honey storage) especially for Armenian beekeepers in Samtskhe-Javakheti and Azeri beekeepers in Kvemo Kartli.	Tailored information and service provision to beekeepers throughout Georgia through membership packages and paid services of Georgian Beekeepers Union and VET colleges (short courses) will lead to increased knowledge and awareness of apiary management, bee diseases, treatment, leading to resilience and increased productivity for honey producers. Accessible resources for Armenian beekeepers in Samtskhe-Javakheti and Azeri beekeepers in Kvemo Kartli will be created through the GBU.
Lack of consultancy services (apiary inspection, bee disease diagnosis, apiary treatment) for beekeepers.	
Lack of knowledge and skills of producing bee products (propolis, royal jelly, bee venom, pollen).	
Lack of access to quick lab testing before honey aggregation resulting in aggregators' lack of trust in beekeeper suppliers restricting aggregation process.	Commercial quick lab testing services will create opportunities for honey producers to offer their honey to aggregation entities, access the bulk honey market thus increase income.
Widespread usage of nonstandard beehives (size of hive, frames and other parts). Lack of access to standard, quality beehives[6] for beekeepers resulting in low productivity and high risk of disease spread.	Development of a beehive standard will lead to improved beehive production and increased productivity.
Non-existence of bio beeswax (necessary for bio certification) production limiting honey[7] bio certification.	Honey producers who use bio beeswax will be able to get their apiary and honey bio certified, and to enter higher-value markets. Improved VET beekeeping modules/short courses will create opportunities for honey producers to acquire new knowledge and diversify production especially for women beekeepers.
A lack of promotion of Georgian honey in target export countries.	Marketing and promotion of Georgian honey in target export countries with government support Rural Development Agency/Enterprise Georgia will increase Georgian honey image. Strong advocacy through the GBU removes constraints to the sector thus honey production becomes primary source of income rural HHs.

[6] A beehive which is made according to standard size, from well dried wood, is lighter in weight and is easy to transport for transhumance, has ventilation for preventing humidity in the hive.
[7] Other than Jara as beekeeper does not need to use wax frames for producing Jara honey.

SYSTEMIC CONSTRAINTS CORE MARKET	PRO POOR OPPORTUNITIES AND DRIVERS
Lack of honey processing infrastructure, i.e., FS&H compliant factory with full processing line (homogenizer, pump, jar washing/drying machine, bottling and labelling line) + honey storage facilities resulting in limited export volumes and markets.	Compliant honey producing/export companies with full processing line + storage facility and improved branding will create opportunity for increased export volumes and increased scale (more beekeepers supply honey to aggregators/exporters).
Lack of finances to invest in factory infrastructure as the business requires high working capital.	Knowledgeable honey producing/export companies will more easily receive government grants/preferential agri loans and have more opportunity to invest, expand and diversify.
Limited knowledge about or access to lab testing during aggregation resulting in lack of trust, low volumes and drawn-out aggregation process.	Commercial quick lab testing services will reduce risk and improve aggregation process' enabling access for more beekeeper suppliers.
Poor branding for international markets.	
Limited export markets for chestnut honey. Lack of knowledge of export markets for other bee products (propolis, royal jelly, pollen, bee venom) and lack of expertise in Api tourism.	Better knowledge of export markets for chestnut honey and bee products will lead exporters to diversify their offer thus sourcing from more beekeepers.
SYSTEMIC CONSTRAINTS RULES	**PRO POOR OPPORTUNITIES AND DRIVERS**
Limited export markets for chestnut honey. Continued smuggling of chestnut honey to Turkey hindering development of formal market and investment by suppliers.	Advocacy with the Ministry of Environment Protection and Agriculture and the Ministry of Economy (MEPA) and Sustainable Development (MESD) of Georgia to open up the legal Turkish market for Georgian chestnut honey will reduce illegal trade and instability of honey producer's dependence on informal Turkish market.
Lack of organized transhumance and lack of disease control on pastures, poor access roads limiting transhumance therefore honey production volumes.	Improved municipal transhumance access and use will increase honey production volumes thus incomes for honey producers.
High cost of bio certification and lack of applicability to government bio certification support programmes.	Redefined government bio certification support programmes will result in expanded applicability thus increased honey types and volumes bio certified added value and more income for honey producers.

Honey producing/export companies who aggregate honey from beekeepers and sell to domestic and export markets are key market players in the core market of the honey market system. They play a fundamental role in the development of the sector. Beekeepers are highly dependent on these companies as they benefit more from selling an entire harvest in one go instead of selling honey piecemeal through relatives and acquaintances throughout the year. In 2019, largely as a result of systemic interventions in the sector facilitated by the ALCP, companies started to export, further increasing export volumes and diversifying markets resulting in regular honey export to the EU, North America, Gulf Countries and Asia in 2020 and 2021 [8]. According to the National Statistics Office of Georgia[9] (see Figure 1), honey export in 2021 reached 172.92 Tonnes (eight times more than previous year), 82% of which was exported in bulk to the EU: France (38%)[10] and Bulgaria (44%)[11]. There was an upward trend in 2022 with 165.46 Tonnes exported in the first nine months of 2022 (37% increase compared to the same period in 2021), 88% of which was exported in bulk to the EU: France (34%) and Bulgaria (54%)[12], key markets for Georgian bulk honey. The remaining 12% of Georgian honey was exported to Israel, Saudi Arabia, UAE, Japan and Canada, markets for both bulk, brand and niche honey[13].

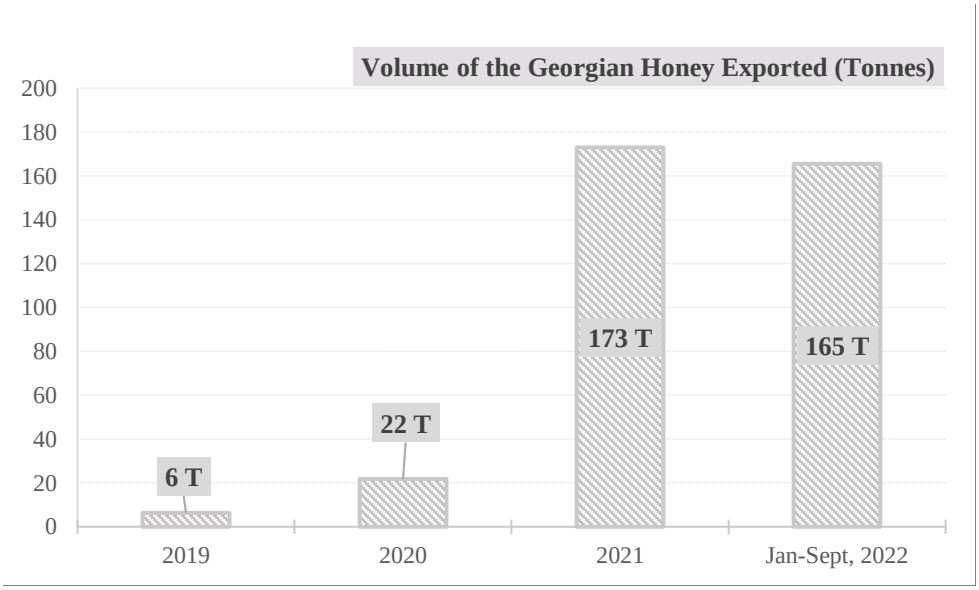

Figure 2. Volume of the Georgian honey exported in 2019-2022

According to *Table 5*, honey producing/export companies annually produce 463 Tonnes of Acacia, Blossom, Chestnut, Aline, Linden, Goldenrod and Jara honey sourced from 311 beekeepers (owning 50-200 bee colonies) from all regions of Georgia. All of these companies plan to increase scale and double the number of supplier beekeepers.

[8] France, Bulgaria, USA, Canada, Qatar, UAE, Saudi Arabia, Israel, Japan, Hong Kong.
[9] ex-trade.geostat.ge ; www.mof.ge/export_importis_informacia
[10] Exported by Api Geo Ltd - the ALCP client
[11] Exported by Gebul Commerce Ltd
[12] Plus, Germany (0.6%) and Austria (0.3%).
[13] KTW Agro Keda Ltd, Jara Beekeepers Association, Taplikatsi Ltd, Rukhi Queen Ltd, Geo Natural Ltd

Table 5 Profile of Honey Producing/Export Companies and Potential scale

#	Company Name	Regions	Honey Processing Factory, HACCP	Export/ Domestic Markets	Volume of Annual Sales (tonnes)	# of Supplier Beekeepers	Potential Scale Beekeepers
1	Gebul Commerce Ltd	Imereti	No	Export (Bulgaria)	90	50	100
2	Api Geo Ltd	Imereti	Yes	Export (France)	90	50	100
3	Tapli Sakhlshi, Co-partnership	Guria	No	Domestic	90	50	100
4	Geo Natural Ltd	Racha	Yes	Both (Qatar, UAE)	90	50	90
5	Royal Honey Ltd	Kakheti	Yes, HACCP -	Domestic	25	25	50
6	I/E Tamaz Glonti	Guria	Yes, HACCP -	Domestic	16	6	30
7	I/E Giorgi Katchkachishvili	Imereti	Yes	Domestic	15[14]	5	30
8	Rukhi Queen Ltd	Samegrelo	No	Both (Qatar, Saudi Arabia, UAE)	15	10	30
9	Cooperative Ska	Samtskhe-Javakheti	Yes, HACCP -	Domestic	12	5	30
10	KTW Agro Keda Ltd	Ajara	Yes	Both (USA, Canada, Hong-Kong, Qatar, Azerbaijan)	10	35[15]	50
11	Taplikatsi Ltd	Kakheti	Yes	Both (USA)	8	15	30
12	Ratcha Natural Products Cooperative	Ratcha	Yes	Domestic	8[16]	11	30
13	Jara Beekeepers Association	Ajara	Yes	Both (Japan)[17]	2	10	30
Total					**463**	**311**	**670**

[14] Provided honey processing service for Gebul Commerce (exporter) for 70 Tonnes
[15] Including 27 Jara beekeepers (bio certified & noncertified)
[16] The factory prepared export consignments for Geo Natural Ltd, Agro Factory Ltd and Gebulit Commerce Ltd.
[17] Export is made under the contract with MF Company Ltd. Jara Bekeepers Association makes aggregation and batch preparation, MF Company Ltd makes the shipment to Japan.

BULK HONEY EXPORT

At present, there are only two companies in Georgia who are exporting Georgian honey in bulk (one full container per shipment) Api Geo Ltd (an ALCP client) and Gebul Commerce Ltd. The main export market for bulk honey is the EU, to France and Bulgaria. Exported honey types are Acacia and Blossom. The key constraints faced by these companies are decreased profit margins due to the euro devaluation and limited transportation options resulting in prolonged delivery times. Both of these companies are motivated to expand, in particular to find wholesale markets for chestnut honey. Use of antibiotics by beekeepers and poor storage conditions at beekeepers' level still remain constraints to smooth aggregation processes, however both of the companies emphasized a positive trend of improved quality and safety of honey aggregated. Gebul Commerce Ltd does not own a factory and outsources honey processing services from GBU members honey processing factories (including ALCP clients: Matchakhela Ltd and Api Geo Ltd) who holds NFA recognition, a must for export. The company is interested to invest in a factory if the profit margin allows. See supporting functions and laboratory testing for more on constraints to aggregation.

BRAND HONEY EXPORT

In Georgia, there are more than twenty Georgian honey companies that sell brand honey in supermarket chains throughout Georgia[18], out of which only five companies export[19], three (75%) of them are ALCP clients[20] and fourteen are members of the GBU. Five more companies[21], four of whom are members of the GBU, are either in the process of negotiation with potential importers or have plans to build a factory with the goal of exporting. These companies face a lack of honey processing infrastructure, i.e., a FS&H compliant factory with a full processing line (homogenizer, pump, jar washing/drying machine, bottling and labelling line) and honey storage facilities. This limits their ability to seize business opportunities, sign contracts, receive orders, increase volumes and enter new export markets. Most of them lack the finances to invest in factory infrastructure as the business requires a lot of working capital. They do want to apply for grants from the government and NGO's but some lack co-financing or need to be surer of their market to make the financial commitment. They have limited access to laboratory testing during aggregation constraining aggregation through low volumes of honey and a long aggregation process. All of them have heard about the quick test laboratory in the Api Geo factory and are ready to use quick laboratory testing services whenever available. Most of these companies have poor branding for international markets. Some of these companies want to link beekeeping with tourism but lack knowledge and expertise. Also, knowledge of export markets for other bee products including propolis, royal jelly, pollen, bee venom is scarce.

[18] According to the ALCP market research Georgian Honey Sector Development (2017-2020)
[19] KTW Agro Keda Ltd, Jara Beekeepers Association, Taplikatsi Ltd, Rukhi Queen Ltd, Geo Natural Ltd
[20] KTW Agro Keda Ltd, Jara Beekeepers Association, Taplikatsi Ltd
[21] Tapli Sakhlshi, Royal Honey Ltd, I/E Tamaz Glonti, I/E Giorgi Katchkachishvili, Cooperative Ska

Jara honey, with its history, production in a biodiverse environment and natural honeycomb was acknowledged as a unique niche product with a great potential to become a flagship product for Georgia in international markets. Interventions targeted at Jara commercialization commenced in 2014. A market systems approach was employed targeting changes in all sectors of the value chain including bio certification, branding, marketing, product development, image development, education and commercial value chain development to increase demand and price, better treatment practice to improve productivity and a body that could organize for the better communication and advocacy of Jara beekeepers[22].

The Jara Beekeepers Association is the main focal point between Jara beekeepers and honey exporters/consumers. It provides services[23] to 98 beekeepers, aggregates honey and sells to companies and individual customers, ensuring regular and sustainable income for Jara beekeepers. Jara beekeepers sell all their harvest. The price for Jara honey has remained stable for years compared to other honey types, e.g. chestnut[24] Jara honey is sold in domestic and export markets. KTW Agro Keda sells Jara honey under the Nena brand in jars as well as in wooden packages in a total 168 selling points throughout Georgia including main supermarkets, own brand shops and small shops. The company factory received a bio certificate and started bio Jara honey export in the beginning of 2021. To date, it has exported Jara honey to the USA, Canada, UAE, Qatar, Hong Kong, Japan and Azerbaijan. In 2021 the Jara Beekeepers Association concluded a contract with MF Company in Japan, to export bio Jara honey to Japan. To date, the company has made three export shipments to Japan, where Jara honey is sold under MYM International brand JARA. Japanese consumers apparently love Jara honey, some of them saying it helps them with stomach problems. MF Company plans to further develop the Jara honey brand for Georgian market in partnership with the JBA.

[22] *A Revival of Georgian Traditional Beekeeping – JARA Beekeeping:* research paper produced for and presented at Apimondia 2022 Congress in Istanbul, Turkey by the GBU/ALCP.

[23] Jara honey harvest service, bee-treatment service, information, trainings and consultations

[24] Always vulnerable as dependent on informal smuggling so during COVID the trade stopped.

Information remains one of the key supporting functions in honey sector. For years, beekeepers were left with the knowledge they had from their parents or grandparents until the Georgian Beekeepers Union was created through ALCP support in late 2018. Lack of information led to massive use of antibiotics by beekeepers in recent years an attempt to deal with increased diseases such as Varroa, resulting in antibiotic residues in Georgian honey, the main constraint hindering honey export. In 2019 the GBU carried out the national *Do's and Don'ts of Antibiotic Use* campaign and facilitated breakthrough legislation adopted by the Government of Georgia, which prohibited registration of the beekeeping vet medicines containing restricted antibiotics. As a result of which, only 8% of honey samples tested positive for prohibited substances in 2021, compared to 56% in 2017.

In the ALCP honey impact assessment (January 2022), when asked about use of antibiotics, the majority of the interviewed beekeepers reported that they are now aware of the negative influence of antibiotics used in beekeeping. According to *Livestock Producers and Beekeepers Focus Group Survey*, 89% of beekeepers have continued or started bio treatment in apiaries using acids including Oxalic Acid and Formic Acid and use of bio vet drugs against *Varroa* are now preferred by 83% of beekeepers rather than non-bio drugs. Interviewed honey producing/export companies also emphasize the dramatic decrease in antibiotic residues in aggregated honey, however some antibiotic residues are still found and regular information provision to beekeepers about antibiotic use continues to be of utmost importance, especially for Armenian beekeepers in Samtskhe-Javakheti, who are almost 'excluded' from the Georgian honey market due to language barriers.

The key stakeholder in information provision to beekeepers is the Georgian Beekeepers Union, which allies the main players in the honey sector in Georgia in nine associations, nineteen private sector companies and unifies 5,500 beekeepers (548 women) in a database. It disseminates information through its SMS system, website, Facebook page and trainings conducted in partnership with the Rural Development Agency (RDA). 5,500 Georgian beekeepers (10% female) receive regular SMS notifications on bee treatment.

According to *Livestock Producers and Beekeepers Focus Group Survey*, 72% of beekeepers named the Chairman of the GBU as an influencer and the key contact person for consultation and information. Live sessions led by the GBU's official Facebook page are of high importance and have become one of the main information sources for beekeepers, they know the time and watch it every Saturday, where they can ask questions and have direct communication with experienced practitioners. It has become particularly useful for female beekeepers, because their communication with other beekeepers, who are usually men, seems to be limited. During live sessions, women are more open for engagement and getting the information they need. The majority of the BGU beekeepers are also members of the Georgian Bee Facebook group, also administered by the GBU's chairman. In 2021, the GBU initiated nationwide trainings in tandem with the RDA as a response to massive collapse of bee colonies. More than 2,000 beekeepers from 60 municipalities received two-day online trainings on bee treatment practices. In 2022, these trainings are to be continued with the goal of reaching 3,000 beekeepers throughout Georgia.

In 2019-2021, the GBU provided up to 3,700 consultations and 72 trainings for beekeepers free of charge. The Focus Group Survey showed that there is a demand from beekeepers for paid consultancy services, they are ready to pay for a full check-up for the apiary at least twice a year by a qualified specialist to ensure bee health. Therefore, development of paid services by the GBU is of high importance. The GBU has become the main advocate, organizer and knowledge development and transfer hub for the sector and will remain essential in the ALCP2[25]. Indeed their sustainability as an organization is vital to the honey sector and under Outcome 2 the programme will focus on organisational strengthening including the generation of income to support what

[25] See page 21 Rules for more information on the GBU.

is now mostly voluntary input on behalf of key members, through paid service provision. Activities under Outcome 1 will also help support and enrich the information provision of the GBU.

Another key stakeholder in information and service provision to Jara beekeepers is the Jara Beekeepers Association (JBA), which was created through ALCP facilitation in 2018. Jara is traditional wild beekeeping, a practice that almost died out but since 2014 has begun a slow revival with the facilitation of the ALCP. The JBA unites Jara beekeepers, preserves and promotes Jara beekeeping, provides services such as bio treatment of apiaries and is the main focal point between Jara beekeepers, local government and honey aggregators, negotiating and facilitating sales including collection, aggregation and packaging.

Uniting Jara beekeepers under the JBA has brought hope and feeling of pride to those beekeepers who are continuing or are now taking Jara beekeeping up. The JBA facilitates Jara honey supply to domestic and export markets while ensuring sustainable income for Jara beekeepers. It made a breakthrough in the sector introducing Bio honey production and directly negotiating a contract in Japan for its export. Jara itself has been in the vanguard of bolstering the image of Georgian honey[26]. The ALCP2 will focus on improved service provision and sustainability of the JBA through increased scale and outreach, especially to Western Georgia regions.

INPUTS

Lack of access to standard, quality beehives[27] is a constraint for beekeepers. The beehive is one of the most important inputs in honey production, determining the health of the bee colony and its productivity. Climate changes causing issues such as increased humidity, leading to increased disease are making the need for appropriate hives more acute as highlighted by the majority of the beekeepers during the *Beekeepers Focus Group Survey*.

Badly ventilated hives can cause low productivity and increase the risk of disease. 39% of beekeepers have already modified their hives by adding additional ventilation to avoid humidity during high temperatures or prolonged and heavy rainfall. Sometimes hives are made from wood material that is not dry enough, also they are poorly built. Female beekeepers emphasized the need for lighter beehives that would be easier for them to use. Armenian beekeepers from Akhalkalaki lack access to beehives adapted to cold conditions.

Widespread usage of nonstandard beehives makes it more time and labour consuming for beekeepers to extract honey and cope with climate change related challenges. The GBU plans an in-depth online survey on the matter with its members. As part of the market research, eight beehive producers from Ajara, Imereti, Guria, Samegrelo and Kakheti were interviewed. Limited production capacity due to lack of equipment and lack of storage and unstable demand were named as constraints hindering further investment. Most of them are highly dependent on orders received from NGOs, who then hand over beehives to beekeepers. They produce beehives according to a set standard. All the interviewed producers have positive attitudes about development of the sector and expect demand to grow as export markets open up and beekeepers are motivated to invest in apiaries

Lack of access to bio/organic beeswax is one of the key constraints for beekeepers wanting to become bio certified. According to the bio standard, use of bio wax in a frame hive apiary is a must, therefore support of bio wax production in the country is of utmost importance to extending bio certification in the honey sector. At present, none of the beekeepers or wax printing companies are producing bio beeswax. The Jara Beekeepers Association and a beekeeper in Racha, are motivated to start bio beeswax production. The availability of bio beeswax in Georgia would also speed up the process of currently bio certified Jara beekeepers bio certifying

[26] The JBA initiated and mentors the process of Bio certification and provides services such as consultations, bio appropriate bee treatment (oxalic acid) and honey harvest services to Jara beekeepers securing the sustainability of the association. Jara beekeepers have benefited from access to regular sales and better prices with the association paying them a higher price (5-10 Gel/kg more) compared to market price.

[27] A beehive which is made according to standard size, from well dried wood, is lighter in weight, lasts longer and is easy to transport for transhumance, has ventilation for preventing humidity and overheating in the hive.

their frame-hive apiaries, which are currently undergoing conversion[28]. Therefore, the programme will focus on supporting bio beeswax production resulting in increased volume and types of honey bio certified adding value especially for export.

LABORATORY TESTING

Laboratory testing of honey is one of the key steps in honey aggregation and export. Most honey producing/export companies, excepting ALCP clients, do not conduct laboratory testing of all the honey they aggregate from beekeepers due to the costs involved. They mainly source from beekeepers they trust or beekeepers whose honey has been tested either by themselves, by the National Food Agency under the Residue Monitoring Plan or by other honey producer/exporter companies. However this results in resulting in a lack of trust in beekeeper suppliers and a slow aggregation process in which itis difficult to include new and unknown suppliers to meet increased demand.

Some of them have had to send honey samples to foreign laboratories to meet specific importer requirements who do no yet not trust results from the state Georgian laboratory. Currently the State Laboratory of Georgia (SLA) is the only laboratory in Georgia[29] which provides the full package of honey testing including for antibiotics and quality parameters and for which it usually requires up to two weeks. It conducts honey testing using both reference and screening methods[30]. Testing via reference method is used for testing up to five honey samples handed in by export companies. Demand for testing has increased as export volumes have increased over the past two years[31]. Screening methods(quick tests) are mainly used for testing the large number of NFA collected samples under the Residue Monitoring Plan[32]. However, it is only cost-effective when forty samples are tested in one go, a service which has not been demanded from the SLA from any private sector companies to date. Only the two companies exporting in bulk, Api Geo Ltd and Gebul Commerce Ltd aggregate this amount of samples in one go. For most companies therefore the cost of quick tests are not affordable for them, which is the main reason they skip this step during aggregation.

In 2021, the ALCP co-financed Api Geo in setting up a quick testing laboratory, which allowed the company to aggregate up to a hundred samples in 2022. Other honey producing export companies are ready to pay for the quick test service at Api Geo, which plans to commercialize the service and make it accessible for other producers, helping to reduce aggregation times and increase volumes. As a private service it will be more flexible and quicker than the government service[33].

[28] Preconditions to be met for becoming bio certified e.g. refraining from the use of prohibited substances in apiary treatment.

[29] Private laboratories conduct honey testing only on key quality parameters due to current lack of demand for testing honey on antibiotics from honey producing/export companies.

[30] In general, reference methods such as HPLC (High Performance Liquid Chromatography) and ELISA (Enzyme-Linked Immunosorbent Assay) are standard methods in conducting tests on antibiotics with high precision. However, new technology innovative companies such as Randox has started to offer improved and quick methods called as screening methods, which are not yet fully recognized industry wide as reference methods.

[31] According to the SLA.

[32] 100 samples/year. Before 2020, the NFA used to send honey samples to Riga laboratory, which required more time and money. Testing in the SLA has proved to be successful.

[33] Government services require a tender before purchasing materials for testing, they tend to take longer and need longer lead times and are generally more bureaucratic, than a private sector led service who understand the exact market needs.

BIO CERTIFICATION

Bio certification of an apiary and processing unit is a necessary supporting function for high-value products like Jara honey targeted at niche markets including (Japan, Hong-Kong and Canada. Bio certification adds value to the product, guaranteeing its quality and justifying its price. Therefore, support to an expansion of bio certification is of high importance, especially for Jara honey. As a result of ALCP facilitation twenty three Jara beekeepers, the Jara Beekeepers Association processing unit and KTW Agro Keda factory became bio-certified in 2019-2021. In 2021, the ALCP facilitated the Agro Service Center of the Ministry of Agriculture of Ajara to co-finance the bio certification of Jara beekeepers and the JBA processing unit creating a model for supporting associations in the region.

A key constraint to the expansion of bio certification are the annual costs of maintaining it. Bio certificates last for a year and must be renewed annually meaning that the entity must pay for the inspection fee and costs of the certifying body which include the inspection, evaluation and issuing of the certificate. Caucascert the only Georgian certification body currently based in Georgia is costly, with fees covering their staffing costs and accreditation from Germany. Current demand is insufficient and there is currently no competition to incentivize the company to change and invest in an alternative working model such as having more regionally based inspectors.

Individual certification is much more expensive than group certification, however group certification is much harder to achieve because all members of the group must adhere to the standards and if only one does not they cannot achieve accreditation. Three years of successful bio certification developed the JBA's knowledge and capacity in terms of undergoing bio certification before they were able to contemplate beginning the group certification process.

With the support of the ALCP, the Ministry of Agriculture of Ajara's extension arm the Agro Service Center and the backstopping of bio-farm organization Elkana, the JBA is now on its way to group certification[34]. The group certification will decrease the certification cost by 39%. In 2022, the process is being financially supported by the Agro Service Center and the JBA will pay 20% of the bio certification cost. In 2022, the bio-certification cost for one kg of Jara honey will be decreased by 45% (from 5$/kg to 2.23$) compared to costs in 2019. Thus group certification offers a more affordable method of bio certification in Georgia.

See Annex 2 for a list of all companies able to carry out bio certification in Georgia although only one Caucascert is located in Georgia with representatives in country.

VET

Lack of knowledge and skills remains one of the key constraints in the honey sector. Most beekeepers use knowledge that was transferred to them from parents or grandparents. Most of them are not able to enrol in VET colleges to improve their knowledge due to lack of time. In Georgia, out of eighty five VET colleges eleven teach beekeeping in seven regions of Georgia[35]. All of these VET colleges offer a long-term beekeeping programme that lasts for a year, only one of them offers a short-term course that lasts for three months[36]. The demand for beekeeping education is high from non-beekeepers who wish to learn about beekeeping and the number of applicants increases every year.

[34] Uniting 24 beekeepers. Preparatory works included an internal control system being developed, the JBA staff and its member beekeepers were trained, internal inspectors and quality manager were selected.
[35] Except Racha and Guria.
[36] Farmers School, Kakheti. For short-term courses a certificate is issued, a long-term programme is more comprehensive, and a diploma is issued.

According to the ALCP survey *Beekeeping and Vocational Education in Georgia, 2020,* VET colleges lack illustrated modern teaching materials, such as books, guidelines, infographics. Teaching materials are old, they are not updated on a regular basis and as a result do not correspond to the beekeeping Framework Document developed by the National Center for Educational Quality Enhancement[37]. College lecturers do not have a diploma in the field, are mainly hired based on their practical experience and communication skills, however they are not aware of modern teaching methodology and approaches. The above-mentioned constraints directly reflect on the teaching quality and the knowledge received by the graduates. In response to this, the Georgian Beekeepers Union with the ALCP support submitted an initiative letter to the Professional Skills Agency[38] in Spring, 2022 for reviewing and upgrading the beekeeping programme in VET colleges. VET colleges are motivated to improve the long-term beekeeping programme, and also develop short-term courses for bee product production e.g. queen bee, propolis, royal jelly, bee venom, bee pollen in cooperation with the GBU and the ALCP facilitation.

EXPANDING JARA THROUGH VOCATIONAL EDUCATIONAL TRAINING

As part of ALCP facilitation, the GBU in partnership with the JBA undertook the role of promoting the know-how of how to produce Jara honey via VET colleges throughout Georgia to make it accessible for beekeepers[39].

The production of Jara honey is becoming attractive among both beginner and experienced beekeepers across Georgia and VET colleges are increasing the quota of students to be accepted. The GBU is now working on the formal accreditation of the Jara module by the Professional Skills Agency which will allow VET colleges to offer Jara module as a separate subject in the existing programme and initiate short-term course for students interested in Jara beekeeping.

INTERNATIONAL PROMOTION

A lack of officially supported promotion of Georgian honey in target export countries was named by honey producing/export companies as one of the key constraints to honey export. Georgian honey appeared in international markets only in 2019 entering Germany, USA, Japan and the UAE. Since then, export markets have been expanding but consumers in export countries still lack awareness of Georgian honey in a ferociously competitive market. The ALCP supported the first major promotion of Georgian honey at Apimondia[40] in Istanbul in 2017, support continued by the Ministry of Environment Protection and Agriculture of Georgia in 2019 in Apimondia in Montreal and again in 2022 in Istanbul[41], resulted in the Georgian Beekeepers Union and its member honey producing/export companies being introduced to the honey market worldwide. In addition, Georgian Embassies in Great Britain and Qatar helped introduce Georgian honey and Georgian honey has won awards in the last couple of years at the London Honey Awards.

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[37] Legal Entity of Public law (LEPL) within the Ministry of Education and Science of Georgia, which was created by the Reorganization of LEPL - National Center for Accreditation on September 14, 2010 on the basis of the order N89/N of the Ministry of Education and Science of Georgia for the purpose to improve educational quality throughout the country.

[38] The Skills Agency was established in January 2022 by the Ministry of Education and Science of Georgia and the Georgian Chamber of Commerce and Industry. It is a non-commercial legal entity and represents a private-public partnership responsible for shaping and implementing the national skills policy.

[39] In 2021 a Jara Honey Production Handbook was created, thirteen VET college representatives received Jara honey production training of trainers in Ajara and Jara equipment to start Jara teaching. In eight VET colleges in 2021, 27 students received Jara know-how[39], 106 students are currently studying and 74 more will start from November 2022. Four more VET colleges will start teaching Jara beekeeping from 2023.

[40] Apimondia is the largest and most well-known and important beekeeping expo in the world. All serious private sector entities, experts, academics and government agencies attend from all over the world.

[41] The Rural Development Agency (RDA), representing Georgia at the 47th Apimondia Congress 2022 in Istanbul, Turkey, was awarded a Gold Medal for outstanding design of a trade stand in the 36 square meters category. Georgia was selected from among ten other nominees.

However, the image of Georgia as the 'land of the oldest honey' needs to be promoted more in target countries as was done with wine, which in turn will stimulate demand for Georgian honey and other products, giving more export opportunities to honey producers. The government agencies responsible for this type of promotion are the Rural Development Agency and Enterprise Georgia as well as the Ministry of Foreign Affairs responsible for the Consulates and embassies of Georgia abroad. The programme will facilitate the Georgian Beekeepers Union and its member honey producing/export companies to advocate for improved promotion of Georgian honey in target export countries such as Gulf countries and the EU.

RULES

The Georgian Beekeepers Union will be key to achieving further honey sector expansion and development as it is the main advocate, organizer and knowledge development and transfer hub for the sector and will remain essential in the ALCP2. In 2018, extensive market research *Prospects for the Export of Georgian Honey 2017* conducted by the ALCP, revealed that the honey sector was fragmented without a unified vision of honey stakeholders. There were several beekeeping associations functioning in the sector but were fragmented, often divided and none of them performed the advocacy role needed for addressing the constraints in the sector. Therefore, the ALCP facilitated seven sectoral associations and two private companies to unite and create an umbrella association the Georgian Beekeepers Union in November 2018 which to date, after four years, comprises nine associations and nineteen private sector companies with five thousand five hundred beekeepers registered in its database.

The honey sector has seen huge gains, under the auspices of the GBU, which is leading efforts to remove pervasive constraints to growth such as the widespread use of prohibited antibiotics, lack of information and knowledge and lack of coordination and advocacy with the relevant governmental agencies such as the MEPA, the NFA and the RDA. Performing the role of non-governmental national representative of the honey sector the GBU has been working on the Beekeeping Development Strategy with the MEPA, developed and is leading nationwide beekeepers trainings with the RDA, cooperates with VET colleges on beekeeping study modules and practice, and works with the NFA regarding the disease control and registration of beehives in the NAITS programme.

The GBU has played huge role in promotion and export success of Georgian honey. In the recent years, the main Georgian honey export companies became members of the Union seeing the benefits it could deliver to their companies. . The role of the GBU will still be pivotal in developing the international image of Georgian honey and advocating with the government to open up export markets especially for chestnut honey. At present, Georgian chestnut honey has limited export markets, highly dependent on smuggling to Turkey hindering development of formal market and investment by suppliers. Advocacy with the Ministry of Environment Protection and Agriculture and the Ministry of Economy and Sustainable Development of Georgia to open up a legal Turkish market for the Georgian chestnut honey will reduce illegal trade and instability of honey producer's dependence on informal Turkish market. Therefore, the ALCP2will support the GBU in advocacy initiatives with the government to remove constraints to the sector.

LOCAL GOVERNMENT SUPPORT TO AND REGIONAL NFA CONTROL OF TRANSHUMANCE AND HONEY PRODUCTION

According to *Livestock Producers and Beekeepers Focus Group Survey*, lack of organized transhumance and lack of apiary monitoring and disease control on pastures together with poor road access limits beekeepers' transhumance, which then affects honey production volumes. The National Food Agency lacks the capacity to conduct apiary monitoring and inspection resulting in poor traceability and risk of disease transmission[42] on

[42] Especially Varroa

pastures. This in turn increases risks[43] for beekeepers, who practice transhumance. The survey also emphasized the importance of transhumance in helping to cope with and manage some of the adverse affects of climate change on beekeeping.

According to beekeepers, there are places in their municipalities especially in high mountains for bee transhumance, but they cannot access them due to bad roads. Interviewed beekeepers in Ajara, Imereti and Kakheti mentioned uncontrolled cutting down of Acacia trees, which is widely used for vineyards. All these underline the important role of the GBU to protect beekeepers' interest and advocacy with the national and local government for improved municipal transhumance access and use and the importance of equitable natural resource use for rural inhabitants which will be pursued under Outcome 3 of the ALCP2 (Please refer to the ALCP2 Governance Market Research Report for more detail).

BIO CERTIFICATION SUPPORT PROGRAMMES

Jara honey was the first bio certified honey in Georgia. As a result of ALCP support, experience and relevant expertise now exists to support honey bio certification[44] in Georgia. The cost of individual certification remains very high and is unachievable for a beekeeper without financial support. In response to this, the Agrarian Committee of the Georgian Parliament initiated a new programme Bioproduction Promotion Programme in 2022 for the support of the bio production in the country[45]. However, the government contribution would not be enough to cover bio-certification costs and does not include costs related to rearranging the whole apiary according to the bio standard, therefore there have been no beekeeper applicants despite high interest from beekeepers. The government programme is not tailored at needs of the associations or groups[46], such as the Jara Beekeepers Association and its member beekeepers and excludes them as they are already bio certified[47]. However, bio certified Jara beekeepers, who have been following the bio standard for four years now have more advantage and more potential to become 'fully' bio certified[48]. Therefore, there is scope to both advertise and improve the targeting of the programme for expanded applicability to government bio certification support programme.

[43] Disease spread in apiaries leads to decreased productivity and resilience of bee colonies, thus affecting honey volumes and income.

[44] Three Beekeepers in Guria, Samegrelo, and Imereti inspired by Bio certification of Jara honey have applied to IFC grants to gain bio certification from Caucascert in 2021. In 2022, one beekeeper from Lechkhumi and two companies in Ratcha have applied to GRETA to co-finance bio certification and receive a certificate from Caucascert in 2023. Caucascert Ltd is the only accredited certification body in Georgia (See Annex 2), which gained significant experience in honey bio certification based on Jara bio certification process.

[45] In July 2022, the Rural Development Agency (RDA) announced the call for applications and among the different sectors covered by the programme, beekeeping is one of the most important. The programme foresees co-finance of the following costs: a) bio certification costs; b) consultancy service costs; c) purchase of organic fertilizers and pesticides; d) purchase of bio vet drugs and organic beeswax; d) honey and beeswax laboratory analysis costs. Any applicants willing to start bio production or being on conversion period can apply to the programme. The RDA will co-finance no more than 70% (not more than 7,000 Gel) of bio certification costs, consultancy service and/or laboratory analysis of honey and wax. Regarding the purchase of bio vet drugs, the RDA will co-finance max. 50 Gel/hive and not more than 5,100 Gel/applicant.

[46] The programme covers only individual certification costs and is targeted to applicants wishing to start the bio production or are on conversion period.

[47] Their Jara apiaries are bio certified and frame-hive apiaries are on conversion (due to unavailability of bio wax in the country).

[48] I.e. both, Jara apiary + frame apiary.

SUMMARY MARKET ANALYSIS – QUEEN BEE PRODUCTION

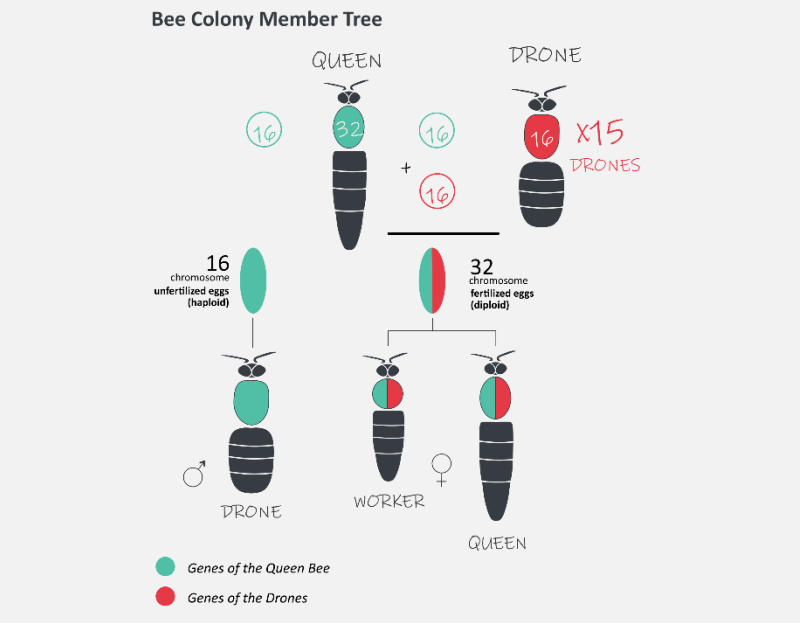
The following tables and figures contain the summary market analysis; relevance of the sector to the target group, its pro poor potential, intervention potential and key constraints in the three parts of the queen bee market system. The GBU will play pivotal role to addressing key constraints in the sector. The findings of this research will be fed into future planning of the intervention with the GBU in order to maximize and support their efforts to facilitate and overcome the constraints to achieve more sustainable market for beekeepers.

CORE PROGRAMME TARGET GROUP & PRO POOR POTENTIAL

Queen bee rearing is a common practice in beekeeping worldwide. Beekeepers tend to change queen bees once every 1-3 years[49] as the productivity and strength[50] of a colony is highly dependent on its queen bee. Queen bees are used also for creating a new colony[51]. More than 90% of beekeepers worldwide do it by themselves using different breeding methods[52]. Most beekeepers use simple methods of removing queen bees. They mainly purchase mated queen bees from breeders in order to make genetic improvement to the colonies in their apiary. Worldwide, beekeepers tend to keep a particular breed in their apiary. Such beekeepers need pure breed queen to maintain the characteristics of a breed. The purer a queen bee breed is in a colony more likely the colony will maintain advantages of the breed characteristics. The improvement is inherited in the next generations[53]. However, after three generations a new improvement is required especially if the breed is not native.

Georgia is a homeland[54] of the well-known honeybee breed Caucasian Bee (*Apis mellifera caucasica*) also called Caucasica, Caucasian Mountain Grey Bee or Georgian Bee hereinafter referred to as Caucasian Bee. Georgia has an opportunity to become the best donor for the breed worldwide due to breed purity having remained relatively intact. The breed is a source of pride for Georgian beekeepers. Most of them have traditionally been protective of the breed which could be one of the main reasons that Georgia somehow managed to avoid the massive import of non-native breeds, a process widespread globally since the beginning of the twentieth century.

[49] Queen bees can live up to seven years. However, their egg laying is drastically reduced after a year or two.
[50] The strength of a colony is defined by the volume of its worker bee's swarm.
[51] A new colony is produced by splitting an existing colony. It can be done naturally (natural swarming) and artificially (by beekeeper). In the case of artificial splitting, beekeepers insert another queen bee prepared (reared) beforehand.
[52] Mostly used ones are simple and selective breeding. Simple selection is when queen bee is raised in a strong colony. As a rule, it has higher productivity (egg laying). Whereas selective breeding involves choosing parents (queen bee and drones) with particular characteristics to breed together and produce offspring with more desirable characteristics. The most precise selective breeding is done via using artificial instrumental insemination. See Annex 3 for detailed information.
[53] The next generation bees can be even more productive than the first.
[54] The breed also can be found in Armenia, Azerbaijan and eastern Turkey.



Who is the Queen Bee? A queen bee is a female adult bee with fully developed reproductive organs. The queen is usually[55] is the mother of all bees in the colony. There is only one queen in a hive and all the colony protects her. Her main task is laying eggs (on average 1,500 per day). The queen is mated (in flight) once in her life by 10-20 drones (male bees) storing millions of sperm that will be selectively released throughout her life (up to seven years). The queen lays fertilized eggs (diploid) for female and unfertilized eggs (haploid) for male bees. drones have genes only of their mother while their sister worker bees and possible queens have the genes of their mother and fathers. This fact is important for breeders in the planning of selection.

How are they Reared? Rearing methods differ, but the formula is: the beekeeper removes the queen, all eggs and most of larvae from the colony which artificially creates an emergency situation in a colony. Worker bees begin actively feeding young larvae (12-24 hours old) with a lot of royal jelly and building a higher cell[56] in order to develop a sexually matured bee. After 13-14 days the colony has a new queen. Beekeepers know this and as a rule place young larvae in 25 cell cups[57] in a usual hive, then before they hatch they remove the cups into a special hive called a nuc. They are then moved into mating nucs.

How are they Mated? Breeder beekeepers place the virgin queen bees in a special mating nuc with worker bees to take care of the queen. After 3-5 days the queen begins nuptial flight(s)[58] to find a drone swarm. The queen can fly up to 16 km in the search. Thus breeders that care about breed improvement, place selected drone hives near the nucs or use an area that is isolated[59] from the drones of other colonies. For more precise control of the process, breeders use instrumental insemination.

What is Instrumental Insemination? Instrumental insemination is the artificial insemination[60] of queen bees using special equipment. It is the most precise method of selective breeding and needs developed skills. The basic instrument consists of a stand, a set of hooks or forceps, queen holder assembly, a syringe, syringe tips and sometimes a microscope. The method includes collecting semen from dozens of drones (8 microliters) and inseminating the queen (anesthetized by CO_2). The instrumental method provides the opportunity to fully control the breeding process as the breeder can use selected[61] drones for mating. Instrumentally Inseminated Queens (IIQs) can perform as well or better than Naturally Mated Queens (NMQs). The price for IIQ can be 3-4 times higher than for NMQ.

Figure 3 Overview of Queen Bee Breeding

[55] There is an exception when worker bee begins laying unfertilized eggs in the long-time absence of queen in the colony. Such bee is called laying worker bee.
[56] For the queen, worker bees build cells of greater height from wax, to create conditions for the full development of larvae and their reproductive organs. Larvae from cells of usual height produce worker bees.
[57] A special cell cup is an artificial cell made from wax, metal or plastic prepared by a beekeeper beforehand, allowing the beekeeper to control the process, where a young larva is placed (grafting) artificially by hand or using other special kits (e.g. Jenter kit or other) into the cup.
[58] It can be one or several.
[59] It could be an island or a gorge. Breeders try to avoid mating queen with drones from other/unnecessary colonies, especially from other apiaries, in order to avoid crossbreeding, hybridization or breeding with drones of irrelevant gen and characteristics.
[60] Drone semen can also be collected (also called germ plasm) and can be frozen and sold.
[61] Selected drones can be reared specifically for breeding: beekeepers place specific cell cups in the hive; drone cells have larger diameter than worker and queen cells, which forcing the queen to lay drone eggs (unfertilized eggs).

However several major constraints exist which prevent the country and producers being able to benefit from this competitive advantage. Table 1 below summarizes the high relevance, pro-poor potential, and impact potential to the target group and the areas of intervention.

Table 6 Relevance & Pro Poor Potential and Intervention Impact Potential

RELEVANCE	PRO POOR POTENTIAL	INTERVENTION POTENTIAL
High: Live bees[62] have high potential for export with clear international demand. The Caucasian Bee makes Georgia a special place in the beekeeping world. Demand for the Caucasian Bee is increasing. Protection and conservation of the breed can play an important role in biodiversity and environmental protection, especially considering climate change and its impact.	**High:** High potential to promote Georgia in international markets thus strengthening the export market more generally to which beekeepers can supply honey. Beekeepers have opportunities for diversification of production and markets. Improved access to higher quality breed for Georgian beekeepers can increase their apiary productivity and resilience against diseases and climate change.	**High:** Interventions focused on facilitating *export of queen bees*: Under the auspices of the GBU several activities centered around coordination, information and knowledge, national regulation to enable formalized export and government supported international promotion would be facilitated including: creation of queen bee breeders group, capacity building of existing queen bee breeders, creation of production standard and guidelines, opening up new export markets for live bees, creation of system for monitoring of apiaries, listing of Georgia in EU 3rd country list for export of live bees, formalizing bee export to Turkey and increasing international recognition of Georgia as a producer of pure breed. Interventions focused on facilitating the *conservation of Caucasian Bee* under the auspices of the GBU*:* ongoing morphological surveys of the Caucasian Bee, convene scientific research group with international outreach and create strategy for conservation of the Caucasian Bee.

[62] Mainly queen bees and worker bees

Table 5 bellow illustrates systemic constraints to the supporting functions; core market and rules are offset by the drivers and pro poor opportunities in the current climate offering significant leverage to conduct successful interventions in the honey sector.

Table 7 Systemic constraints to the supporting functions; core market and rules

SYSTEMIC CONSTRAINTS SUPPORTING FUNCTIONS	PRO POOR OPPORTUNITIES AND DRIVERS
Lack of scientific research regarding bee breeds in Georgia. Low international recognition of Georgia as the homeland of Caucasian Bee. Absence of apiary testing stations providing pure donor breeds to breeders. Lack of capacity for systemic apiary inspection/monitoring (NFA). Lack of skilled labour force.	Morphological surveys of Caucasian Bee breed, including internationally disseminated studies will increase recognition of Georgia, stimulate interest and further research into the breed. More research means better quality of breeds, better practices for beekeepers and higher resilience for bee colonies against diseases. Effective apiary inspection system (e.g., GBU can train NFA inspectors, GBU providing service to the government or facilitate other organization) results in improved access to veterinary certificate that is mandatory for official export. Developed guidelines, cooperation (exchange of breeding materials) and quality control system will lead to improved breed production and quality. Educational modules in VET will create opportunities for rural producers to access breeding labour market. Improved access to high quality and more productive breeds for beekeepers.
SYSTEMIC CONSTRAINTS CORE MARKET	**PRO POOR OPPORTUNITIES AND DRIVERS**
Lack of access to export markets. Lack of equipment and practical knowledge for artificial insemination.	Export of queen bees and live bees to other countries will create a foothold for producers, and create opportunities for beekeepers to improve breeds, productivity, income and resilience. Breeders arrange apiaries for better selective breeding, implement instrumental insemination in production. It gives higher control of the process and allows for more precise management. As the result, producers have better breeding material and a higher quality product.
SYSTEMIC CONSTRAINTS RULES	**PRO POOR OPPORTUNITIES AND DRIVERS**
Absence in EU 3rd country list for exporting live bees. Unstable Turkish smuggling market: difficulties with transportation, unstable demand and price. Absence of a breed protection strategy.	Advocacy to the government to start the process and facilitate fulfilling recommendations or improvements for 3rd country listing and to formalize Turkish market for Caucasian Bee will open the closest large and stable market, creating a new opportunity for breeders and beekeepers of Georgia. Protection of the Caucasian Bee breed in Georgia via official restriction of import of other breeds will minimize the risk of cross breeding and increase preservation of the breed. It will increase the recognition of Georgia as homeland and “best producer” of the Caucasian Bee.

SUPPORTING FUNCTIONS

There are several constraints that can be identified as key supporting functions in the queen bee sector: lack of apiary inspection, lack of scientific research, lack of testing station and lack of skilled labour force.

APIARY INSPECTION

Bees, like other animals, have diseases. The effective management and control is one of the key elements for sustainable development of the sector. Most countries in the world strictly monitor the spread of diseases to effectively prevent the risks they can cause. Beekeeping is not an exception. In most countries, government bodies are obliged to provide management and inspection of apiaries in their countries. The authorities also strictly control import of animals from other countries, requiring health certificates (also called veterinary certificates) and limiting eligible countries for import[63]. The absence of a health certificate has been one of the main but not the only (see Rules section) constraint for Georgian breeders to officially export queen bees. As the National Food Agency cannot comply to the requirements of the certificate as it has not managed effective apiary monitoring for disease control which in itself also requires a system of apiary identification which has yet to be initiated.

In October 2021 Georgia adopted the Regulation 505 *for animal identification-registration and registration of their shed/temporary shed* that will be enforced in January 2023. According to the regulation, it will be mandatory for beekeepers to register their apiaries in the National Animal Identification and Traceability System[64] (NAITS). After enforcement the NFA will be officially responsible for monitoring of apiaries in Georgia. The main concerns regarding effective monitoring of apiaries by the NFA is believed to be a lack of inspectors and their skills and knowledge to accurately identify bee diseases. The GBU is a key organisation in the sector that can play pivotal role in facilitating the NFA to create effective apiary inspection system that will benefit all stakeholders of the sector.

TESTING STATION

An operating testing station is highly important for Caucasian Bee breeders to receive breeding materials that can be used as donors for their future breeds.

Breeding facilities can be divided into two types, a breeding facility also called a testing station, that aims to produce pure and improved breeds and then sells mated queen bees (breeding material) to breeders and a breeding facility owned by breeders for producing and commercial sales of mated queen bees to beekeepers that are often produced from breeding material purchased from the testing station or from another commercial breeder. Testing stations are very important element for sustainable and effective breeding system. Queen bees can fly up to sixteen km for mating thus testing stations as a rule should be located in isolated places such as islands or gorges[65]. This enables better selection works, controlled breed improvement scientific observations and testing.

At present, only one station operates Georgia[66], in Mukhuri which is a government property. The station was established in 1949 but was closed soon after the collapse of USSR. In 2017 the Georgian government restored the building and handed it over to Scientific-Research Center of the Ministry of Environmental Protection and Agriculture of Georgia. Unfortunately, the station work is limited due to scarce human and financial resources. Lack of research and surveys for decades regarding the Caucasian Bee as well as selection works significantly

[63] As the rule the countries where the dangerous diseases are widespread, or animal diseases management is poor.

[64] Electronic system of MEPA for identification and traceability of animals, farms, apiaries in Georgia. Currently run by SDC ADA supported NAITS programme the ALCP2 will coordinate with them on this topic.

[65] It avoids crossbreeding and hybridization with drone of unnecessary breed or colony

[66] Chkhorotsku Municipality, Samegrelo.

impacts on the results achieved to date. Besides that for the last two decades many beekeepers used the Mukhuri Gorge for transhumance, distorting the isolation of the area. Several beekeepers have expressed willingness to arrange such a station in isolated area to protect the breed and improve it, but they lack knowledge, experience and finances to do it. The GBU is an organisation that can effectively work to facilitate cooperation between government, beekeepers, breeders and scientists to address this constraint.

SCIENTIFIC RESEARCH AND SURVEYS

As mentioned above, significant scientific research or surveys regarding Caucasian Bee in Georgia has been lacking for the decades. At this moment no official scientific surveys exist that prove an evidence that the genetic characteristics of the Caucasian Bee breed in Georgia remains intact and has not been impacted by hybridization[67]. However, there is unofficial ongoing morphological research regarding the breed[68] done by enthusiast researchers with no financing. For identification of a breed "purity", scientists use morphological research. There are two main methods for research: genetic and geometric morphometry[69] analyses. There are disputes about which one is more precise but nowadays it is believed that the geometric one is better. Both of these methods have been utilized by enthusiast researchers; however the results of the genetic research are unknown, but the results of the morphological research are optimistic. According to the results, 80% of already assessed bees (from 105 colonies) have the characteristics of the pure Caucasian Bee breed and 10% are eligible for selective breeding. Facilitating the research can speed up the process and identify colonies that can be used as donors for producing breeding materials for testing stations.

Lack of scientific research and surveys has impacted the international image and popularity of the Caucasian Bee breed. There is less demand for the breed than forty years ago. The Carniolan and Buckfast are more popular breeds. The Caucasian bee breed is famous for producing large amount of propolis that has previously been considered a disadvantage[70]. However, this can be reconsidered in light of the use of propolis within bee hives and its help in developing resilience to climate changes[71] and markets for propolis in the health industry are expanding rapidly. Taking above mentioned constraints into account, it is important to facilitate the creation of scientific research group for the sector development and its international recognition.

INFORMATION AND SKILLS

Knowledge of queen bee breeding is mainly limited to practitioner breeders and information exchange is almost non-existent, which limits interested beekeepers practicing queen bee breeding Many key informant breeders also emphasized the lack of a skilled labour force on the market. Facilitation of beekeeping modules on queen bee breeding can create opportunity for further employment. The development and dissemination of practical video lessons via social media is of utmost importance. Therefore, the programme will focus on this under Outcome 1 which deals with agri information.

[67] Mixing of breeds.

[68] In particular, the aim of the research is to identify if breeds currently widespread in Georgia are really the Caucasian Bee and what is the level of hybridization with other breeds.

[69] The method includes measuring body shapes via screening and comparing it to the database of the samples that were taken before (e.g. database of Friedrich Ruttner and other experts).

[70] A bee colony spends more time on creating favourable conditions for improved resilience to strict climate conditions, which may not be relevant for particular countries.

[71] Bees use propolis for gluing holes in a hive for better temperature isolation and climate control within the hive that is especially important in case of changeable weather. Pharmaceutical usage of propolis has also grown.

CORE MARKET

CURRENT STATUS

The international demand for the Caucasian Bee appeared very soon after the collapse of the Soviet Union. Despite the constraints outlined above, some Georgian breeders managed to export live bees to France and Turkey. However, in early 2000`s a new regulation was imposed in the EU and Turkey limiting the import of live bees from other countries. With the EU and formal Turkish markets closed, an illegal smuggling market opened to Turkey. During the last decade the sales of queen bees became more profitable than honey, therefore many beekeepers switched production. Approximately 20,000[72] queen bees with a value of more than 500,000 GEL are being smuggled to Turkey annually. However, after the pandemic the volume decreased by 40%, a significant drop for producers, who do not know exactly why. The most obvious is the devaluation of the Turkish lira[73], however the breeders also mentioned the decline of Turkish beekeeping sector, increased production of Caucasian Grey Bee in Turkey and switch to other bee breeds from Turkish beekeepers. As a result, some breeders have switched to acacia honey production as it has a better market now.

At this moment there are at around fifty commercial bee breeders in Georgia. More than 75% are located in Western Georgia. Their main market was Turkey (at around 80%) before the pandemic but export is now more or less equal to the domestic market. Breeders in the East and South of Georgia are more oriented on local markets. Some of them manage to sell in Azerbaijan and Armenia, but the demand is not regular or stable. Most of the breeders use only simple selection works. None of them have testing stations, do not conduct instrumental insemination and do not keep records or take productivity measurements of their queen bees. None of them have clearly defined pure breed colonies for breeding. Production has centred on quantity not quality due to the fact that Turkish beekeepers do not have strict requirements. Georgian beekeepers are often unwilling to pay 20-25 GEL for a queen bee that they think are not higher quality than their own. Low quality, lack of trust and price results in low demand, which then hampers the development of the queen bee breeding business through lack of investment in improved techniques making it unsustainable.

POTENTIAL FOR GROWTH

Official access to export markets would be a game changer for the bee breeding sector. A stable export market would facilitate the implementation of better practices and approaches which would lead to the improved quality. Improved breeding can impact the entire beekeeping sector, increasing apiary productivity and resilience against diseases ultimately benefitting Georgian honey producer HH`s.

Most countries have several non-native breeds. Overall, there are around twenty-six honeybee subspecies in the world including genetic hybrids. However, beekeepers mainly use six breeds: Caucasian, Carniolan, Italian, Buckfast, Russian and German. The Caucasian breed is a widespread breed around the world. In the USA the breed appeared at the end of 19th century[74] and was very popular in the US for a while. Many beekeepers are still using it or a crossbreed with the Carniolan. Some US breeders of the Caucasian Bee US regularly visit Georgia for collecting breed germplasm. The import of honeybees is restricted in the US as well as germplasm[75]. The breed has been popular in EU countries as well and breeders from the EU also use them for crossbreeding.

However, Georgia is not currently a supplier of the breed. Main suppliers of the Caucasian Bee worldwide are Russia[76], Turkey and Poland. They produce breeds in special testing stations that are isolated and use artificial insemination for selection works. The key constraint for Georgian producers for exporting to the EU and other

[72] Assessment made according to the key informant interviews
[73] The drop of Lira against Georgian Lari was -300% for the last year, -550% since 2015.
[74] Find more about here
[75] In accordance with honeybee act of 2004, the import is allowed for only few countries (New Zealand and Canada). Please find more here.
[76] Main producer is a government bee testing station Krasnaia Poliana located near Sochi.

countries is that Georgia is not listed in the EU Third country list for exporting live bees (see Rules section). The GBU regularly receives requests from EU countries, especially after the beginning of the war Ukraine as importing from Russia became harder. The prices for Caucasian queen bees in the EU vary from 15-50 Euros for Newly Mated Queens to 100-160 Euros for Instrumentally Inseminated Queens[77].

RULES

This section describes the constraints regarding formal and informal rules, regulation and advocacy.

EU MARKET AND THIRD COUNTRY LIST

As mentioned in the sections above, the EU is believed to be one of the most promising markets for Georgian breeders, but the absence of Georgia in the EU 3rd Country List hampers the process. Direct guidelines on how to become enlisted do not exist, however considering the requirements of the health certificate it is obvious that the country should have an effective apiary monitoring system regarding diseases. In particular, the authority should be able to define the existence of diseases such as Small hive beetle (*Aethina tumida* or *Tropilaelaps*)[78], American foulbrood[79], Varroa[80] and others. The import of queen bees is regulated by Regulation 2020/692 (Title 4) as *regards rules for entry into the Union, and the movement and handling after entry of consignments of certain animals, germinal products and products of animal origin*. The Third Country List is defined in the Regulation EU 2021/404 of 24 March 2021 (Annex VII).

Georgia could easily comply with requirements after it starts apiary monitoring and neighbouring countries Russia and Turkey are already listed. The health certificate (veterinary certificate) form of Georgia is already harmonized with that of the EU. Georgia has already adopted a regulation regarding the identification of apiaries (see Supporting Function section). However, beforehand it is also important to develop regulations regarding breeding facilities and define production guidelines as was done by Slovenia regarding the Carniolan bee breed (see below).

The role of the GBU will be vital in advocacy to speed up the process of entering Georgia in EU 3rd country list, opening new opportunities for Georgian beekeepers.

FORMALIZING ILLEGAL EXPORT MARKETS

Apart from the EU and other prospective markets, Georgia already has a large illegal Turkish market with trade volume exceeding 20,000 queen bees per year. However, the existing smuggling market is unstable, unpredictable and risky. There are frequent losses of live bees and also money from smuggling sometimes resulting in an arrest at the Georgia-Turkey border in Sarpi, Ajara. The formalization of existing markets would be a significant achievement for Georgian queen bee breeders. The GBU briefly discussed the topic with the head of the Turkish Beekeepers Association in Apimondia 2022. The parties agreed to continue discussion in the future. Interest in the breed has been always noticeable from US beekeepers since the beginning of the 20th century and it could have been a huge market for Georgian breeders. However, the US limits the import of queen bees and even germ plasm according to an approved country list[81] as does the EU. Unfortunately, entering the US market seems more difficult than EU as there are no exact guidelines as to how to be listed in the approved country list.

[77] See How It Works section

[78] None of these diseases were found in Georgia nor in Neighbour country regions. EU requires that the diseases should not be found at least in 100 km radius.

[79] At least 3 km radius to the apiary

[80] Consignment should not include bees with Varroa mite

[81] At this moment queen bees are allowed only from New Zealand, Australia and Canada and germ plasm from Australia, Bermuda, Canada, France, Great Britain, New Zealand, and Sweden. For more here.

In the last decade significant concerns appeared regarding the protection of the Caucasian Bee breed. The main reason is the active import of other breeds in neighbouring countries Azerbaijan and Armenia. It is believed that in Armenia the process has gone too far. There beekeepers are massively importing Carniolan and Buckfast breeds. The process might also impact Georgia as some beekeepers in Ninotsminda, Samtskhe-Javakheti region near the Armenian border, mentioned their desire to import the Buckfast breed as it could be more resilient to climate change in the region[82]. At present, there is no official restriction to the import of other breeds in Georgia. Considering also uncontrolled transhumance within Georgia the threat of hybridization seems real.

Official protection of the Caucasian Bee breed would increase the preservation of the breed and on the other hand it would increase the international recognition of Georgia as a serious honey producing entity. However, it is important to accomplish it in the right way with an appropriate strategy. Slovenia went through a similar process for protecting the Carniolan bee breed. It is critical to learn more about their experience. The ALCP2 facilitated building linkages between the GBU and the Slovenian Beekeepers Association in Apimondia 2022 in Istanbul, Turkey. The programme will continue its support and facilitation of the GBU in deepening linkages with above mentioned associations for improved advocacy and legitimacy of international image of Georgian queen bee market.

[82] The *ALCP2 Livestock Producer and Beekeeper Focus Group Survey* 2022

ANNEX 1 KEY INFORMANT TABLE

#	Key Informant	Date	Organization/ Specialization	Location and Link to Project
Supporting Functions				
Beehives				
KI 1	Zviad Kokoladze	October, 2022	Beehive producer	Chukuneti, Khelvachauri, Ajara: Zviad has been producing and selling beehives for 2 years already. He is a beekeeper and when he produced beehives for himself neighbors and relatives liked it and order, so he started to commercialize beehive production. He produces mainly Dadant type beehives and frames. In 2022, Zviad produced 150 Dadant type beehives and 2000 frames and sold to about 15 beekeepers. In the case of demand, Zviad can produce 100 beehives/month. He has some old equipment and 1 equipment that was financed by the project implemented by business incubator of Batumi.
KI 2	Shalva Kutchava	October, 2022	Beehive producer	Tskaltubo, Imereti: Shalva has been producing beehives since 2010. He has a beekeeping shop in Kutaisi and he saw demand on beehives, therefore, started beehive production which makes 30% of his income today. Shalva mainly produces Dadant type beehives, but if the beekeeper demands for other type of beehive he can produce. In 2022, Shalva produced 300 Dadant type beehives, 20 Nucleus beehives and 10,000 Frames and served about 100 beekeepers, out of them 20 are females. The majority (60%) of beekeepers are from Imereti, the rest from Guria, Samegrelo, Svaneti. Shalva employees 3 persons (all are males). He received some equipment from Pin project.
KI 3	Mirza Julakidze	October, 2022	Beehive producer	Kumuri village, Vani, Imereti: Mirza has been producing thermo beehives for 11 years. In 2021 and 2022 Mirza produced 30-30 thermo beehives, while in 2020 – 150 beehives. Beehives are produced from penopolistirol which is imported from Russia. Price of the raw material and thus the selling price of the thermo beehives increased, therefore the demand decreased. Mirza has a Facebook page - 'Mirza's thermo beehives' and beekeepers can make orders through this channel as well as by phone. The number of beekeepers purchasing thermo beehives are up to 10 who are the stable customers.
KI 4	Mishiko Akhaladze	October, 2022	Beehive producer	Didi Jikhaishi, Imereti: Mishiko has been producing beehives and frames for 8 years. His father is a carpenter, and it is a family business, 4 family members are involved in beehive production. Mishiko produces mainly Dadant type beehive, with 10 frames and rarely Root type beehives. In 2022, he produced 500 pieces of Dadant type beehives, 30 pcs of Root type beehives, 7000 frames and

				2500 half-frames, in 2021 he sold 300 Dadant type beehives, 50 pcs of Root type beehives and 3000 frames. Mishiko serves beekeepers from Imereti (70%) and other regions (30%) such as Guria, Ratcha, Tbilisi. In total he served about 50 beekeepers in 2022, 30 beekeepers in 2021. The production facility is equipped with old, German equipment, in the future Mishiko wants to renew the production facility and equipment, which will help to decrease production cost and time.
KI 5	Avto Khukhaneishvili	October, 2022	Beehive producer	Lanchkhuti, Guria: Avto is a beekeeper. He has been producing beehives and frames for 6 years. Beehive inputs production takes 30% from the whole income, others are production of honey and bee venom. He actively cooperates with another beehive producer Tamaz Ghlonti. He produces both types of hives (Dadant and Root) in accordance with requests. The prices does not significantly differ from each other. The producer is quite popular amongst beekeepers. He produces more than 1,000 hives per year. At around 60% of requests comes from private companies and NGO sector. At around 100 beekeeper purchases hives, frames or other parts annually. However, the requests from beekeepers declined for 50% for the last year. The producer employees 4 man for full time and 2 part time (30-50 GEL/day). The main constraints for producer is lack of working and storage space as well as better equipment (professional) for more massive production. The producer plans to renew the production facility (build additional premises and equipment) using Enterprise Georgia grant (35,000 GEL) and own finances. However, the finances would not be enough for re-equipping the facility.
KI 6	Mikheil Tetruashvili, Imperveti	October, 2022	Beehive producer	Zugdidi, Samegrelo: Impervet Ltd is the largest beekeeping inputs supplier in Georgia. Besides drugs and other beekeeping inventories, the company also offers hives as imported beehives so own production. The company does not have separate facility but uses service of a private joiner in Samegrelo (uses the equipment of Impervet). Despite having high demand, the production is limited by 150 hives per month. The main constraints are absence of working and storage space. The company produces and sell Dadant type of beehive but is ready to fulfill a request of other types in terms a volume be satisfactory.
KI 7	Tamaz Glonti	July 2022	I.E. Tamaz Glonti - Honey producing company	Aketi village, Lanchkhuti, Guria. The factory has a small factory with capacity of producing 3-5 tonnes of honey/shift and store 20 tonnes of honey. In 2022, 16 tonnes of honey was produced, out of which 6 tonnes was sourced from 6 beekeepers. And 10 tonnes from its own apiary. The main sales market is HoReCa sector and about 6 bio shops and Elkana online shop. In addition, the company offers wax printing service (plans to start bio wax production), produces and sells beehives (to about 60 beekeepers/year) and Kandi (to about 500 beekeepers/year). He is also well-known as a beehive producer. His production is highly rated by beekeepers and believed to be very high quality. He produces at around 1,000 beehives annually, using its own upgrades of hives.

				The main clients are private companies and NGOs. The producer plans to switch production to higher quality (even luxury) segment. The main constraint is lack of working space and storage.
KI 8	Simon Tomashvili	October, 2022	Beehive producer	Akhalsopeli village, Kvareli, Kakheti: has continued family's tradition. Simon produces mainly produces Dadant type beehives with 12 and 10 frames. Maximum capacity of Simon is to produce 20 beehives/day. Before pandemic Simon was producing beehive in advance, while now he produces on demand. Demand was considerably decreased. Before pandemic he used to sell about 3000 Dadant type beehives/year, 100 nucleus type beehive/year and more than 20000 frames/year, while this year he sold about 300 Dadant type beehive/year, 10 nucleus type beehive/year and 200 frames/year. Main clients are about 40 beekeepers, 80% of them are from Kakheti. Before pandemic he served about 150 beekeepers/year. The production facility is equipped some basic equipment, part of them is old, part was purchased via the bank loan.
Vet Drugs				
KI 9	Rusudan Kupradze	July 2022	Producer of bio (not certified) vet drugs	Mtskheta: She has been making herbal vet drugs for bees for 7 years already. She collects medicinal plants such as nettle, mint and absinthe in the Saguramo Natural Reserve, pollen of leguminous plants in Racha and buys honey plants through the nursery in Kareli. Rusudan states the vet drugs produced are bio, however she has not undergone a certification. The main customers are beekeepers, florists and tourists. Up to 200 clients during the year. Near Mtskheta, she grows honey plants such as Paulownia and Dahlia and sells seedlings as well as the plant seeds to other beekeepers, florists and tourists. She hires 3 women and 1 man seasonally.
KI 10	Emzar Kurdadze	July 2022	Bio (not certified) vet drug importer	Kareli, Shida Kartli: Emzar imports beekeeping vet drugs from Russia and sells them through his vet pharmacy "Bio Farmer" in Tbilisi. He states that the vet drugs are bio, however, has not undergone a certification. Bio Vet Pharmacy has up to 20,000 customers which include beekeepers and other bio producer farmers, and up to 300 wholesale stores. In addition, Emzar with his partner I.E. Grigol Berikashvili owns a greenhouse in Kareli where seeds of various honey plants are produced and sold. The greenhouse has up to 500 beekeeping customers.
Bio Certification				
KI 11	Davit Bedoshvili	July 2020	Caucascert Ltd - bio certification company	Tbilisi, Georgia: the company was founded in Georgia in 2005 with the facilitation of Elkana. It is the first local organic certification company in the country. CAUCASCERT Ltd has been accredited according to ISO-17065 by the German accreditation body DAkkS. It has been included in the list of third-country equivalent organic certification agencies. The certificate issued by the Caucascert Ltd is valid in almost every country, except US

				and Japan. The company is in the process of US NOP accreditation. Main clients are wine producers, followed by beekeepers. One of the main constraints is lack of qualified inspectors. As there is high demand on bio production, Caucascert is not able to dedicate time to training or experience sharing. According to the bio standard rotation of the inspectors are required, which hampers Caucascert to hire local inspectors in different regions.
KI 12	Gocha Tsereteli	July 2020	Eurocert LLC - bio certification company	Tbilisi, Georgia: the company was established in 2017. In addition to bio certification, it provides HACCP and ISO implementation service to stakeholders. The company is in the process of undergoing DAKKS (German organization) accreditation process, which is expected to be finished this year. The accredited spheres will be as livestock production, beekeeping, as well as lamb production, collection and procession of wild flora. The certificate issued will be valid in almost every country, except USA (which requires NOP standard, the company does not have accreditation) and Japan (which has its own bio standard). At present, the main customers are wineries. The price of the bio certification service varies according to the sector and location of the client. The company plans to diversify its services and provide bio training to stakeholders.
KI 13	Ia Ebralidze	July 2020	The association of Biological Farms " Elkana	Tbilisi, Georgia: Elkana was founded in 2014, with the goal to support bio production. In 2005, with the facilitation of Elkana, the bio certifying company Caucascert was established. Elkana's field of activities include consultations and trainings in the field of bio-agri production, conservation of agri-biodiversity, promotion of business activities of organic farmers, increase awareness on organic production, protection of farmers' right. Elkana unites more than 2000 farmers, the majority of them are nuts producers. Membership fees varies from 50 to 100 Gel. It supports individual and group certification, develops different guidelines, conducts trainings on bio production. In terms of bio certification, the biggest sector, Elkana works with is the nuts. From 2022 Elkana support the JBA in group certification process. Since its establishment Elkana has cooperated with international donor organizations. It has implemented more than 90 projects in agriculture, rural development, rural tourism and conservation of agri biodiversity.
Core Market				
Queen Bee Breeding				
KI 14	Gia Ioseliani	July 2022	Queen Bee Breeder / Beekeeper/Honey exporter	Bashi village, Samtredia, Imereti. Has been producing queen bees for 20 years already. Annual production is 4,000-6,000 queen bees and annual income from it is about 25,000-35,000 USD. He employees 5 men for full time job and 5 men for part time job. Main clients are: 75% intermediaries having shops in Turkey, 10% Georgian beekeepers and 5% Turkish beekeepers. In 2021 the

				producer bred 4,000 queen bees that is 40% less than in previous years. The main reason is devaluation of Turkish Lira and decrease of profitability.
KI 15	Roland Zirakashvili	July 2022	Queen Bee Breeder / Beekeeper	Lanchkhuti, Guria. Produces 500-700 queen bees annually mainly for its own apiary. Plans to fully switch from honey production to queen bee breeding and improve breeding quality. The main customers/markets are intended to be Turkey and Azerbaijan. The beekeeper developed a special hive concept Caucasian beehive which he believes will better suit for breeding.
KI 16	Zori Petrosian	July 2022	Queen Bee Breeder	Akhaltsikhe, Samtskhe-Javakheti. Has fully switched from honey production to queen bee breeding 3 years ago. For the last 3 years annual production has increased from 300 to 1,100 queen bees. Annual income is about 60,000 GEL. He employees 4 part time workers (2 men and 2 women). 80% of clients are Local beekeepers 10% organizations (monastery, private sectors) 5% Intermediaries, 5% Armenian and Turkish beekeepers. He actively provides trainings and consultations regarding queen bee breeding. 80% of customers are beekeepers of Georgia.
KI 17	Giorgi Katchkatchishvili	July 2022	Queen Bee Breeder / honey producer	Tskaltubo, Imereti. Has been producing queen bees since 2014. The production and sales of queen bees before pandemic reached 5,000 per year. However, 2020 the market began to shrink due to decreased demand from Turkey. Currently, the production of queen bee dropped to 1,000 per season. 80% of the clients are local beekeepers and 20% intermediaries, exporting queen bees to Turkey, Russia, Azerbaijan. It is a family business and has no employees. Plans to switch on honey production as it has better market opportunities now.
KI 18	Vano Susareishvili	July 2022	Queen Bee Breeder / honey producer	Didi Jikhaishi, Imereti. Has been producing queen bees for 11 years. Produces 3500 queen bees /year. 90% of the clients are intermediaries from Turkey and 10% local beekeepers. Demand from Turkish market has been decreased, therefore plans to switch on honey production as it has better market opportunities now.
KI 19	Joni Katamadze	July 2022	Queen Bee Breeder / Honey producer	Godogoni village, Tskaltubo, Imereti. Has been producing queen bees since 2014. He used to produce 2,000 queen bees annually, but now the amount decreased to 1,000. 80% of the clients are local beekeepers, 20% intermediaries exporting queen bees. Before 2021 the share was vice versa. Due to the devaluation of the Turkish Lira the profitability decreased. Plans to switch on honey production as it has better market opportunities now.
KI 20	Giorgi Lakvekheliani	July 2022	Queen Bee Breeder / Honey producer	Patara Jikhaishi, Imereti. Has been producing queen bees for 22 years. He used to produce 1500 queen bees/year but the amount dropped to 300-500. 20% of the clients are local beekeepers, 80% intermediaries exporting queen bees. Due to the devaluation of the Turkish Lira the profitability decreased. Plans to switch on honey

				production, to build a new factory for honey production with the aim to export honey in EU.
KI 21	Neroni Konjaria	July 2022	Queen Bee Breeder / Honey producer	Tsalenjikha, Samegrelo-Zemo Svaneti. Started queen bee production 5 years ago. He used to produce about 500 queen bees annually, but this year he took a pause in the business as he has been busy (building a house). 40% of the clients were local beekeepers and 60% intermediaries exporting queen bees. He plans to renew and enlarge production.
KI 22	Vakhtang Kakhniashvili	July/ October 2022	Research enthusiast / amateur beekeeper	Beekeeping is a hobby for Vakhtang. However, he has already managed to do a job that was not practice for decades. Vakhtang has collected more than 3,500 bee samples from apiaries all over the Georgia for morphological research (geometric morphometry) of the Georgian bee. The enthusiast created linkage with entomologist researchers in Ukraine and Poland. He collects samples, process them by screening and measuring them. The measurements are loaded in special software (provided by Ukrainian and Polish researchers). He actively collaborates with the head of the GBU. The main goals are to find pure breeds that can be used as donors for further preservation and improvement of the breed. He is active supporter of the conservation of Georgian bee.
Honey				
KI 23	Lekso Nasuashvili,	July 2022	Tapti Saklshi - Honey Producing company	Japana village, Guria. Produces about 92T of honey/year (all types), out of which 12tonnes are sourced from its own apiaries and 80 tonnes sourced from 50 beekeepers in Western Georgia and Kakheti regions. The company has three shops: 2 in Tbilisi and 1 in Batumi and has delivery service in 4 cities (30% of total sales). It employees 32 employees (75% women). The company supplies branded honey "Tapli Sakhlshi" to supermarket chains (1,200 shops in total, 50% of total sales) in Georgia. It supplies Gov entities in cooperation with Api Geo Ltd via State Tenders (20% of total sales). It plans to build a factory, increase honey production to 150T/year and scale to 200 supplier beekeepers in 2023.
KI 24	Tako Kvaratskhelia	July 2022	Rukhi Queen - Honey exporter	Rukhi village, Samegrelo: Aggregated 8 tonnes of honey (Chestnut, Acacia, Linden, Goldenrod) in 2021 and sold mainly in export markets (70% of total sales, Qatar, Saudi Arabia, UAE). In 2022, she plans to aggregate 20 tonnes of honey and add new export markets (ongoing negotiation with Korea, Kuwait). 10% of sales is via the shop in Tbilisi and 20% online sales (Facebook). The company has started to source other bee products: royal jelly, propolis, bee pollen and honeycomb and sells in the shop. The company partners with Piel Naturals (Georgian self-care products company), which produced face soap, face scrub and lip balm using Rukhi Queen Acacia honey. It has 6 employees and family members are also involved,

				especially in honey labeling and packaging. Tako plans to build a factory and start Api tourism.
KI 25	Giorgi Iashvili	July 2022	Geo Natural Ltd - Honey exporter	Ambrolauri, Ratcha: The company produces 90 tonnes of honey/year. 90% is sourced from up to 50 beekeepers (4 women) and the rest comes from own + Ratcha Natural Products Cooperative apiaries. 93% of sourced honey is sold to Gov in Georgia (via tender) and 7% is export (Qatar, UAE). Currently, the company negotiates in Italy (Acacia honey in bulk) and Germany (online sales of TAPLI brand honey). The company has 7 employees (4 seasonal). The factory has a recognition from the NFA.
KI 26	Lasha Gagoshidze	July 2022	Ratcha Natural Products Cooperative – Honey producer	Ambrolauri, Ratcha: The cooperative was founded in 2014 and currently, unites 11 beekeepers owning up to 450 bee colonies in Ratcha. The cooperative built honey processing factory with the co-finance of PIN programme (ENPARD I) in 2014. In addition, the cooperative took cheap agro loan twice to build fully compliant factory (365m2), which holds NFA recognition. The factory owns two homogenizers, each with 3 tonnes of capacity. They plan to purchase additional homogenizer (7 tonnes) to increase production capacity. The factory is in charge of production of high quality and safe honey and as for sales, works in partnership with Geo Natural Ltd, who is responsible for it. The cooperative honey is sold by Geo Natural Ltd under the brand of TAPLI. In 2019-20222, the factory prepared export consignments for Geo Natural Ltd, Agro Factory Ltd and Gebulit Commerce Ltd. The factory manager, who is also lecturer at VET college in Ratcha, knows about Jara honey and currently works with GRETA to BIO certify cooperative apiary in Ratcha mountains. They are also interested in Jara hives.
KI 27	Giorgi Gomelauri	July 2022	Royal Honey - Honey producing company	Akhmeta, Kakheti: The company processes 25 tonnes of honey/year (own + sourced from up to 25 beekeepers) from Kakheti and Western Georgia. The processing factory was built in 2022, does not have NFA recognition yet. The processing unit has the capacity to process 1T of honey/day. Company sells branded honey in supermarket chains (80% of sales), hotels and tourist shops. The company has 15 employees (67% women).
KI 28	Gia Ioseliani	July 2022	Api Geo LLC - Honey exporter	Bashi village, Imereti: The company is the largest honey exporter in Georgia. It exported 85T of Acacia and Blossom honey (own + sourced from 35 beekeepers) in France in 2021 and 56 tonnes in 2022. The factory has the capacity to process 100T of honey monthly. In addition, it offers honey processing services: wax pressing, homogenization and storage to other honey producer companies, exporters and beekeepers. In 2021-2022, the company provided the homogenization service for 39 tonnes of honey which was aggregated from up to 35 beekeepers. The company has 7 employees. The company has potential to commercialize honey homogenization and

				lab testing services, to attract new export markets especially for chestnut honey
KI 29	Giorgi Katchkachishvili	July 2022	I/E Giorgi Katchkachishvili - Honey producing company	Tskaltubo, Imereti. It is a family business which has been producing and selling honey (on average 15T, 550 beehives + 20 beehives under bio certification) and queen bees to Turkey for years. The factory is arranged at the first floor of the house, HACCP is implemented, and factory has NFA recognition. The processing unit can process up to 6 tonnes of honey per day. In 2022, they processed up to 70T of honey (15T own honey, 3 batches in total) for export company (Gebulit Ltd, exporting to Bulgaria). The company provides processing service, wax printing service (4T/year) and has a small beekeeping input shop for beekeepers. The company has not exported honey by themselves yet but they have a negotiation in Germany and 3 samples were already sent. They sell own honey in their small beekeeping shop. Mainly family members are involved in all processes, they hire 2 employees seasonally.
KI 30	Davit Sauridi	July 2022	Mekhi Meputkreebi - Honey producing cooperative	Agara village, Akhaltsikhe: The cooperative has 5 members and 170 bee colonies of Caucasian grey bees. The cooperative produces 3.5 tonnes of honey/year (acacia, flower and chestnut) sourced from its own apiary and 2,5-3 kg of royal jelly /year. Main customers are locals (up to 1000 people) and tourists. The cooperative owns a factory, equipped with all necessary equipment and has a recognition from the NFA. 4 people, 2 women and 2 men, are seasonally employed in the enterprise.
KI 31	Jaba Sheshaberidze	July 2022	Meskhuri Nobati LLC - Honey producing company	Akhaltsikhe, Samtskhe-Javakheti: the company was established in 2020 and produces 12 tonnes of honey which is sourced from cooperative Ska members, 6 kg of royal jelly, 500 queen bees, 200 kg of pollen and 600 kg of honeycomb per year. 30% of the products are sold in retail and 70% in wholesale markets (through Api Geo and Rukhi Queen). The main retail market for honey is the branches of the supermarket "Tserti". The company employs 5 people seasonally, 3 men and 2 women. The company has built a factory and in the process of its renovation. After the opening the factory will have a capacity collect 50 tons of honey from local beekeepers during the year. Jaba is a focal point in Samtskhe Javakheti for buying honey.
KI 32	Tamaz Glonti	July 2022	I.E. Tamaz Glonti - Honey producing company	Aketi village, Lanchkhuti, Guria. The factory has a small factory with capacity of producing 3-5 tonnes of honey/shift and store 20 tonnes of honey. In 2022, 16 tonnes of honey was produced, out of which 6 tonnes was sourced from 6 beekeepers. And 10 tonnes from its own apiary. The main sales market is HoReCa sector and about 6 bio shops and Elkana online shop. In addition, the company offers wax printing service (plans to start bio wax production), produces and sells beehives (to about 60 beekeepers/year) and Kandi (to about 500 beekeepers/year).

KI 33	Aslan Shakaradze	July 2022	Jara Beekeepers Association (JBA) - Jara honey aggregator and exporter	Keda, Ajara: The association was established in 2018 and is the only organization in Georgia uniting Jara beekeepers and preserving and promoting old traditional type of beekeeping, and the main focal point between Jara beekeepers and honey aggregators. In addition, the JBA guides and monitors the process of Jara honey Bio certification and provides essential services to Jara beekeepers e.g., pest control through oxalic acid spraying. In 2021, the JBA aggregated 4.5 tonnes of Jara honey, out of which 2.4 tonnes (53%) was bio certified. The JBA is the supplier of Jara honey to Nena factory. In 2022, 130 Jara beekeepers received the JBA's service. In 2021, the JBA concluded the agreement with the Japanese importer MF company and since then exported 2 tonnes of Jara honey to Japan.
KI 34	Lizi Miladze	July 2022	Kakhetian Traditional Winemaking (KTW) Agro-Keda Ltd - Honey exporter	Keda, Ajara: It is one of the companies operating under the umbrella of KTW group which is the largest wine and spirits exporter company in Georgia. The factory diversified production line and started aggregation and sales of 6 types of honey (acacia, alpine, blossom, chestnut, linden and Jara) under the brand name Nena in 2017. The factory has a homogenizer with a capacity of blending 7T of honey and bottling/packaging equipment which are perfectly suitable for export of packaged honey. Honey is aggregated from about 70 beekeepers from 9 regions of Georgia. Since 2019, 8T of honey (42% of aggregated honey) has been exported by the company to Japan, UAE, Canada, USA, Hong Kong, Azerbaijan and Qatar. At the local market KTW's honey is sold in Carrefour, Goodwill, Agro Hub and Europroduct supermarket chains; own brand shops in Batumi, Mtskheta and Patardzeuli and small shops across Georgia - in total 168 selling points throughout Georgia. In 2021, KTW became the first company selling locally and exporting Bio certified Jara honey.
KI 35	Giorgi Tsikhelashvili	July 2022	Gebul Commerce Ltd – Honey Exporter	Kutaisi, Imereti: The company started bulk honey export to Bulgaria (the EU) in December, 2020. The company does not own a factory and outsources honey processing and order preparation service from honey processors. The first two batches were exported through the ALCP client Matchakhela Ltd. In 2021, the company used homogenization services of Api Geo Ltd (the ALCP client) and Ratcha Natural Products Cooperative. At present, company partners with I/E Giorgi Katchkachishvili (KI 27). Export batches are prepared in NFA recognized FS&H compliant honey processing unit in Tskaltubo, Imereti. In 2020-2022, Gebulit Commerce Ltd exported 169,3 Tonnes of Acacia and Blossom honey. Demand for chestnut honey is appearing. The company sources from more than 50 beekeepers. It plans to build honey processing factory in Imereti to increase export volumes and scale.
KI 36	Shota Kalandarishvili	July 2022	Taplikatsi Ltd – Honey Exporter	Alaverdi, Kakheti: honey producing/export company established in 2008. Until 2015, the main emphasis of the company was production and sale of six different types of honey and other bee products such as royal jelly, bee

				pollen, propolis and beeswax and beekeeping inventory in Georgia. The company also offers services to beekeepers such as printing of beeswax foundation, honey extraction and apiary spraying against Varroa. The company produces and sells up to 6 tons of honey annually in cooperation with local beekeepers. Taplikatsi honey is presented in Duty Free store chains, Supermarket AgroHub, Taplikatsi online store and Alaverdi factory. Since 2019, the company has exported small batches to the USA, Japan and United Arab Emirates. It partners with the US company Mira Nova, selling Taplikatsi collection hone via amazon.com. In 2021, the company started partnership with export company Lucky Trading Group, which has included Taplikatsi honey in their products catalogue online and successfully exported 707kg of our honey into the USA in 2021 and sent honey samples (10 jars of 4 types of honey) to Korea. Taplikatsi Ltd was co-financed by ALCP to equip factory according to FS&H standard and to increase production capacity. The company received order from Canada and is process of preparation. In summer, 2022 the company started to offer honey tours to visitors and has good potential to link the honey production with tourism.
K37	Paata Bobokhia	September, 2021	I.E. Paata Bobokhia – Honey Producing Company	Tsalenjikha, Samegrelo: I/E Paata Bobokhia started honey processing in 2018. It owns small factory (36m^2) that received NFA recognition in 2021. The company processes up to 10 tonnes of honey (blossom, acacia, chestnut, linden) collected from its own apiary. The company sells honey at local market to honey exporters: Gebul Commerce Ltd and Rukhi Queen LLC, which also outsource export batch processing service from him. The company is in process of converting its apiary to Bio with the support of IFC.
K38	William Prat	October, 2022	MF Company – Honey Exporter	Tbilisi: The company in partnership with the Jara Beekeepers Association started bio Jara honey export to Japan in 2020. Since then, one tonne of bio Jara honey is exported annually. The importer, MYM International works hard to increase awareness of Jara honey in Japan, one of the high value markets for honey. MF Company aims to build Jara honey brand for Georgian market.
Rules				
K39	Ilia Tamarashvili	September 2022	Rural Development Agency	Tbilisi: Rural development Agency is the key agency in Georgia responsible for providing information and consultation service to rural producers, including beekeepers. The agency in cooperation with the GBU and its board members, provided trainings for beekeepers throughout Georgia with the goal to reach up to 3,000 beekeepers. The agency offers different financing opportunities for honey cooperatives and honey producing/export companies. The agency finances exhibition of Georgian products in target countries. It financed participation of the GBU and its member companies in Apimondia 2022 in Istanbul, Turkey.

K40	Giorgi Tsagareishvili	July 2022	Bio Production Promotion Programme	Tbilisi: the programme was confirmed by the government on 12th of July, 2022 and is implemented by the Rural Development Agency (RDA). Among different sector the programme covers beekeeping as well. The total budget of the programme is 300,000 Gel and foresees co-finance of the following costs: a) bio certification costs; b) consultancy service costs; c) purchase of organic fertilizers and pesticides; d) purchase of bio vet drugs and organic beeswax; d) honey and beeswax laboratory analysis costs. Any beekeeper willing to start bio production or being on conversion period can apply to the programme. They should be registered in the farmer's register of the RDA. The RDA will co-finance no more than 70% (not more than 7000 Gel) of the costs of bio certification, consultancy service and/or laboratory analysis of honey and wax. If the applicant is the beneficiary of the donor organization the co finance will be not more than 40% (4000 Gel). Regarding the purchase of bio fertilizers, pesticides and vet drugs: in the case of beekeeping the RDA will co-finance max. 50 Gel/hive and not more than 5100 Gel/applicant. If the applicant is the beneficiary of donor organization the RDA will co-finance 25Gel/hive and not more than 2900Gel/applicant.
K41	Mirza Sarukhanishvili	October 2022	Agro Service Center of the Ministry of Agriculture of Ajara	Batumi, Ajara: Agro Service Center of the Ministry of Agriculture of Ajara has been one of the key supporters of the Jara Beekeepers Association since 2020. It supported the JBA in renting of space for its processing unit, which was equipped with the support of the ALCP. Agro Service Center has been co-financing the bio certification of the JBA processing unit and JBA member Jara beekeepers since 2021 and is motivated to continue the support.
K42	Lasha Tchanturia	October 2022	Project Manager, Organic Agriculture, GRETA	Ratcha: The programme has two directions, sustainable mountain tourism and organic agriculture, it started 2019 and ends in November 2023. The organic agriculture comprises supporting entities especially wine, tea and honey producers in obtaining bio certification or agroecological mark created by ELKANA. Export oriented companies are encouraged to apply for bio certification, while the honey producers focused on domestic sales, can apply for agroecological mark. Co-finance in the case of bio certification is max. 90%, from 5000 to 50000 euros and involves co-investment in the purchase of vehicle, beehives and other equipment, bio certification and agroecological training and consultancy service of ELKANA. In the case of agroecological mark, the beneficiary covers the total cost, which is 80 GEL. Up to date, 8 honey producers obtained agroecological mark. 3 honey producers are going to apply for bio certification.
K43	Aleko Papava	October 2022	Georgian Beekeepers Union (GBU)	Tbilisi: an umbrella association advocating for and representing beekeeper's interests and the health and development of the honey sector in Georgia. Formed in 2018 with the support of the ALCP, the Union currently unites 29 members: 9 beekeeping associations and 20 commercial beekeeping companies. Over 5,500 beekeepers (548 women beekeepers) throughout Georgia receive services under the umbrella of the Union. The GBU has taken on the role of creating an international

				image of Georgian honey. The honey sector has seen huge gains, under the auspices of the GBU, which is leading efforts to remove pervasive constraints to growth such as the widespread use of prohibited antibiotics and performing the role of non-governmental national representative of the honey sector. The GBU continues its advocacy initiatives as it is the focal point between the MEPA and beekeepers.

Annex 2 Overview of Bio Certification Companies

Table 8 List of EU accredited companies allowed to implement bio certification in Georgia

There are 13 EU accredited companies, which can bio certify Georgian companies. Out of them, only 1 company is located in Georgia (Caucascert Ltd), others do not have representatives. The sphere of accreditation includes: **A:** Unprocessed plant products **B:** Live animals or unprocessed animal products **C:** Unprocessed aquaculture products and algae **D:** Processed agricultural products for use as food **E:** Processed agricultural products for use as feed **F:** Vegetative propagating material and seeds for cultivation.

#	Company name	Country	Inspectors	Sphere of Accreditation					
				A	B	C	D	E	F
1	Caucascert	Georgia	Based in Tbilisi.	+	+	-	+	-	+
2	Organic Standard	Ukraine	Do not have a local representative. Can send inspectors from Ukraine.	+	+	+	+	+	+
3	ORSER	Turkey	Do not have a local representative. Can send inspectors from Ankara, Turkey. Looks for hiring a local representative.	+	+	-	+	+	-
4	Kiwa BCS Öko-Garantie GmbH	Germany	Do not have a local representative. Sends inspectors from Moldova or Russia	+	+	-	+	+	-
5	Agreco R.F. Göderz GmbH	Germany	Do not have a local representative.	+	+	-	+	-	-
6	Ecocert SA	France	Do not have a local representative. Can send inspectors from Serbia.	+	-	-	+	+	-
7	Control Union Certifications	Netherlands	Do not have a local representative. Can send inspectors from Turkey or Ukraine.	+	+	+	+	+	+
8	Bio.inspecta AG	Switzerland	Do not have a local representative. Can send inspectors from Turkey.	+	+	-	+	+	+
9	CCPB Srl	Italy	Do not have a local representative. Can send inspectors from Turkey.	+	+	-	+	+	+
10	Bioagricert Srl	Italy	Do not have a local representative. Can send inspectors from Romania, Serbia or Italy.	+	-	-	+	-	-
11	Agricert — Certificação de Produtos Alimentares LDA	Portugal	Do not have a local representative. Can send inspectors from Portugal.	+	-	-	+	-	-
12	A CERT European Organization for Certification S.A.	Greece	Do not have a local representative. Can send inspectors from Greece.	+	+	+	+	+	-
13	Biocert International Pvt Ltd	India	Do not have a local representative. Can send inspectors from India.	+	-	-	+	+	-

Out of the foreign companies mentioned in the table, only Kiwa BCS Öko-Garantie GmbH has an experience of bio certification in Georgia. Juice producer company 'GEORGIA'S NATURAL/AROMAPRODUCT' and 'Wine company Gotsa's Wine' is certified by Kiwa BCS.

In Georgia, Caucascert is the leader in bio certification, as it is a local company, and the prices are more competitive compared to the international company rates. The certification procedures are different for different sectors and price of the certification varies based on the type, size and location of agri farm. The certification requirements are based on REGULATION (EU) 2018/848 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 30 May 2018 on Organic Production and Labelling of Organic Products and repealing Council Regulation (EC) No 834/2007[83] and REGULATION (EU) 2020/464 of 26 March 2020[84] which is an addition to the regulation 2018/848.

[83] Find the link
[84] Find the link