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Baseline Assessment of the Beekeeping Sector in Georgia

Prepared by the Export Development Association (EDA)

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Tbilisi, 2023

Contents

Abbreviations

DCFTA – Deep and Comprehensive Free Trade Area

GDP – Gross Domestic Product

GEL – Georgian Lari

GEOSTAT - National Statistics Office of Georgia

GHI – Global Hunger Index

EU – European Union

FAO – Food and Agriculture Organization

HACCP – Hazard Analysis and Critical Control Point

LLC – Limited Liability Company

MEPA – Ministry of Environmental Protection and Agriculture

NFA – National Food Agency

SSR - Self-Sufficiency Ratios

SQIL - Safety and Quality Investment in Livestock

USD – United States Dollar

VAT – Value Added Tax

VET - Vocational Education and Training

1. Introduction

The objective of the study was conducting a baseline assessment of beekeeping sector in Georgia, with a specific attention to the regions where beekeeping is one of the main agricultural activities of households/farms (particularly Kakheti, Imereti, Guria, Racha-Lechkhumi and Kvemo Svaneti). The assessment also meant identification, prioritization, and feasibility assessment of specific needs for sector development. The report also includes an analysis of supporting services and regulations affecting the value chain operations.

2. Methodology

The assessment provides an analysis and evaluation of small and medium farmers which are involved in beekeeping. The analysis is based on a survey collected by field interviews. In order to conduct baseline assessment for the project, the team has used secondary and a primary data.

2.1 Description of Quantitative Research Methodology

The population of the study includes those living in target regions and involved in beekeeping. In total, 534 beekeepers from Kakheti, Imereti, Guria, Racha-Lechkhumi and Kvemo Svaneti were selected and interviewed.

For data collection, a field survey was conducted based on a pre-compiled questionnaire. And survey responses were analyzed by the research team.

Field interviewers were given specific instructions for open questions and questions that could have more than one answer (e.g. checkbox type questions). For example, for some questions it was recommended to give some ideas and list the several options to the respondent before he/she answered that particular question, and for other open questions the recommendation was to not give the ideas in advance, so that the respondent would state his/her responses individually without any indication and guidance from the interviewer. This indication was included after each question of the survey in order to make sure that the operators remembered the instructions for when to list the options to the respondent and when not. At the same time, when interviewers started survey, they maintained regular communication with the project team to clarify some cases to make sure that they were obtaining correct information. Moreover, since the survey was administered by Google Form, it was able to follow and monitor the progress.

2.2 Description of Qualitative Research Methodology

Qualitative research was conducted using in-depth interviews and desk research methods. In-depth interviews were conducted based on a pre-designed questionnaire. In-depth interviews, which provide an in-depth study of the research issue, were conducted by the research team. In order to analyze the beekeeping sector in Georgia, the team has used secondary and a primary data as well.

The team has conducted meetings and individual surveys with the following stakeholders:

- Georgian Beekeepers Union.
- Beekeeping research institute at Agrarian University of Georgia.
- Education Institutions including VET colleges.
- Laboratories, vet-pharmacies, organizations issuing documents necessary for honey export.
- Ministry of Environment Protection and Agriculture of Georgia.
- Ministry of Economy and Sustainable Development of Georgia.

The secondary data was collected from the following sources:

- National Statistics Office of Georgia (GEOSTAT).
- FAO statistics.
- Reports of similar studies available to other Research organizations.
- Other reports provide information on state regulations, including laws, standards, etc.

Based on the information obtained using quantitative and qualitative research methods, the situation in the target regions was analyzed and the main conclusions and recommendations were developed.

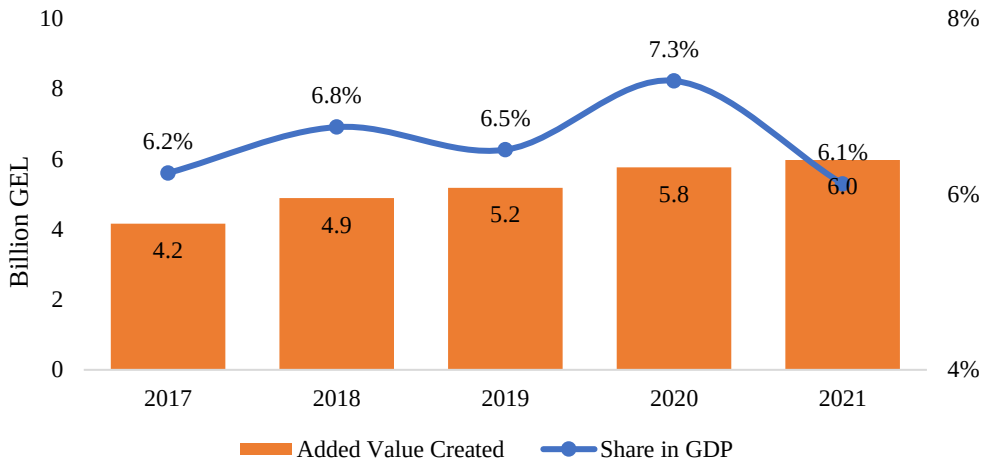
3. Overview of the beekeeping sector

Georgia is a small market economy of 3.7 million people with a per capita GDP of $5,023.2 and an unemployment rate of nearly 20.6% in 2022 (GEOSTAT, 2022). However, economic reforms and initiatives by the government, private sector, and the donor community since 2012 have started to reinforce Georgia's agriculture sector. For the majority of households in rural areas, agriculture is the main source of income, however, due to different constraints, they cannot achieve commercial success. Therefore, they are at risk of poverty. According to Transparency International's report on "Georgia's Agricultural Sector: Key Trends for 2012-2019", low productivity is the main reason for poverty for people employed in agriculture. Low productivity has been continuously affecting the competitiveness of Georgian agricultural products in the domestic and global markets. To compete in the global market, Georgian producers should concentrate on attaining various food safety and quality standards to comply with the requirements set forth in Association Agreement signed in 2014 between the EU and Georgia.

In Georgia, one of the main challenges to food security is high import dependency, low local production and the lack of physical or economic access to nutritious food, particularly for those living in mountainous regions. Although Global Food Security Index is not calculated for Georgia, the country depends on food-imports: Self-Sufficiency Ratios (SSR) are low for many necessary agro-food products. However, according to Global Hunger Index (GHI), in 2022 Georgia ranked 22nd among 121 countries and it is a big improvement compared to 2000 - in 2022 GHI is 5.7 and in 2000, it was 12.7. (Global Hunger Index, 2022). Gini Coefficient, which measures the degree of inequality in the distribution of income, decreased since 2011 and remains 0.34 on average. Share of population under absolute poverty line is declining year by year. Between 2011-2019, it declined by 14.6% and constituted 19.5% and in 2021, it was 17.5% (GEOSTAT, 2022).

Although agriculture employs almost 1/5 of the workforce, the added value they create is small and accounts for only a small fraction of the total GDP. During the last 5 years, the added value created in the agricultural sector and the corresponding share in the total GDP are presented in the figure (Figure 1).

Figure 1. Share of agriculture in total GDP



Source: (Geostat, 2021)

Output of agro-food products

In 2021, in Georgia, the output of agriculture, forestry and fishing amounted to 6.3 billion GEL, which is 9.9% higher than in 2020, and 75.1% higher than in 2012. In the indicator of the output of agriculture, forestry and fishing, the largest share comes from agriculture (according to the indicator of 2021 - 95.1%). In 2021, the output of products in the field of agriculture (primary production) amounted to 6.0 billion GEL, which is 531 million GEL (9.7%) higher than in 2020 and 2.9 billion GEL (92.0%) higher than the figures of 2012. From 2012 to 2021, the increase in the output of the agricultural sector was significantly driven by the high rate of output growth recorded in the direction of livestock, fruits, nuts, beverages, and the cultivation of crops needed for the production of spices (MEPA, 2021).

In 2021, the total output of agricultural products processing amounted to 7.3 billion GEL, which is 971 million GEL (15.4%) higher than in 2020, and 3.2 billion GEL (80.3%) more than in 2012. (MEPA, 2021).

3.1 Beekeeping

Beekeeping in Georgia - the history of this one of the oldest branches of agriculture in Georgia is closely related to the history of the nation. According to historical sources, domestic beekeeping was known to Georgians in early centuries and Georgians produced honey in large quantities.

Beekeeping has a long tradition and history in Georgia. Based on archaeological materials in Georgia, honey production dates back 7000 years. Georgia is home to the Caucasian gray bee, known for its 7.2mm long proboscis. Its features include gentleness, high honey productivity, good work ability and special ability to extract nectar.

The homeland of the world-famous Caucasian Mountain gray bee is Georgia. The complex climatic characteristics and flora biodiversity of Georgia have led to the evolution of the bee species and as a result have given them special characteristics, which ultimately made Georgian bee breeds unique from other bee species. This bee has the longest proboscis, which allows it to penetrate deeply into the tissues where other bees cannot penetrate. However, this is not the only characteristic of the world's most productive bee breed. Georgia has also an ideal condition for the production of polyfloral honey, in particular for acacia, lime, chestnut, alpine and "Jara" wild honey.

Acacia honey is one of the most popular and demanded honeys in the world, due to its light taste and delicate texture. Bees make it from the nectar obtained from the acacia tree. Acacia honey has anti-inflammatory and bactericidal effects, and is also used to prevent stomach and duodenal ulcers.

Chestnut honey is a honey for the consumers who prefers a bitter sweet taste and a strong aroma. Chestnut honey is monofloral. It promotes blood circulation, bile secretion; It is used to treat diseases of the digestive system, regulates blood pressure and prevents thrombophlebitis, varicose veins and prostatitis.

Alpine honey is a polyfloral honey, which is harvested in the meadows located in the alpine zones of Georgia. Alpine honey has a more complex and aromatic taste. Alpine honey has strong antibacterial, anti-inflammatory and analgesic properties.

Flower (nectar) honey is polyfloral honey, which is obtained from flowers of mixed and unknown species widespread in Georgia. Honey has many healing properties. Locals usually use it for flu, diarrhea, fluid retention and viral respiratory tract infections.

Lime honey is a monofloral honey made from the nectar of lime flowers. Caucasian lime (Tilia caucasica) is a widespread species in Georgia, which blooms in early summer. Lime honey contains an excellent combination of vitamins, micro and macro nutrients, minerals and acids, which gives it additional properties for the treatment of many diseases. Lime honey is recommended for flu, cough and high temperature.

Alcoholic honey - based on the Georgian name, it is the same as: "honey that drunks"; The honey is toxic, which is obtained from the nectar of endemic flowers (Rhododendrom ponticum and Rhododendrom luteum). Such a strange name was given by the locals because of its hallucinatory and laxative effect. It is used for medical purposes and for treating various diseases.

There are three regional populations of bee in Georgia:

1. Megrelian population, with distribution area in Chkhorotsku, Tsalenjikha and Martvili highlands. It is characterized by its gray color, long proboscis (7.15-7.25 mm), gentleness, high production rates, exceptional work ability, outstanding ability to pollinate red clover, less tendency to litter, which is so necessary for intensive beekeeping.

2. The Kartli population is distributed mainly in the mountainous area of Dusheti, with a shorter (6.7-6.8 mm) proboscis compared to the Megrelian, with high fertility (up to 2000 eggs per day), with better winter hardiness.

3. Gurian population, spreading in the highlands of Chokhatauri district, with 7.25 mm and sometimes longer proboscis and high productivity.

The main advantages of Georgian honey are excellent natural environment, climate and flora, favorable location in the Black Sea region. But the lack of modern technologies, low productivity and quality, as well as non-compliance with international standards, can be considered the main obstacles of Georgian honey. It should also be noted that the quality of production and packaging of Georgian products is low, which is necessary for direct sales in the confectionery and food industry.

As of 2021, there are 214.8 thousand Beehives. According to the GEOSTAT, 93.3 % of the beehives were owned by family holdings and the remaining 6.7% agricultural enterprises respectively.

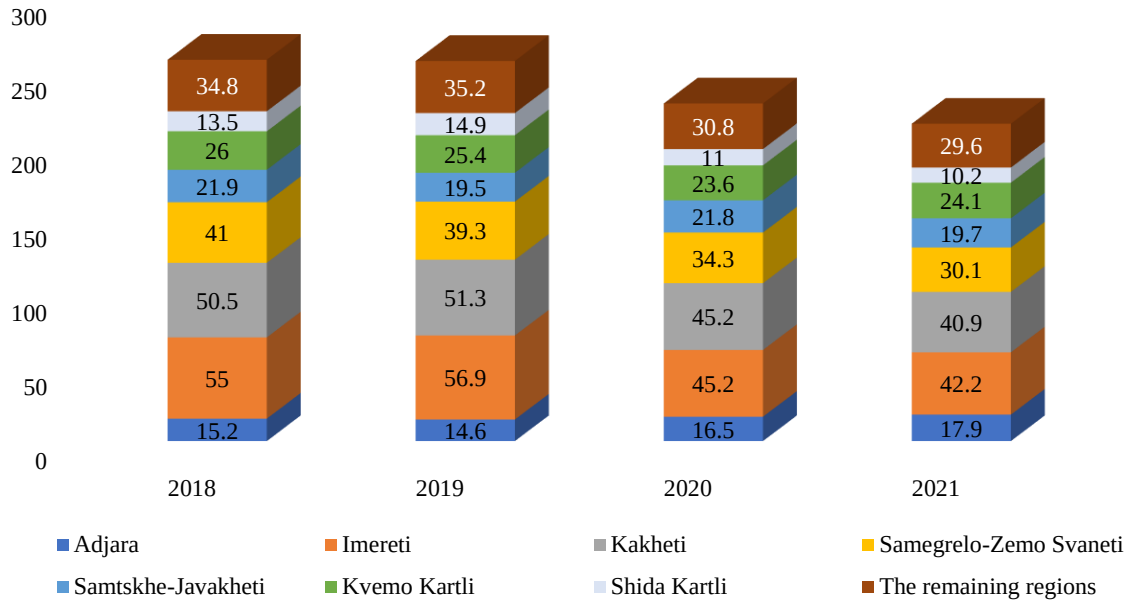
Table 1. Shares of family holdings and agricultural enterprises in beehives numbers (as of end of year, %)

	2018	2019	2020	2021
Share of family holdings	95.0	93.5	91.1	93.3
Share of agricultural enterprises	5.0	6.5	8.9	6.7

Source: GEOSTAT, 2021

The number of beehives in Georgia from 2018 to 2021 decreased by 16.6%. Figure below shows the number of beehives by region.

Figure 2. Number of beehives by regions (as of end of year, ths. Hives)



Source: GEOSTAT, 2021

Figure shows that majority of beehives are in Imereti, Kakheti and Samegrelo and Zemo Svaneti.

According to the Agricultural Census 2014, number of agricultural holdings with beehives in Georgia is 14,074, out of which 2,930 (21%) is from Imereti region, 1,984 (14%) and 1,916 (14%) from Kakheti and Samegrelo and Zemo Svaneti, respectively.

Table 2. Distribution of agricultural holdings by number of beehives (units)

Location	Holdings with beehives	Beehive					
		1-4	5-9	10-19	20-49	50-99	≥100
Georgia	14,074	6,200	2,918	2,531	1,775	489	161

Tbilisi City	73	30	12	16	14		1
Adjara AR	1,002	352	203	208	173	49	17
Guria	1,167	613	216	192	97	33	16
Imereti	2,930	1,347	668	475	311	90	39
Kakheti	1,984	640	401	435	373	103	32
Mtskheta-Mtianeti	706	306	158	126	91	20	5
Racha-Lechkhumi and Kvemo Svaneti	662	395	111	94	48	9	5
Samegrelo-Zemo Svaneti	1,916	953	344	311	224	61	23
Samtskhe-Javakheti	1,139	435	256	197	174	63	14
Kvemo Kartli	1,254	564	267	253	141	23	6
Shida Kartli	1,241	565	282	224	129	38	3

Source: GEOSTAT, Agricultural Census 2014

Most agricultural holdings (44%) hold 1-4 beehives, 21% - 5-9 beehives, 18% of agricultural holdings have 10-19 beehives, 13% - 20-49 beehives, 3% - 50–99 beehives and agricultural holdings with more than 100 beehives are only 1%.

3.2 Honey Production

There are several local types of honey in Georgia: Acacia honey, Chestnut honey, Meadow honey, etc. Georgia produces about 2 thousand tons of Honey annually. Production of honey decreased from 2018 to 2021 by 20%.

Table 3. Shares of family holdings and agricultural enterprises in honey production (as of end of year, %)

	2018	2019	2020	2021
Share of family holdings	94.1	93.9	88.3	95.0
Share of agricultural enterprises	5.9	6.1	11.7	5.0

Source: GEOSTAT, 2021

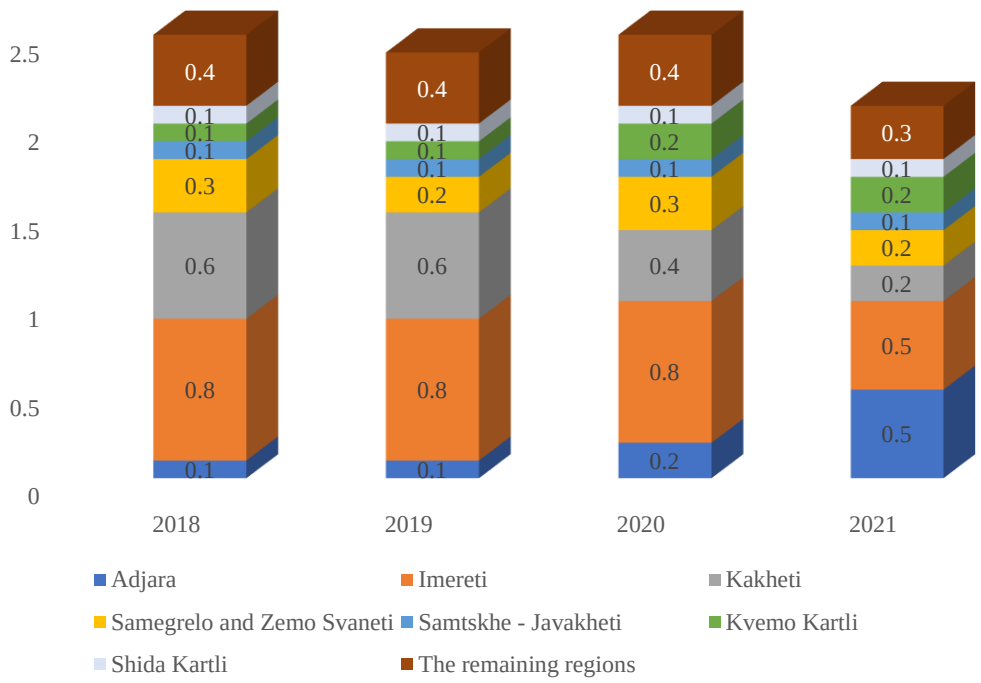
Table shows that share of family holdings in honey production increased from 2018 to 2021, however the lowest indicator was in 2020. Currently, mostly small and medium-sized beekeepers are engaged in honey production in Georgia. Production and marketing of honey is at a primitive level and is characterized by negative scale effects. The low level of productivity is due to improper feeding practices and inadequate pest management. Production costs are high, and the pricing strategy in the supply chain is uncompetitive. Therefore, the existing material and technical base of beekeeping requires updating, because outdated technologies cannot provide an increase in labor productivity, a decrease in the cost of production of products and negatively affects the quantity and quality of manufactured products.

In Georgia, they get an average of 20-21 kilograms of honey from each hive per year, which is quite modest, considering that in Germany farmers get 34 kg of honey from each hive, in Sweden - 31 kg is produced per year.

The number of bee families in Georgia amounted to 205,300 units by the end of 2020. According to regions, the most hives are in Kakheti, Imereti and Samegreli-Zemo Svaneti. And the smallest number of hives is recorded in Shida Kartli and Adjara, 10,200 and 14,100, respectively.

In 2021, most of the honey is produced in Imereti and Adjara. It should be noted that production of honey in Adjara increased from 2018 to 2021 by 400% and honey production in Imereti decreased by 38%.

Figure 3. Production of honey by regions (ths. Tons)



Source: GEOSTAT, 2021

Most of the honey produced comes from smallholders and is sold through informal channels. Even among the country's few commercial farmers, most lack the technical skills and knowledge needed to produce high-quality honey.

In 2021, honey production was 2,000 tons of which 172.92 tons were exported and the remaining 1,839 tons was consumed by households and enterprises and imports were 11.69 tons,

Table 4. Supply and Utilization of Honey, 2018 – 2021 years

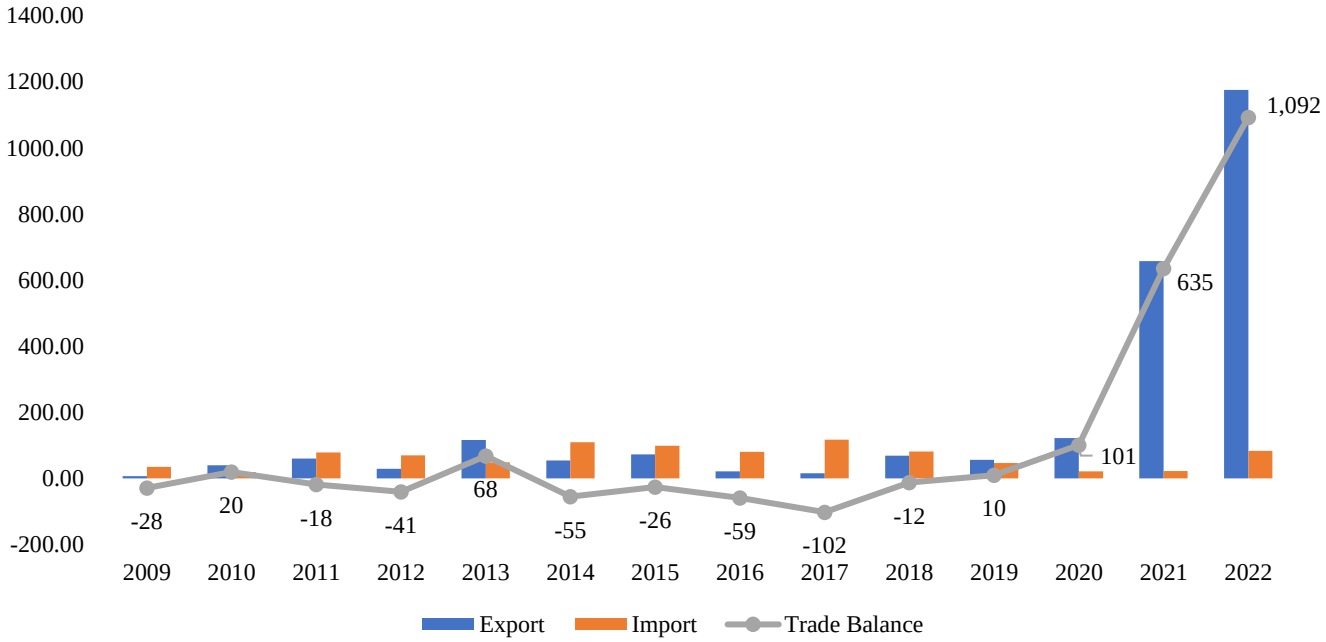
	2018	2019	2020	2021
Honey Production (tons)	2,500	2,500	2,400	2,000
Export of Honey (tons)	21.01	6.38	21.71	172.92
Import of Honey (tons)	21.83	8.07	1.59	11.69
Consumption of Honey (tons)	2500.82	2,501.69	2,379.88	1,838.77

Self-sufficiently ratio[1] (%)	99.97	99.93	100.85	108.77

Source: GEOSTAT, 2021

Table 4 shows the production and consumption of honey. It should be noted that according to our own calculation, self-sufficiency ratio increased from 2018 to 2021 and reached 108.7% in 2021.

Figure 4. Export and import of Honey (Mln. USD), 2009-2022

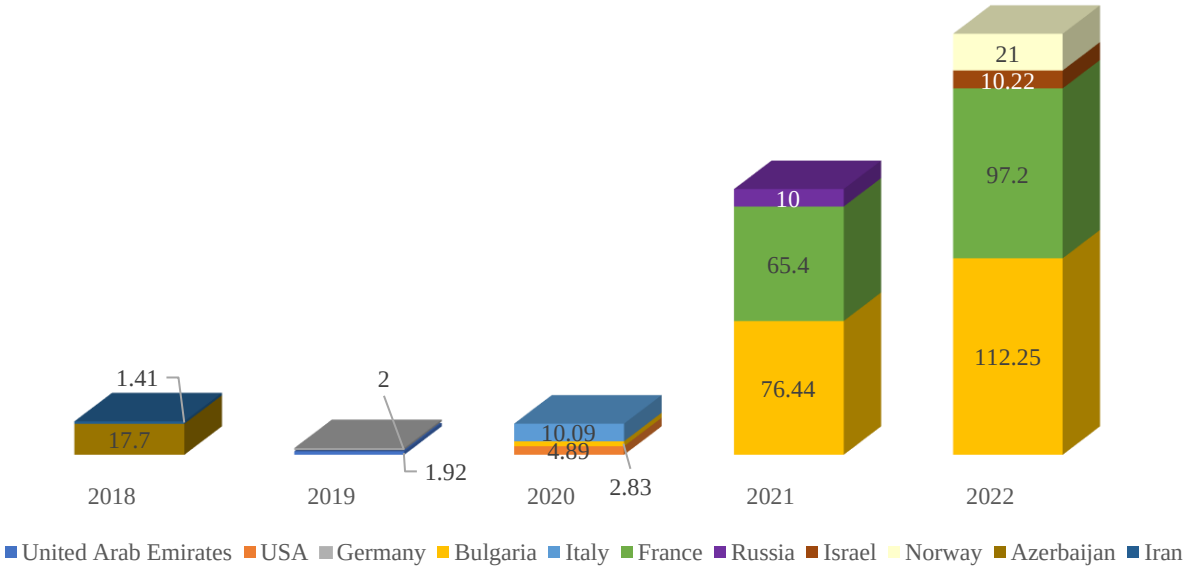


Source: GEOSTAT, 2022

The export of honey is increasing, and the largest export was recorded in 2022. Overall, Georgia is a net exporter of honey from 2019.

[1] Own calculation

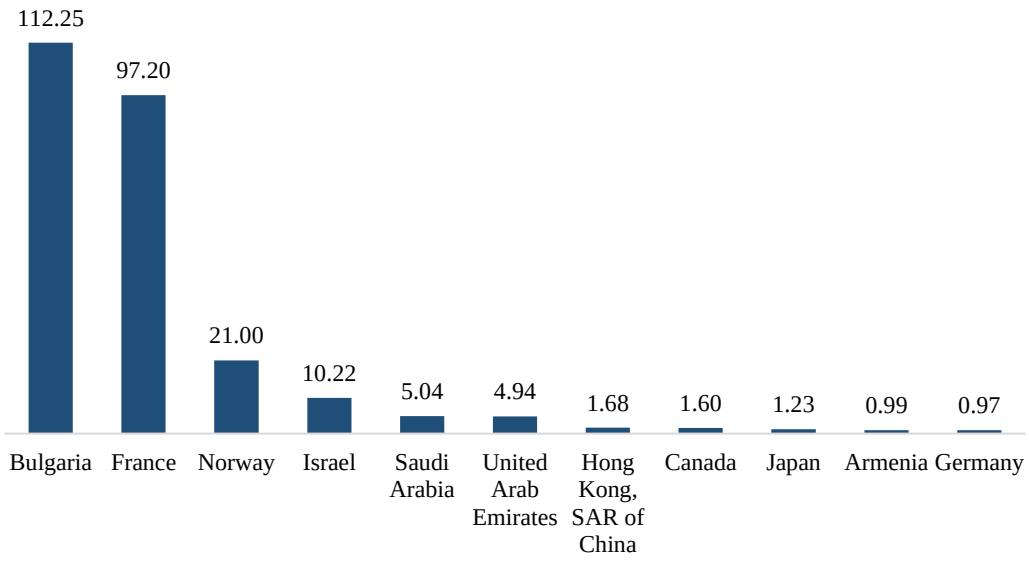
Figure 5. Main Export Countries for Honey (tons), 2018-2022



Source: GEOSTAT, 2022

In terms of quantity, as seen from Figure 5, main part of honey in 2022 is exported to Bulgaria, France, and Norway.

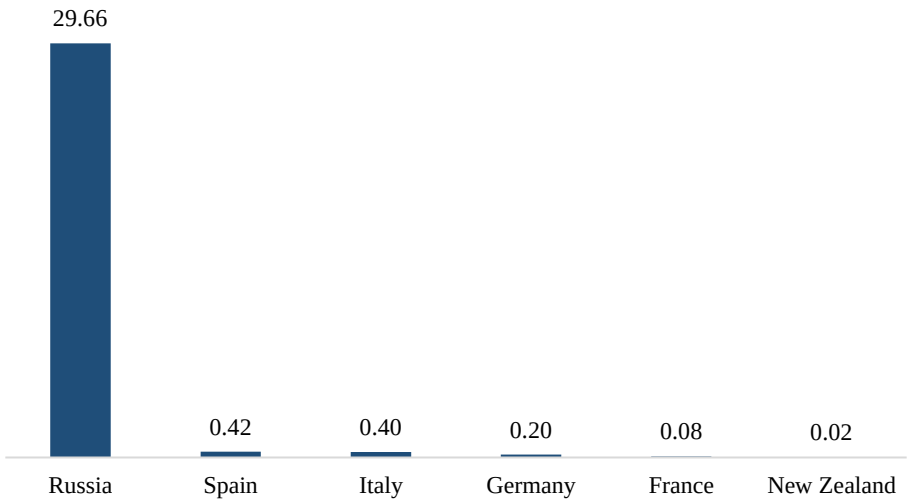
Figure 6. Export of Honey (tons) by countries, 2022



Source: GEOSTAT, 2022

On the other hand, the main part of honey in 2022 is imported from Russia.

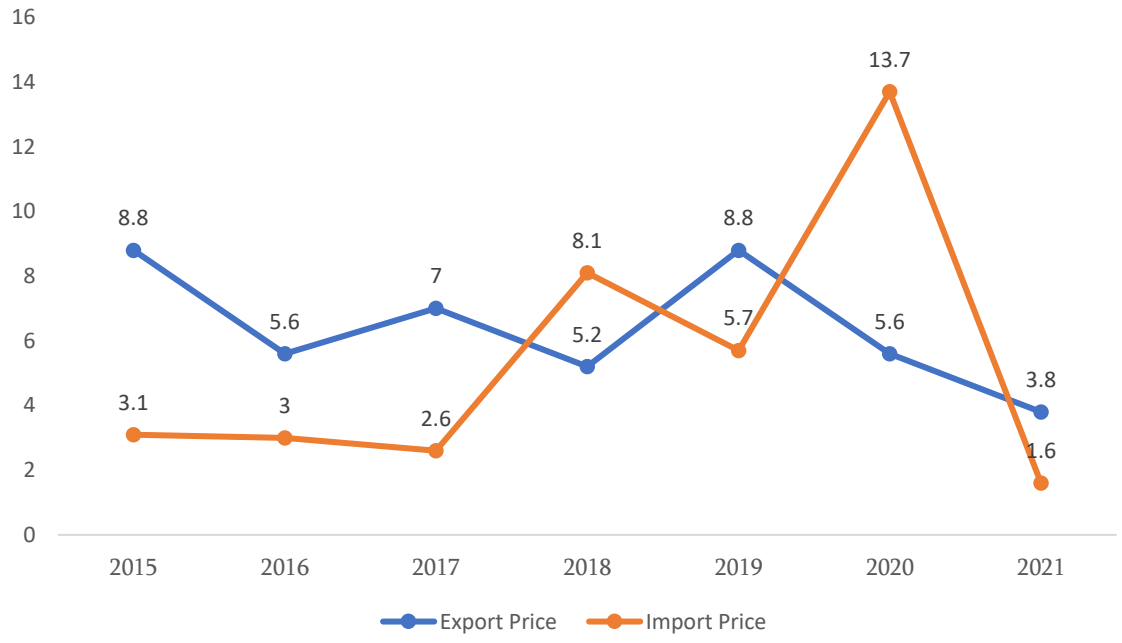
Figure 7. Import of Honey (tons) by countries, 2022



Source: GEOSTAT, 2021

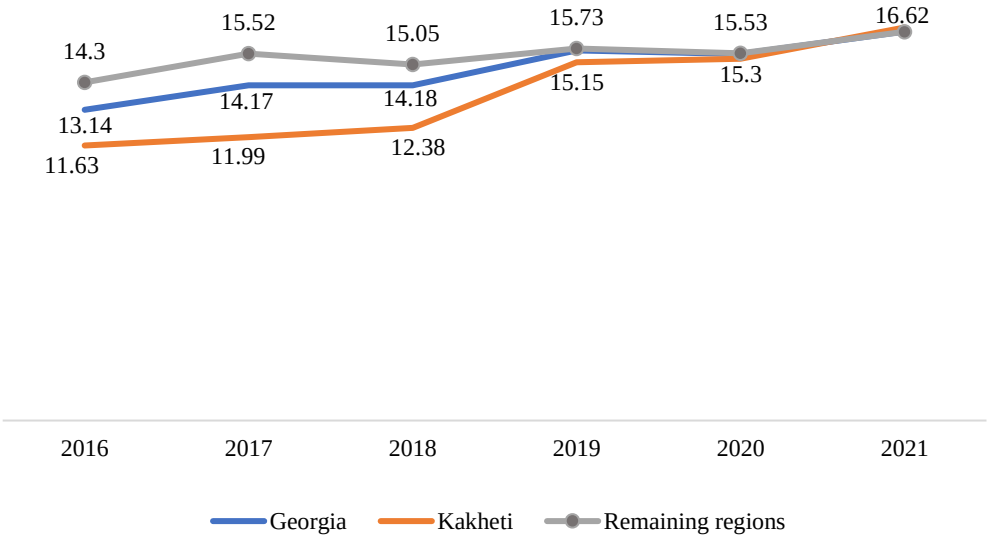
The price of exported and imported honey does not repeat the same trend and in most of the time are directed in the opposite direction: during 2016-2020 when the price of exported honey went up, the corresponding price for imported honey went down.

Figure 8. Price of Honey for Export and Import, 2015 - 2021 ($/kg)



Source: Ministry of Environmental Protection and Agriculture, 2021

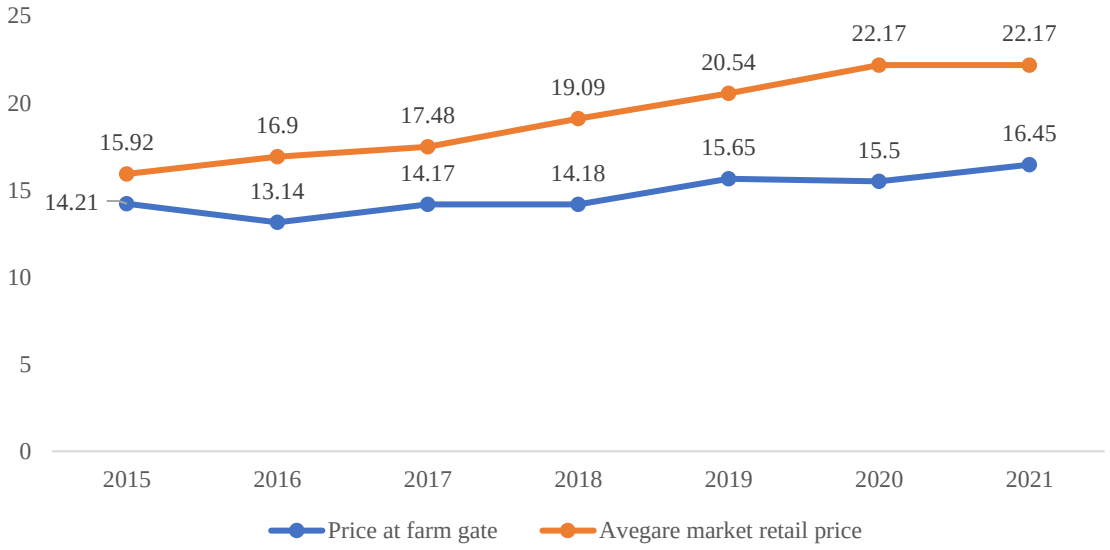
Figure 9. Price of Honey by regions, 2016 – 2021 (GEL/KG)



Source: GEOSTAT, 2021

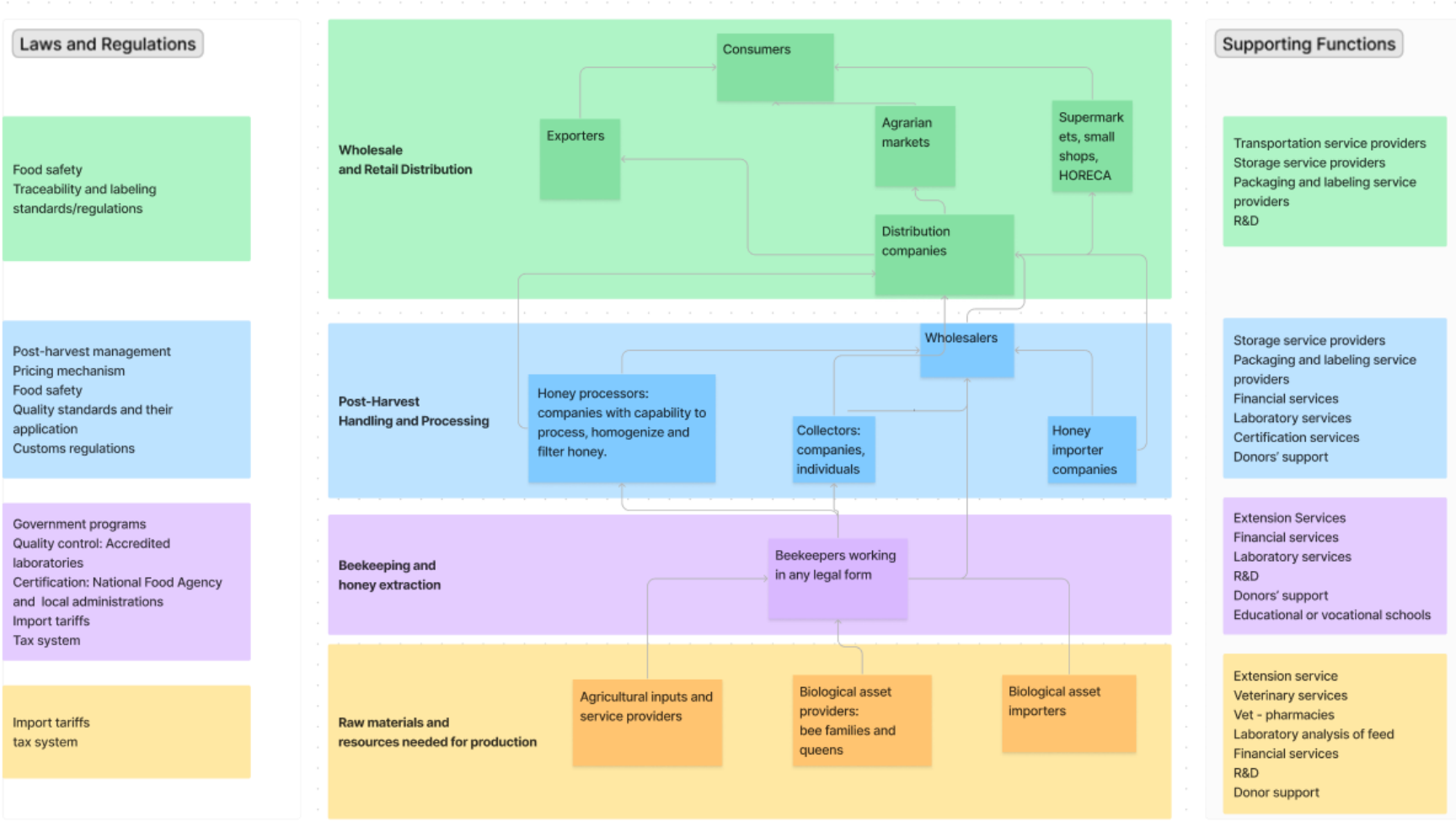
In terms of honey prices locally, price of 1 kg honey was lower in Kakheti or in Georgia than in remaining regions from 2016 to 2021 years, however from 2019 price started to equalize and it was the almost same in all regions in 2020 and 2021. In terms of honey prices at farm gate and average market retail prices, mostly they have been raising and reached 16.45 GEL and 22.17 GEL per kg in 2021, respectively.

Figure 10. Price of Honey in Georgia, 2015 – 2021 (GEL/kg)



Source: Ministry of Environmental Protection and Agriculture

4. The Value Chain Description



4.1 Pre-Production Processes

Agricultural input and service providers

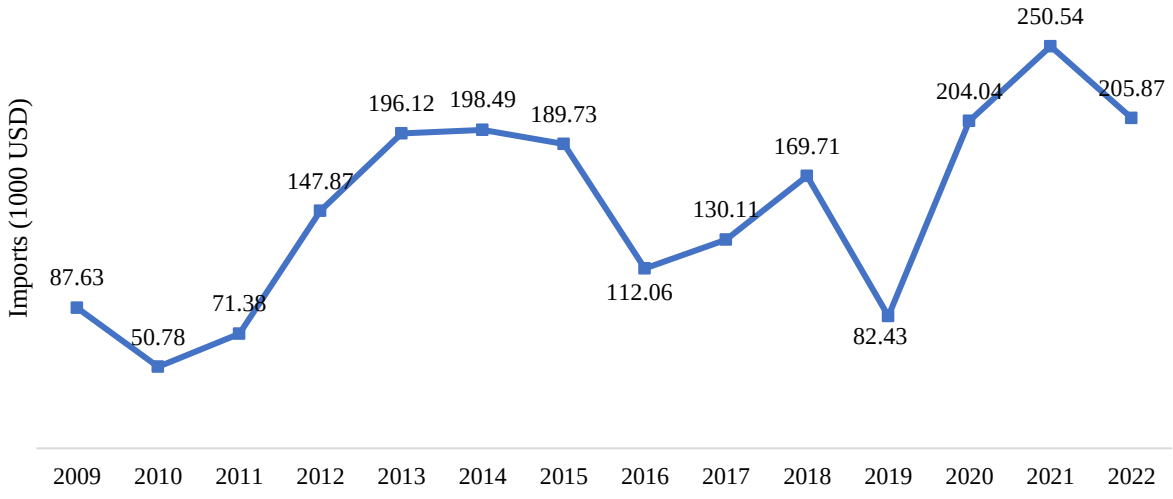
Input suppliers have their influence on the value chain. They have a direct impact on issues such as pest prevention, honey quality, etc. Input suppliers can be divided into different groups depending on their nature.

The first group is beekeepers supplying biological products such as bee breeds, bee colonies, queens and combs, and importers in this direction. The Mountain Grey Caucasian Honeybee (Apis mellifera caucasica-Georgia) is a unique honeybee breed found in Georgia. This breed has exceptional characteristics compared to other honeybee breeds, such as the longest tongue among honeybee species, which makes it one of the most productive honeybee breeds in the world. In addition, the Caucasian honeybee can work in less ideal conditions, produce propolis in greater quantities, overwinter better, and store honey efficiently. Finally, this breed has a non-aggressive character, which makes it one of the gentlest honeybees in the world.

The main input in the beekeeping sector is the honeybee itself, as well as the equipment and tools necessary for beekeeping. The honeybee is the primary producer of honey and other hive products, such as beeswax, propolis, and royal jelly. In addition to the honeybee, beekeepers also rely on equipment and tools such as hives, frames, protective clothing, smokers, hive tools, and honey extractors to manage their colonies and harvest honey. Other inputs include supplemental feeding and medications to ensure the health and productivity of the bees.

There are two types of inputs for which we can find import information according to their HS codes. These are live bees (bumblebees) and wax. Total import value of these products is shown on figure 12.

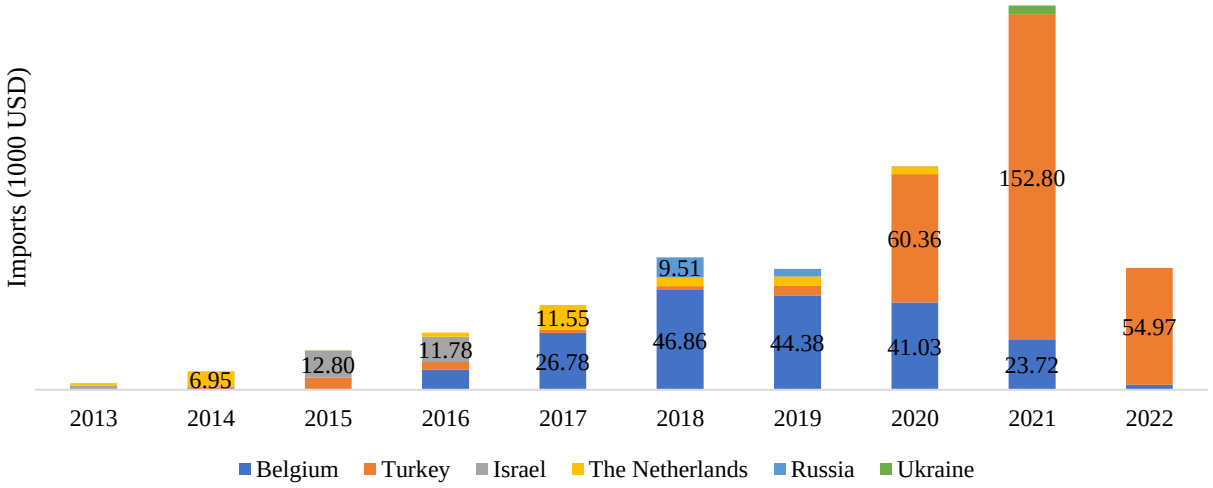
Figure 11. Live bees (bumblebees) and wax import



Source: National Statistics Office of Georgia

Bee importers – companies, mainly LTDs, and individuals who import bumblebees from abroad. In 2022, Georgia imported a vast majority of live bees from Turkey (with the value of 54,970 USD).

Figure 12. Distribution of imported live bees (bumblebees) by country, 2013-2022



Source: National Statistics Office of Georgia

The second group is inventory suppliers, such as local manufacturers of hives, frames, and importers of beekeeping supplies who import foundations, smokers, honey extractors, knives, and other tools.

The third group can be suppliers of all other materials required for bee feeding and care. These are mostly vet pharmacies and importer companies which mostly import veterinary medicines and similar products.

Inventory manufacturing firms

There are companies in the Georgian market that are importers of bee care products, primary and secondary production equipment and manufacturers of hives which provide beekeepers with consultations as well. One of this type of company's database currently gathers 5,000 beekeepers. The company's products are distributed to local regional markets through various stores (other small stores buy products from their main store) and the company can work on specific orders as well. As for the share between retail and wholesale sales, it is about 60/70 in favor of wholesale sales, and in some companies the share of wholesale sales can be even 100%. The annual income of similar companies is more than 100,000 GEL.

For inventory producing companies, beekeepers are not a priority and they are more focused on winemakers and juice producers, so the share of beekeepers in sales is negligible. The most demanded products among beekeepers are honey extractors, beekeeping suits, hats, candle melting machines and storage tanks. A certain share of companies re-exports imported products to neighboring countries.

A shortage of professional personnel and a buyer with a low buying power are also problematic for such companies, due to which the introduction of high-quality products will be ineffective. Among the problems mentioned above, the lack of funds, the need for trainings and the ineffective legal framework were also highlighted. According to inventory manufacturing firms there is no readiness to join the EU regulations, because the resources for real implementation are not enough. There is also no proper inspection from Government and beekeeping associations on pest management issues.

According to inventory manufacturing (and not only) companies, the tightening of regulations (tightening of import of drugs from Turkey and Russia) would have a positive role in the development of the industry. Also exempting scarce products from VAT (for example, wax, which is now taxed at 18%, which greatly increases the cost) would be beneficial for them.

As for the possibility of growing export directly to the European Union, it is desirable that the honey with the Georgian mark would go directly to the markets, after which Georgian producers can supply product at a higher price than they could supply as raw material. Currently, a kilogram of raw material is delivered within the range of 4-5 euros, which the beekeeper is not satisfied with. When the packaged honey will be supplied by the farmer, the price will increase because it will go directly to the market and reach the consumer. A Georgian farmer cannot compete with anyone in terms of quantity, they must try to stand out in terms of quality. For 2 years, in total 300-400 tons of honey have been exported to the European Union, of which 99% have been exported in large barrels, afterwards it was branded as a French or German product and accordingly the Georgian niche was lost. Inventory manufacturing companies also express their willingness to export to the European Union: "It will contribute to the development of our production area, if there is any problem with the product we produce, we will receive appropriate feedback to improve it."-states one of the companies.

Vet pharmacies

Drugs needed for animals are purchased in veterinary pharmacies located in Georgia. Their prices and quality are more or less similar in all pharmacies. Medium and large-sized farms have their own veterinarian and the small-sized farms receive necessary services from veterinary pharmacies or from veterinarians working for large-sized farms. Local veterinarian pharmacies purchase drugs at wholesale prices in Tbilisi directly from importers.

Veterinary pharmacies have the opportunity to import drugs from abroad (Russia, Germany, Great Britain, Turkey, France, Ukraine, etc.). Group of drugs are: antiparasitic, diagnostic, antibiotics, anti-inflammatory and vitamins. Some of the exact names are: Tuvalinate, Amitraz, essential oils

(tablets and spray) as well as Thymol in the form of syrup, mite treatment gel, nutritional supplements (bineral), preparations for stitches and foulbrood.

As for the number of beekeepers served by vet pharmacies during the year, it depends on the scale of the pharmacies. Vet-pharmacies mostly sell their drugs through various stores and dealers. Most of the vet pharmacies are stocked with meds for animal husbandry, where 5-10% of the meds are intended for beekeeping. Veterinary pharmacies note that they mostly need to deepen theoretical and practical knowledge, in which trainings are of crucial importance. Vet-pharmacies express their desire to be able to learn about news and bring them from abroad.

It is also challenging for vet pharmacies to find professional labor and key markets. The low buying power of beekeepers is problematic for them, due to which in many cases they (beekeepers) have to purchase unregistered products at more affordable prices. Some veterinary pharmacies do not have proper information about food safety, therefore they also do not have the technical capabilities that 100% ensure safe products. Farmers are looking for a cheaper solution, making homemade meds in an unsafe way, which sometimes ends fatally for bees. There are also many underground importers who are not controlled and who use to import drugs that are not permitted. Registration of drugs is required which costs 2-3 thousand GEL and as a result, some importers tend not to pay registration costs and import unregistered drugs. The process of registering the drugs is as follows: When the importer wants to register a new drug, he requests the information about the drug from the manufacturer and afterward they send the data to the Department of Vet Drugs of the Ministry of Agriculture. The procedure usually takes up to 2 months, after which they can register the medicine for 4-5 years.

Veterinary Services

According to Safety and Quality Investment in Livestock (SQIL) project, 1,043 veterinarians (383 women) and 509 (124 women) technicians are operated in Georgia. Only a few of them mentioned that they work in livestock as well as in the beekeeping sector. Medium and large-sized farms usually have their own veterinarians. The small-sized farms receive necessary services from veterinary pharmacies, veterinarians working for large-sized farms or from the veterinarians representing National Food Agency.

Most veterinarians in Georgia are more than 50 years old. This is caused by low interest from young people, who do not have motivation to study veterinary, because of the low salary in veterinary field. Youngsters who study veterinary do not want to go and work in the villages and mainly the only option they have is to work in a vet shop or in some small private veterinary company on a low income.

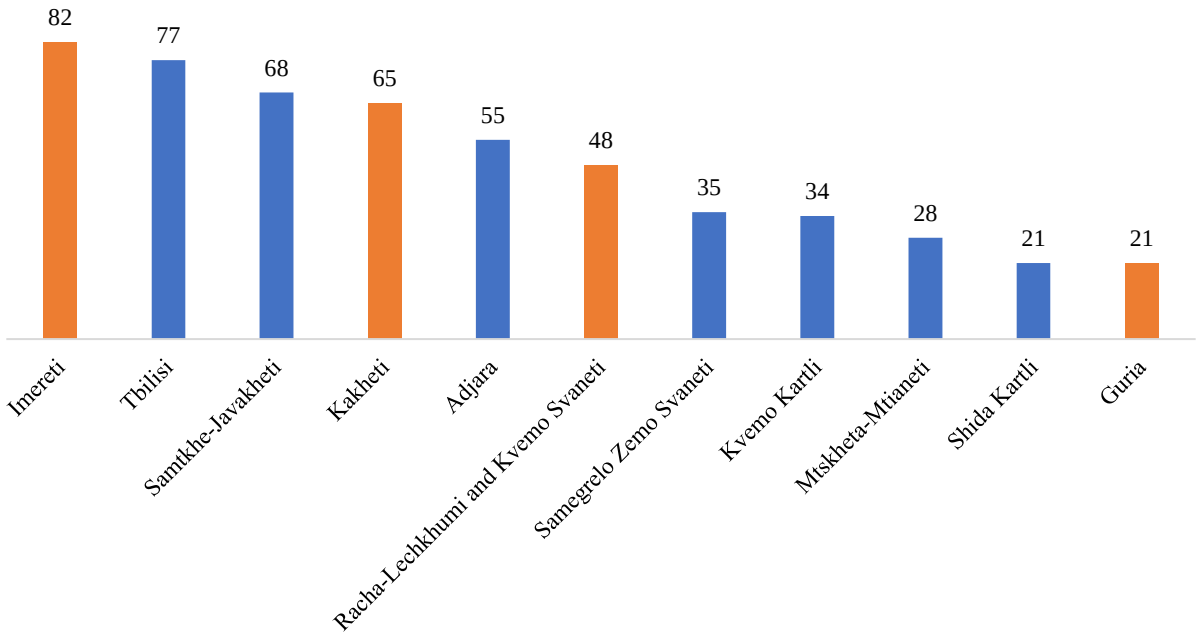
According to research conducted by SQIL project in 2022, 85 of veterinarians are operating in Samegrelo and Zemo Svaneti, 99- Kakheti, 179 – Imereti, 25- Mtskheta-Mtianeti, 44 – Guria, 59 – Adjara, 303 – Tbilisi, 22-Racha-Lechkhumi, 65 – Samtskhe, 87- Kvemo Kartli, 75 – Shida Kartli.

4.2 Production and Harvest

Honey producing farmers – There are different types of farmers and agricultural holdings that are engaged in the beekeeping sector.

According to GEOSTAT's business register, 534 business operators involved in beekeeping are registered in Georgia. These business operators are distributed in the following regions:

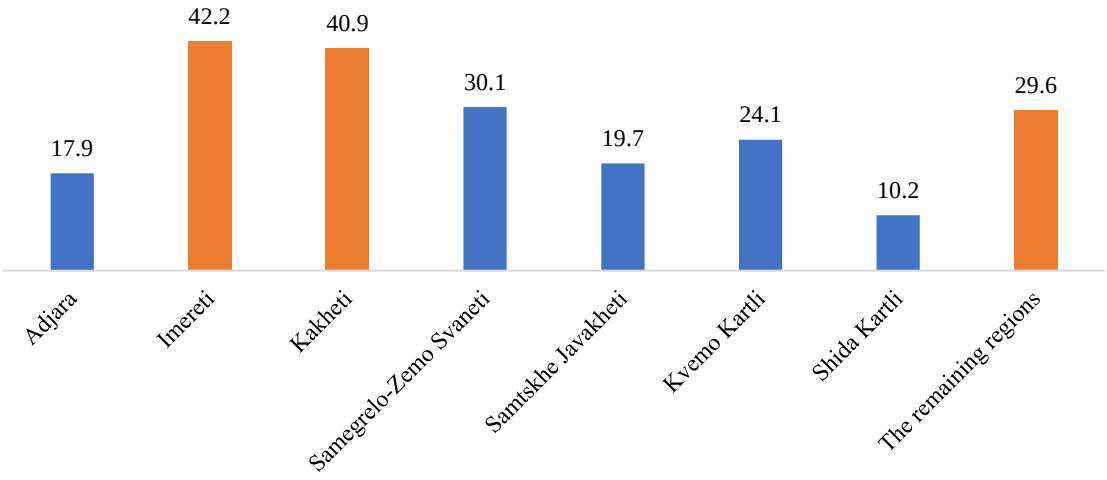
Figure 13. Business operators engaged in beekeeping (target regions in orange color)



Source: National Statistics Office of Georgia, 2022

Despite of the fact that there are households engaged in every region, there are no data for all the regions in regards of the number of beehives as the data for Racha-Lechkhumi and Kvemo Svaneti, Guria and Mtskheta-Mtianeti are missing as they are accumulated in the remaining regions.

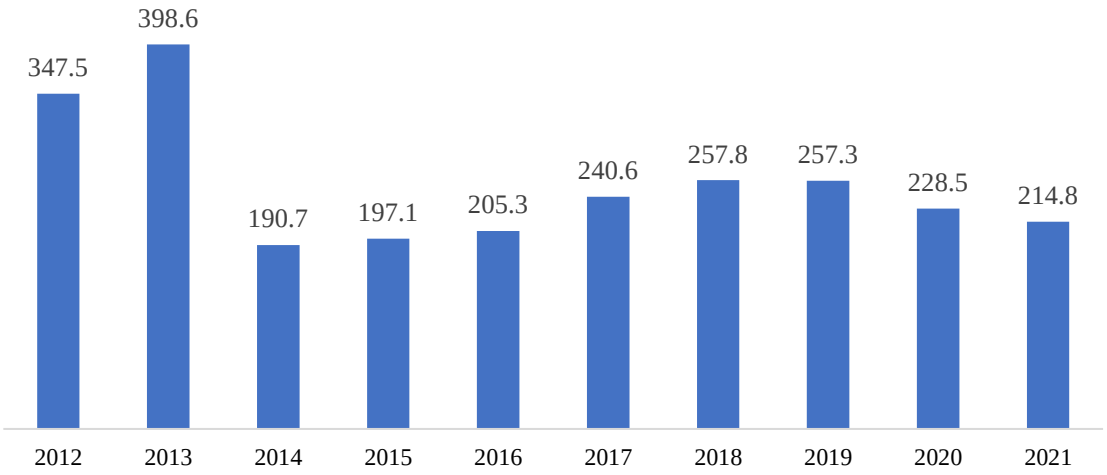
Figure 14. Distribution of beehives by regions (1,000 hives, 2021, target regions in orange color)



Source: National Statistics office of Georgia. Agricultural Census 2014.

Also, the total number of beehives is not stable and have been characterized by some major ups and downs through the last 10 years:

Figure 15: Number of beehives (2012-2021, 1,000 hives)

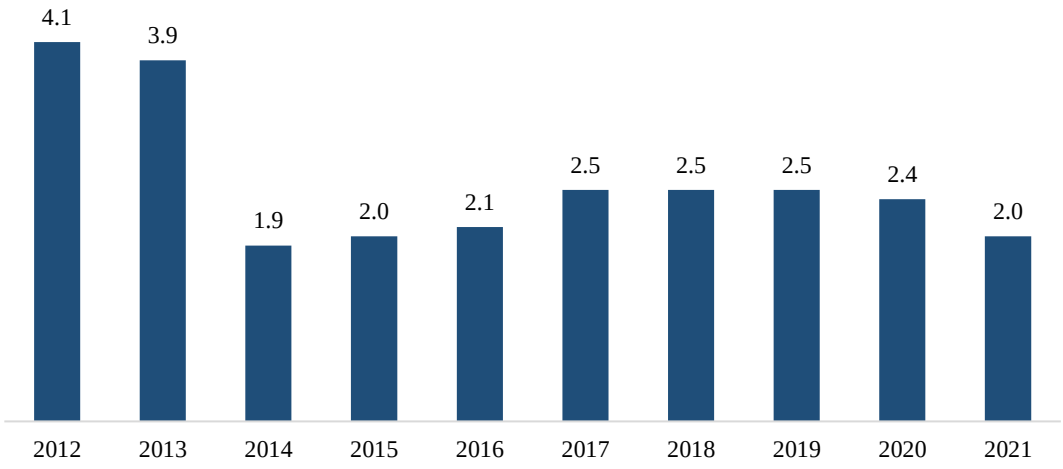


Source: National Statistics office of Georgia.

Honey production

Honey production in Georgia is characterized by instability, which is highlighted by the data of the last 10 years. After 2013, the scale of honey production decreased dramatically and since then it varies from 1.9 thousand tons to 2.5 thousand tons per year.

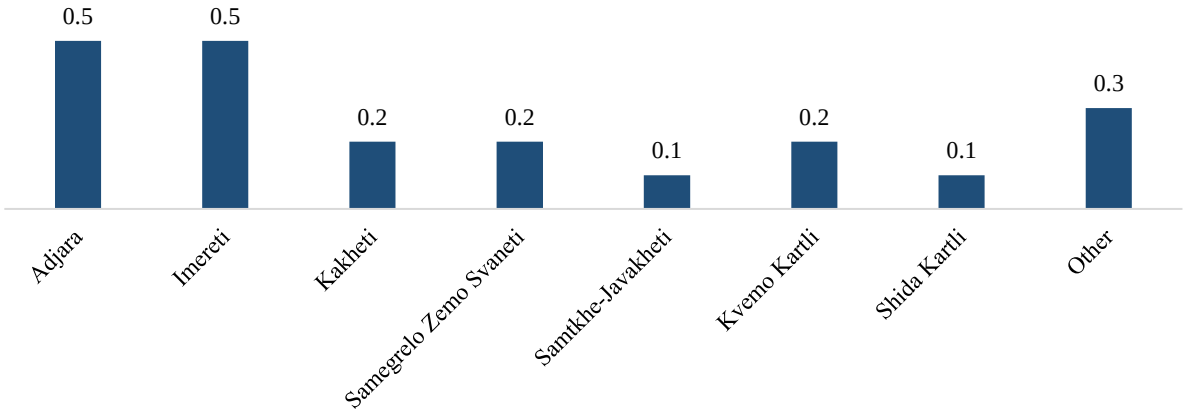
Figure 16: Honey production (thousand tones)



Source: National Statistics office of Georgia

As for regions, honey production by region is presented in the following graph:

Figure 17: Honey production per regions (2021, thousand tons)

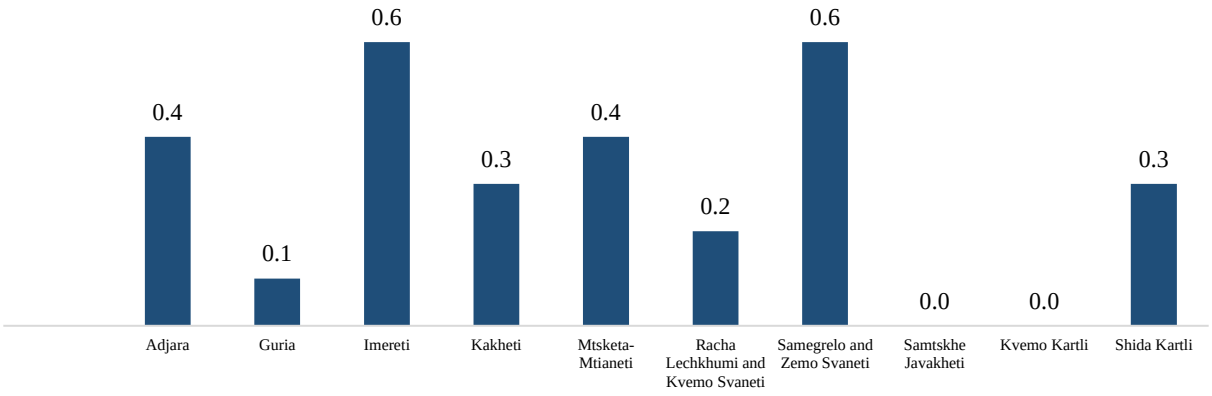


Source: National Statistics office of Georgia

As it can be seen from the graph, Adjara and Imereti regions are outliers by honey production. 0.2 thousand tons of honey were produced in Kakheti in 2021, while data on honey production in Guria and Racha-Lechkhumi and Kvemo Svaneti was not recorded by the National Statistics Service.

As the main way to transport a bee colony to another farm is an automobile as the absolute majority of farms (100%) use an automobile to transport beehives to other farms for feeding. As for veterinary services, the beekeepers from Imereti and Samegrelo and Zemo Svaneti applied for veterinary services the most:

Figure 18: Number of farms that received veterinary services for bee families (thousand units, 2021)



Source: National Statistics office of Georgia

Knowledge and Capacity of Farmers

Many of the country's beekeeping farmers lack specific technical know-how to produce safe and high-quality honey. Farmers in Georgia often worsen bees' welfare by using irrelevant means of transportation. They do not have enough knowledge on the conditions that are needed for bees' transhumance. There are cases when farmers use vehicles that are in poor condition, e.g. farmers transport much more animals by one vehicle than is recommended. All these factors have a negative effect on the animal welfare and leads to low productivity.

Despite various donors who time to time organize trainings in concrete aspects of beekeeping, the majority of producers in Georgia have no information on such training opportunities. Therefore, they get free of charge consultations from more experienced farmers, veterinarians or through Informational Consultancy Centres (ICCs) established in every municipality by the Government of Georgia. However, during individual surveys with farmers, it was depicted that the quality of these services often is not sufficient. The overall factors, which hinders the development of farmers (regardless of their occupation) is presented below in the survey conducted by National Statistics Office of Georgia:

Table 6: Factors hindering the development of farmers according to regions

	Share of farms that think they will not develop/stop functioning in the next 2-3 years	Reasons												
		Access to agricultural land	Access to water	Access to finance	Access to agricultural machinery and equipment	Access to labor force	Access to other agricultural inputs	Insufficient demand for farm products	Low prices on farm products	Reduction of soil fertility	Natural disasters	Lack of security	Transportation and/or infrastructure	Other
Adjara	32	2	9	67	12	22	11	32	48	35	8	1	2	1
Guria	11	17	14	95	1	13	20	8	37	12	4	0	12	0
Imereti	16	20	25	68	20	38	10	1	13	12	1	0	3	7
Kakheti	23	29	23	72	4	15	3	1	11	6	9	1	2	5

Mtskheta-Mtianeti	19	13	52	78	7	3	12	0	4	20	7	1	0	6
Racha Lexhkhumi and Kvemo-Svaneti	15	9	0	77	4	19	0	4	4	9	0	4	14	5
Samegrelo and Zemo-Svaneti	12	5	9	64	13	29	9	3	36	36	14	6	2	8
Samtskhe Javakheti	22	11	11	72	17	19	6	0	16	4	10	0	8	3
Kvemo Kartli	27	44	47	73	16	25	8	1	8	15	4	0	8	1
Shida Kartli	19	13	34	78	19	18	3	7	12	6	0	3	1	10

Source: National Statistics office of Georgia

4.3 Post- Harvest Handling and Processing

Honey processing companies

Honey processing rates depends on the quality and characteristics of the honey. For example, the high sugar content the honey is, the longer it takes to process it. The purchase price of honey for processing varies between 8-11 GEL, and the selling price is around 9-15 GEL, which in turn depends on branding and packaging costs. If the processing enterprise does not keep the honey, the processing price is about 0.5 GEL per 1 kilogram. The annual income of enterprises of this type of companies depends on the volume of honey processed by them: an enterprise that processed 110 tons of honey in one season received an income of up to 200,000 GEL, and an enterprise that processed 38 tons of honey in one season received up to 100,000 GEL.

Processing enterprises often sell the final product without any packaging in local regional markets and cities. The share of wholesale sales exceeds retail sales (proportion: 70-30), and in the case of some enterprises, it goes up to a 100%. Georgian processed honey is also exported in small volumes to countries such as Norway, Bulgaria, Germany, Italy, UAE and Qatar through intermediary export companies. In many cases, honey is processed by the order of exporting companies, for whom processing enterprises are one of the links in the value chain.

The main challenge for processing companies is to control the quality of the processed product, to find professional personnel, the need for training and product certification and to comply with the legislation.

The activities of a standard processing plant can be described as follows: processing plants inspect the conditions of the honey on site (if the beekeeper produces more than 1 ton of honey, otherwise the beekeeper is not attractive for the processing company), then they take a sample to seal it and send the samples to the laboratory. A full inspection of one sample costs around 2,500 GEL, and 300 GEL is added for each additional sample. When a positive answer comes from the laboratory, they go on the site with their own vehicles and utensils. Then honey is weighed, heated and poured into a mixer, after which it is homogenized. Afterwards it is sampled again, filtered and poured into a 3-ton vessel. The bottled honey goes to the warehouse. This whole process takes a maximum of 1 month.

In many cases, processing enterprises do not ask for documents confirming the quality of honey from beekeepers, they themselves test the honey sample in the laboratory like mentioned above. The reason for this may be the trust factor towards the beekeepers.

Inadequate infrastructure, difficulty in finding professional labor and lack of production capacity are the main difficulties for processing enterprises. They also believe that the training of professional personnel and emphasis on the production of organic honey will have a positive impact on the development of the industry. As for the knowledge of processing enterprises in terms of food safety, their knowledge in most cases is superficial and mostly limited to the fact that they

know that antibiotics and contaminants should not be in honey. However, at the same time, they satisfactorily assess their ability to meet technical requirements in the production process.

All of them positively evaluate the growth of trade with EU countries, because for them the European market is associated with stability, discipline and orderliness. They also believe that the niche of acacia and mixed honey, which is quite in demand in Europe, is still unoccupied and it is possible to work more actively in this regard. Their desired price of products for sale in the European Union ranges from 5-7 euros (cost of purchase on the spot: 7-10 GEL).

In general, most of the interested parties have a positive attitude towards the new laws and regulations that are in place for the production of "harmless honey", while the rest of them (minority) have not heard of it yet. As for the trade with EU countries and placement of Georgian products on the European Union market, all interested parties have positive attitude towards this.

Transportation

The cost of transporting honey depends on many factors: where it is loaded, whether it is domestic route, sea or air and prices also vary according to the season. A significant share of transport companies did not have experience of cooperation with beekeepers as alcoholic and non-alcoholic drinks, dried fruits, jams, juices, sauces and spices are mainly transported from food products. In the case of honey, the shipping cost of 1 container (21 tons), for example, to Belgium (by sea) costs up to 3000 US dollars. Sea shipping takes 25-30 days to EU on average, and air shipping takes 1 week. In case of container shipping, the prices depend on the type of container and the products that are being shipped, for example, whether it needs a temperature regime or not, what is the shelf life of the products etc.

The main challenge for transport companies is to find professional personnel and to ensure the safety of transportation. It is also important to improve infrastructure throughout the country, both road infrastructure and terminals and ports. The main port is in Poti, where there are only 2 berths and the ships are lined up. Increasing the number of berths would reduce the waiting time for ships.

Stimulation of trade with the EU will also be beneficial for shipping companies. As more markets are captured, more goods will be exported and as carriers, orders will increase and they will get more profits.

Printing and Labelling

Printing labels for beekeepers has not any difficulty, the cost is quite low (0.20 GEL). In addition to labeling, printers offer advertising services and printing flyers to beekeepers. However, due to the fact that the number of branded Georgian honey products is small, the share of sales to beekeepers in the total sales of printing presses is small, therefore they are less focused on beekeepers and have not heard anything about the new laws, regulations and requirements that are enacted and implemented in relation to the production of "harmless honey". Therefore, one of the main challenges for printers is lack of demand.

Packaging

It is also less problematic for beekeepers to be supplied with products such as packaging materials (glass jars, plastic cans, iron barrels). Sales of packaging materials takes place through the distribution channels of manufacturers and on site pick up by the buyer. It is also possible to work on specific orders depending on the scale. The price of plastic cans varies from 0.95 to 1.5 GEL, depending on its volume. It is possible to buy plastic jars of 0.750, 1, 1.5, 2, 3 and 5 liters.

Packaging companies need to have access to finance for equipment and trainings in accounting. Among the difficulties, finding skilled labor force and increase production capacity can be considered as main challenge. Like printers, packaging tar manufacturers are less beekeeper-oriented and have not heard anything about the new laws, regulations, and requirements that are being enacted and implemented regarding the production of "harmless honey."

4.4 Wholesale and Retail Distribution

Wholesalers - there are two types of wholesalers. One group go door to door and collect beekeeping products from family farms and later deliver them to open market, restaurants and/or groceries within the region and other parts of Georgia. Another group of wholesalers work in regional agrarian markets and farmers deliver products to them in any amount. Generally, there is not any regular system in place. Farmers may sell open doors in one month and next time may take honey to agrarian market. Large farms are more organized, and they work with several wholesalers and deliver honey to certain groceries and restaurants on a regular basis.

Distribution companies

Honey collecting/distributing companies sell honey both at wholesale prices and at retail prices. They also export honey mostly to the Gulf countries. Their annual income depends on their size as the annual income of export-oriented companies (who mostly work on wholesale sales) is more than 300,000 GEL per year, while the income of relatively small distributors who also focus on retail sales is relatively less.

Whether of their size, the needs of distributors include additional finance, finding professional labor and key markets, and the need for training to increase theoretical and practical knowledge. It is desirable for them that the honey produced by local beekeepers to meet food safety standards. The growth of exports to the European Union is positively assessed by the overwhelming majority of distributors. Some distributors focus on the export potential of queen bees and some on acacia and mixed honey, which is quite in demand in Europe and whose niche is still unoccupied.

Agrarian open markets – usually, resellers sell beekeeping products to final consumers in agrarian open markets. These resellers buy products from wholesalers, who collect enough bee products from farmers. Farmers and their family members also often sell products by themselves in open markets.

Supermarkets, small shops, restaurants, hotels – they apply various ways of receiving the bee products for further resale and/or own consumption. In some cases, farmers deliver to them

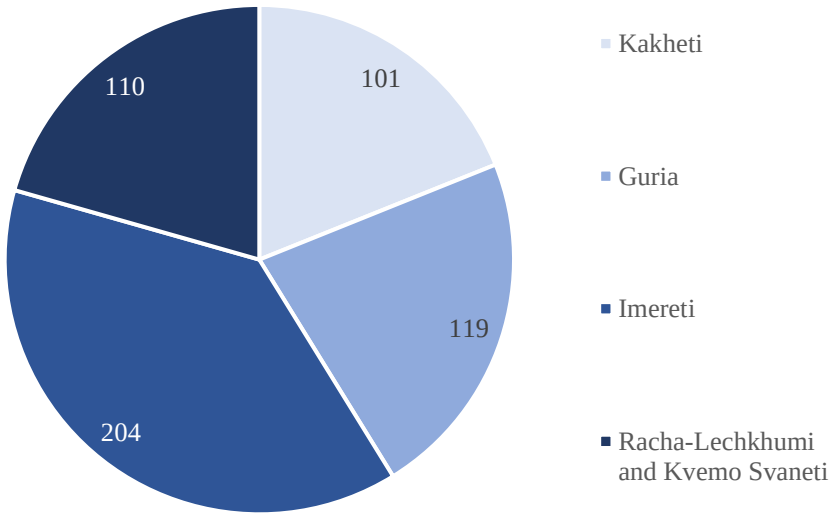
products directly (mainly large and medium size ones). Usually, wholesaler delivers them bee products in agreed amount on regular basis.

5. Survey Analysis

A survey of beekeepers was conducted in the target regions, which included both in-depth interviews and their validation. Ultimately, 1,264 beekeepers were validated in the target regions, of which 534 were interviewed in-depth. The analysis of the results of the mentioned in-depth interviews is given in the section of the analysis of the results of the surveys.

The interviews covered all four target regions: Imereti, Kakheti, Guria and Racha-Lechkhumi and Kvemo Svaneti. The distribution of respondents according to regions is as following:

Figure 19: Regional coverage



In total, beekeepers from 330 villages were interviewed in depth in the mentioned four target regions, in addition to the municipal centers, of which 145 are located in Imereti, 66 in Guria, 51 in Kakheti and 68 villages in Racha-Lechkhum and Kvemo Svaneti. Most of the interviewed beekeepers (87.3%) are men, and the exact gender distribution between regions is given in the following table:

Table 7: Sex distribution among interviewed local beekeepers in the targeted regions

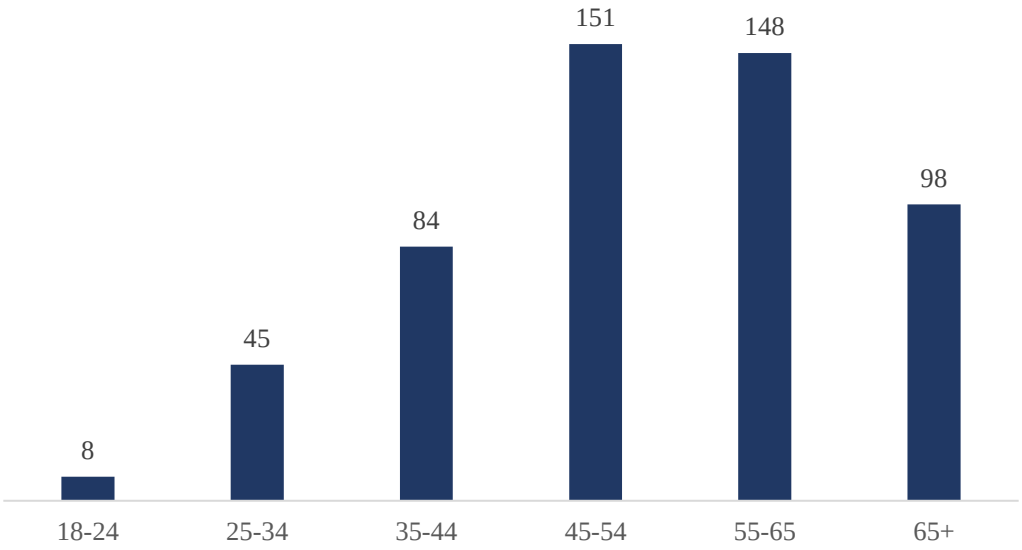
Targeted regions	Man	Woman	Share of Women in the total sample
Kakheti	71	30	29.7%
Guria	107	12	10.1%

Imereti	184	20	9.8%
Racha-Lechkhumi and Kvemo Svaneti	104	6	5.5%
Total	466	68	12.7%

As it can be seen from the table, the highest share of female beekeepers among the surveyed respondents is in Kakheti (29.7%), and the lowest is in Racha-Lechkhumi and Kvemo Svaneti (5.5%).

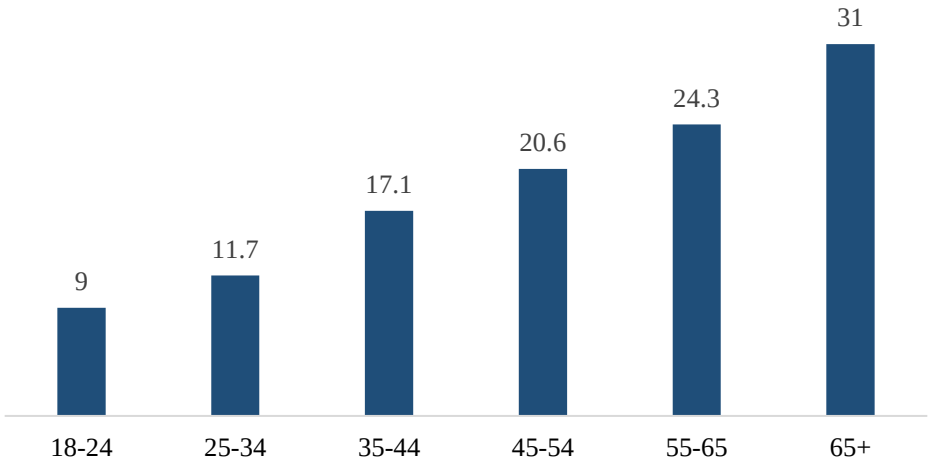
It is also interesting to analyze the age structure of the interviewed beekeepers and make relevant conclusions about the age category in which beekeeping is the most popular field of activity. The age structure of the interviewed beekeepers is given in the graph 27:

Figure 20: Age distribution of interviews beekeepers



As it can be seen from the results, beekeeping is the least popular among farmers under the age of 34, who make up only 10% of all surveyed beekeepers. Interest is particularly low among young people aged 18 to 24 (1.5%). On the other hand, beekeeping is most popular among farmers aged from 45 to 65 (56%). As for the experience in beekeeping, the average experience in beekeeping of the interviewed beekeepers is 22 years, although it is different in the case of the corresponding age category:

Figure 21: Experience in beekeeping among interviewed beekeepers of different age categories

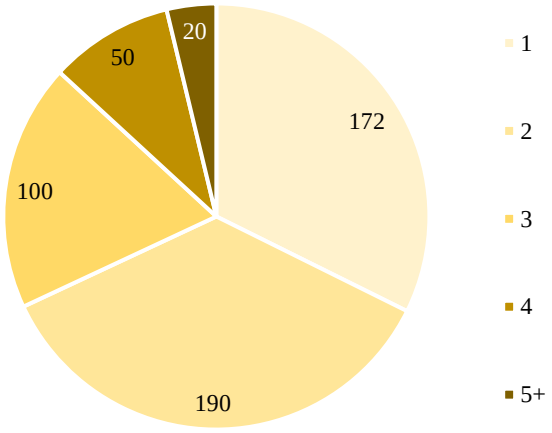


As expected, older beekeepers have the most experience in beekeeping (average of 31 years of experience among beekeepers aged 65+), while younger beekeepers have the least.

Employment

Interviewed beekeepers in most cases are employed in their own family farms, which is confirmed by the statistics of the involvement of family members in beekeeping: according to 68% of the interviewed farmers, their family members are also involved in beekeeping. The general picture is as follows:

Figure 22: The number of family members involved in beekeeping



Regarding the involvement of women and men, about 64% of family members involved in beekeeping (including the interviewed beekeepers) are men, and the rest are women.

The abundance of family farms in beekeeping is also emphasized by the statistics of registration as a business operator among beekeepers, according to which only 11% of the interviewed beekeepers are registered as a business operators, and the rest are individuals/household representatives. Among them, registered as a business operator, individual entrepreneurs (74%) and cooperatives (20%) prevail.

Scales of honey production

First of all, it is interesting to analyze the types of honey. It is noteworthy that it is quite common for beekeepers to produce honey of several species, where acacia honey holds the dominant position:

Table 8: Types of honey production in targeted regions

Species	Quantity
Acacia, Chestnut	208
polyfloral	137
Acacia	47
Acacia, Tilia	32
Acacia, polyfloral	29
Acacia, Chestnut, Tilia	27
Acacia, Chestnut, polyfloral	17
Acacia, Tilia, polyfloral	7
Acacia, Chestnut, Tilia, polyfloral	7
Tilia	6
Chestnut	5
Acacia, Chestnut, Tilia, Alpine	4
Acacia, Alpine	3
Chestnut, Tilia	2
Acacia, Chestnut, Tilia, Alpine, polyfloral	1
Alpine	1
Chestnut, Tilia, Alpine, polyfloral	1

However, it is interesting to see how different the types of honey are produced in different regions.

Figure 23: Popular types of honey in the Guria region (in total, 119 beekeepers were interviewed)

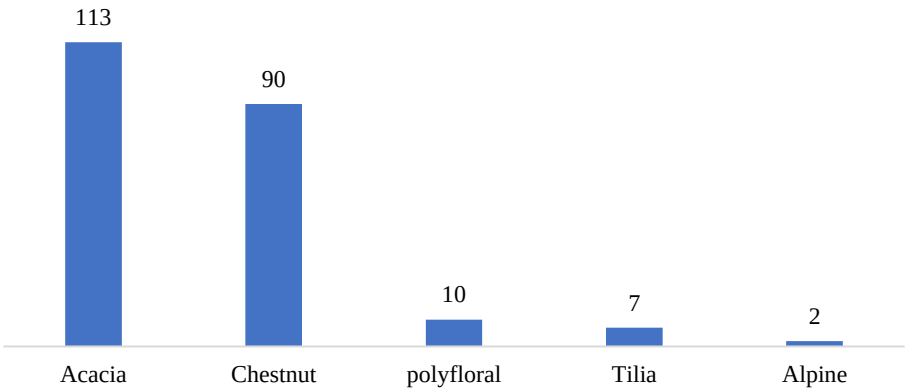


Figure 24: Popular types of honey in Imereti region (in total, 204 beekeepers were interviewed)

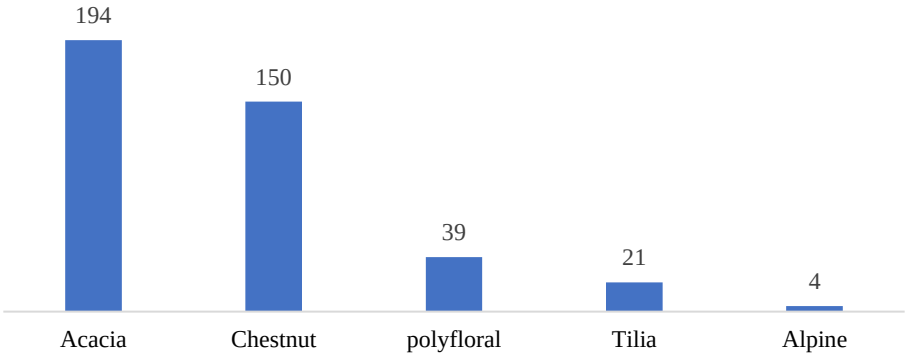


Figure 25: Popular types of honey in the Kakheti region (in total, 101 beekeepers were interviewed)

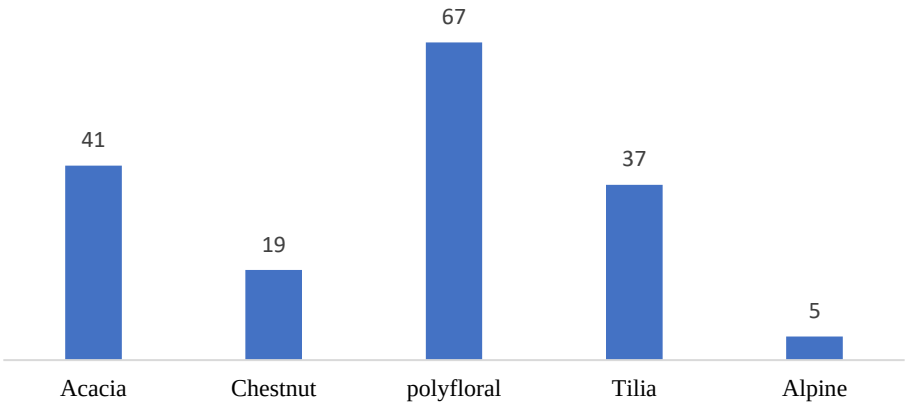
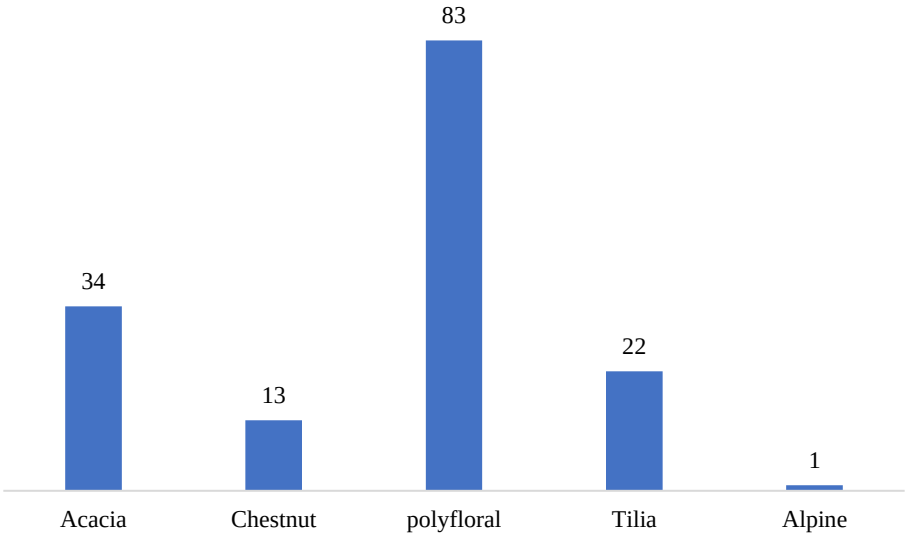
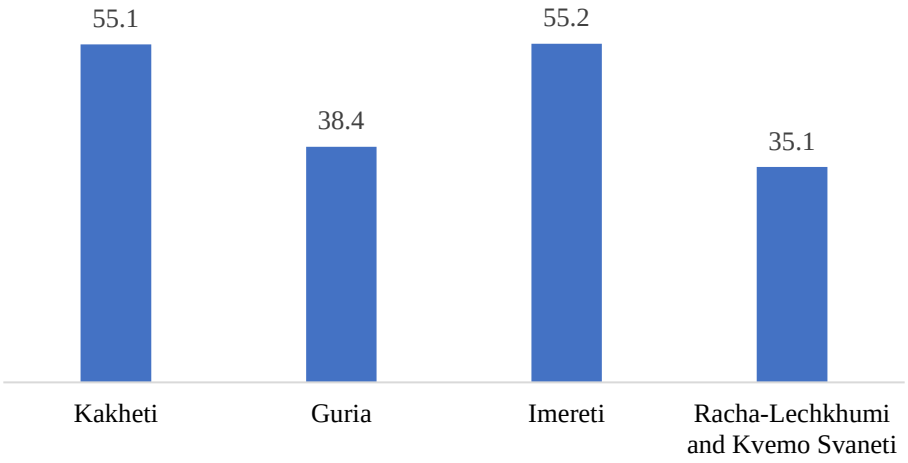


Figure 26: Popular types of honey in Racha-Lechkhumi and Kvemo Svaneti region (in total, 110 beekeepers were interviewed)



It seems that acacia and chestnut honey are particularly popular in Guria and Imereti regions, while polyfloral honey is popular in Kakheti and Racha-Lechkhumi regions. As for the number of operating hives, the average number of operating hives for the combined targeted regions is 47.3, and in terms of separate regions are as following:

Figure 27: Number of average active beehives across the targeted regions



Beekeepers in Kakheti and Imereti own much more hives on average than beekeepers in Guria and Racha-Lechkhum and Kvemo Svaneti. In addition to the number of operating hives, it is interesting to know exactly what beekeeping products the beekeepers produce since, in addition to honey, they can produce products such as royal jelly, bee venom, propolis, pollen and wax. As expected, honey is produced on the largest scale among beekeepers: each interviewed beekeeper produces

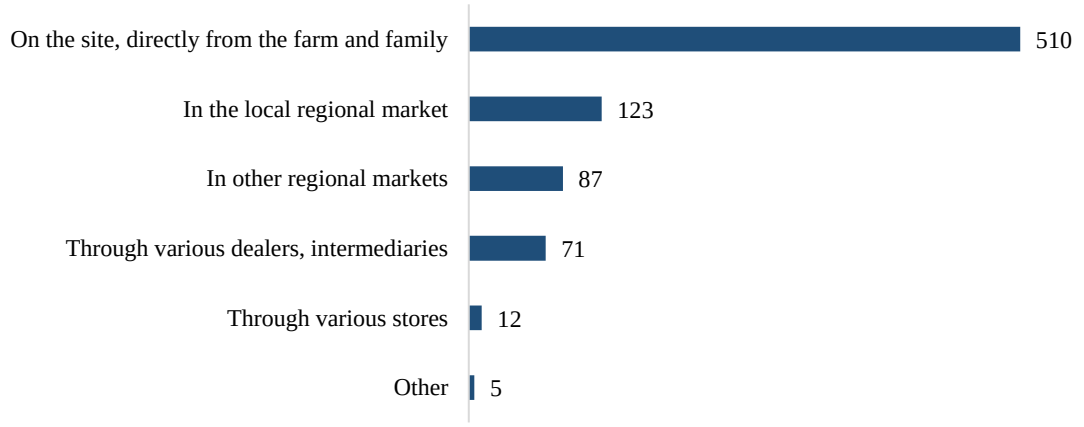
on average more than 1 ton of honey per year (1,074 kg). The average productions varies for different target regions: For example, a similar parameter for Guria is 849 kg, for Kakheti 1,287 kg, for Imereti 1,168 kg, and for Racha-Lechkhumi and Kvemo Svaneti 835 kg.

Compared to the production of honey, the production of other bee products is very modest. For example, among 534 interviewed beekeepers, only 19 of them produce royal jelly (bee milk). The mentioned 19 beekeepers produced up to 70 kg of royal jelly in total in previous year. The situation is similar in the production of bee venom, which is produced by 10 beekeepers on a rather small scale (in total, 2 kg of bee venom was produced in a year). Propolis production is much more common among the interviewed beekeepers as 39 beekeepers are involved in the production of propolis, where each of them produces an average of 5.1 kg annually. 9 beekeepers produce pollen, each of them produces 121 kg on average annually and the most intensively produced product (except honey) is a wax as 134 beekeepers are engaged in (more than 25% of the interviewed beekeepers). On average, each of them produces more than 42 kg of wax per year. As for breeding of bee families, most of the interviewed farmers (65.5%) do not and cannot carry out breeding of bee families.

Income

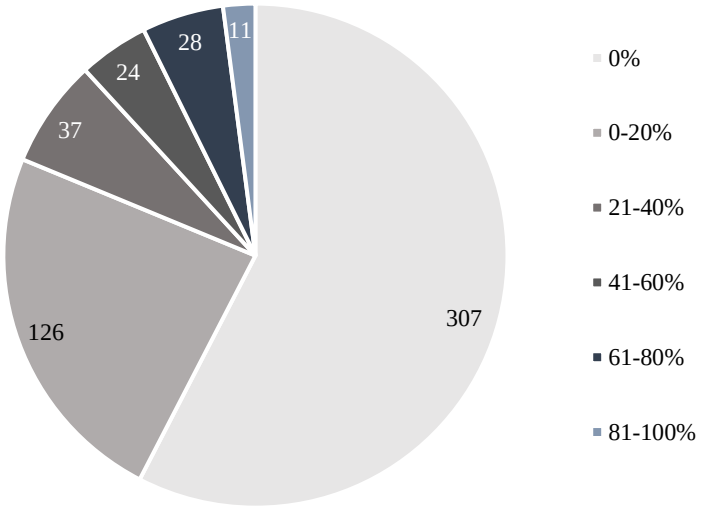
It is also interesting to discuss the ways of selling the products produced by the interviewed beekeepers. The absolute majority of beekeepers (95.5%) sell their products on site, directly from the farm and family. The overall distribution structure is given in figure 29:

Figure 28: Different ways of selling bee products



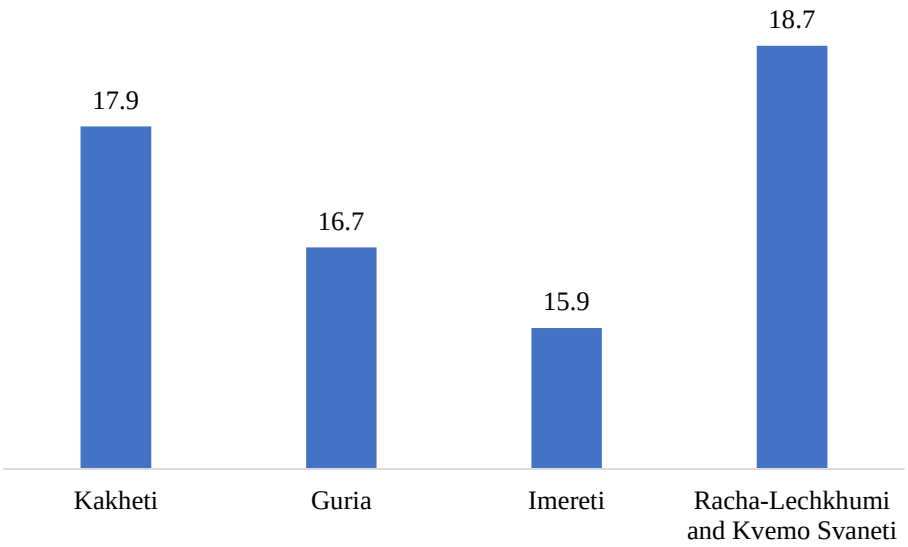
Due to the fact that most of the beekeepers sell their products on the site, directly from the farm and family, the share of wholesale sales in the total sales is low. The share of beekeepers who do not sell their products at wholesale prices is 57.5%, while only 2.1% of beekeepers sell more than 80% of their total sales at wholesale prices:

Figure 29: Share of wholesale sales in total sales



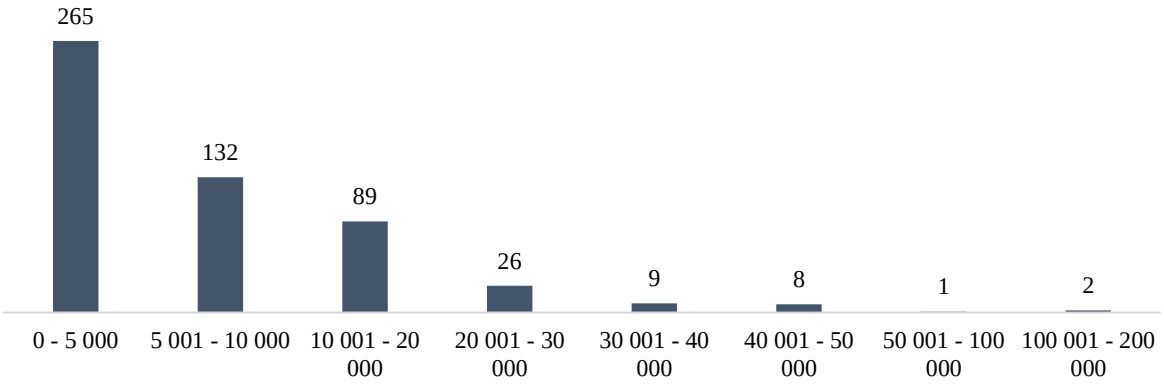
As for the selling price of one kilogram of honey, it depends on many factors such as packaging, honey quality, type of honey and therefore its price varies significantly. The selling price of one kilogram of honey starts from 8 GEL and goes up to 30 GEL, while the average selling price of one kilogram among the interviewed beekeepers is 17 GEL. As for the average selling prices according to the regions, the highest selling price is in Racha-Lechkhumi and Kvemo Svaneti (18.7), and the lowest is in Imereti (15.9).

Figure 30: Average selling price of 1 kilogram of honey by region



Regarding the possibility of export, most of the interviewed farmers (95.4%) did not sell their products abroad. Among the exporting farmers, the most beekeepers exported their products to Turkey (8 beekeepers). The small scale of interviewed farmers is reflected as well in the data of the average annual income:

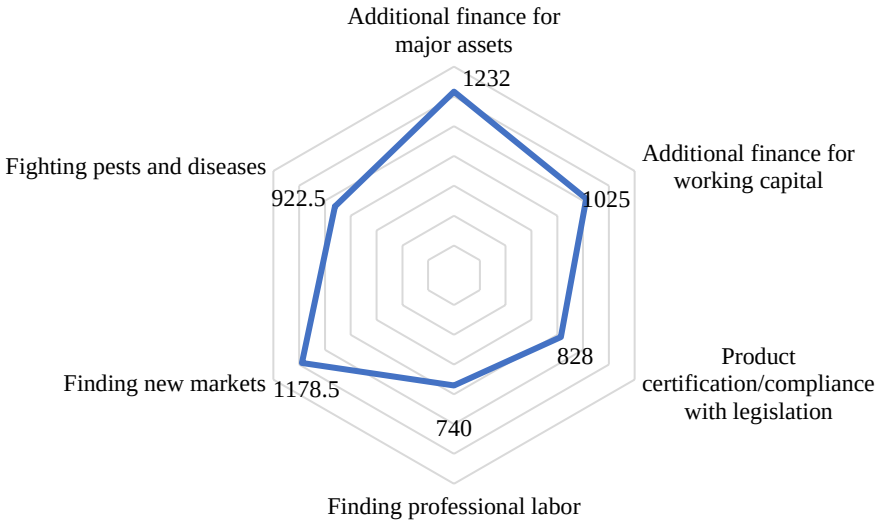
Figure 31: Average annual income from beekeeping



Needs and difficulties

The survey of beekeepers also included an analysis of their most critical needs. The importance of the indicators was assessed using a three-point system, where critically important need was assigned with 3 points, moderately important with 2, and less important with 1. The importance of needs was assessed by the sum of the points assigned to each indicator:

Figure 32: Assessment of farmers' needs

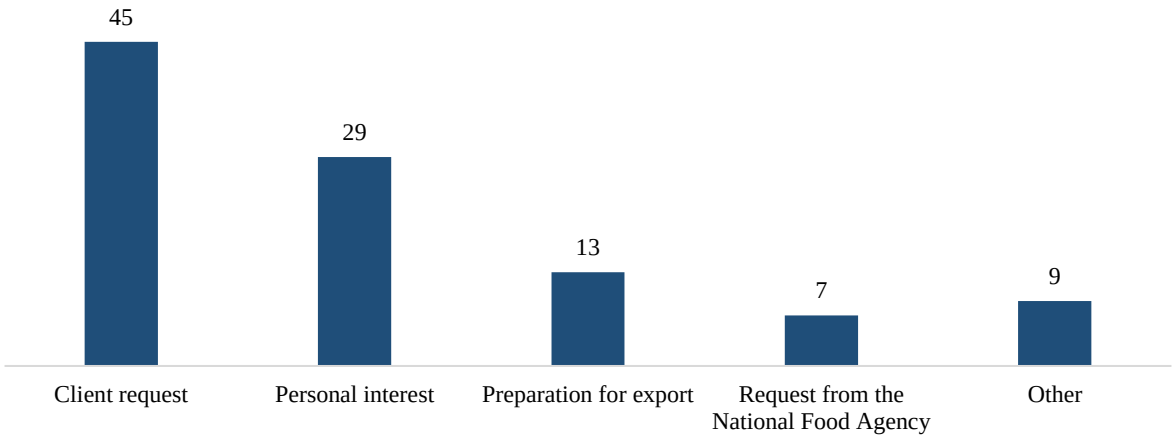


As the survey revealed, the most important need for beekeepers is to find additional funds for major assets and to find new markets. On the other hand, they consider the search for professional labor to be the least important. Interestingly, in contrast to beekeepers, who believe that finding professional labor is the least problematic, the situation is evaluated drastically oppositely by other

stakeholders involved in the value chain, who focus precisely on the difficulty of finding professional labor.

Most of the interviewed beekeepers (76.2%) have not tested their products in the laboratory, and the reason behind that in most cases (92%) was the lack of need, and in the rest of the cases, the buyer took upon himself to conduct the analysis, and only one beekeeper noted the lack of finances as the reason of no laboratory testing. As for the reasons for which beekeepers tested their products in laboratories, the following reasons can be highlighted:

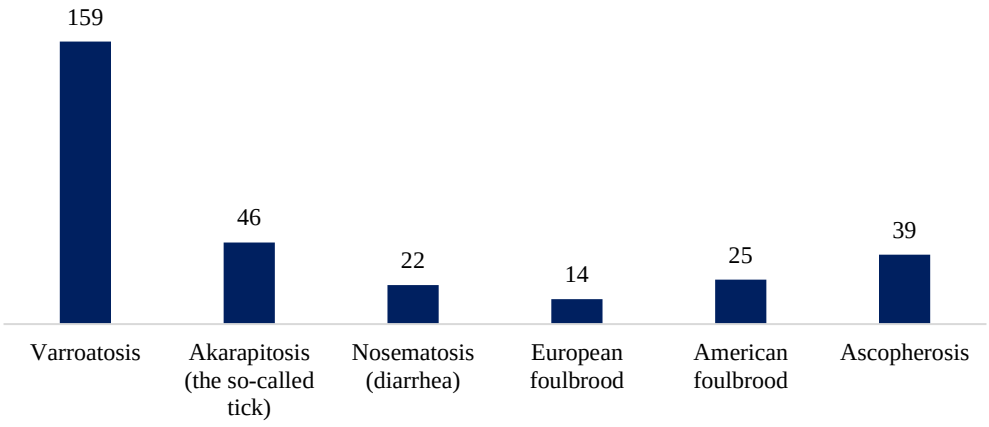
Figure 33: Reasons for checking the quality of honey in a laboratory



Diseases

Interviewed beekeepers are actively fighting against various diseases. Most of the time, beekeepers in the target regions struggle with the following diseases:

Figure 34: The most common diseases beekeepers in the target regions have to fight against



As it can be seen from the graph 35, beekeepers have to fight against varroatasis most often, and diarrhea and American and European foulbrood the least. As for the specific preparations used by

beekeepers to tackle the above-mentioned diseases, the respective preparations and approaches in this regard are:

Varroatosis: Bipin; isolation of mother bees; Varokom; acids; traps.

Akarapitosis: Bipin; Bisanari; Varokom; acids.

Nosematosis: Apimax; Oxetetracycline; Nosemat.

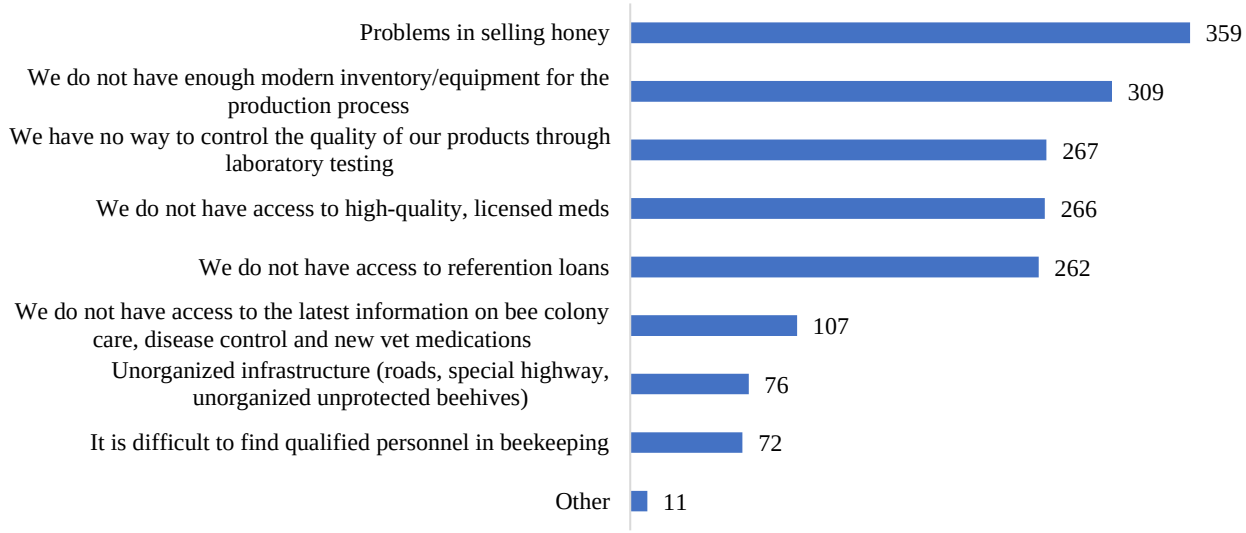
European foulbrood: Apimax; Thymol; Ascovar.

American foulbrood: Apimax; Thymol; burning (the most often used approach in threatening the mentioned disease).

Ascopherosis: Ascovar; Apimax; Unison; changing mother bees; renewal of the nest; regulation of ventilation; using garlic.

In addition to the most commonly used medicinal preparations, beekeepers also summarized the difficulties encountered in their farming activities:

Figure 35: Difficulties in beekeeping

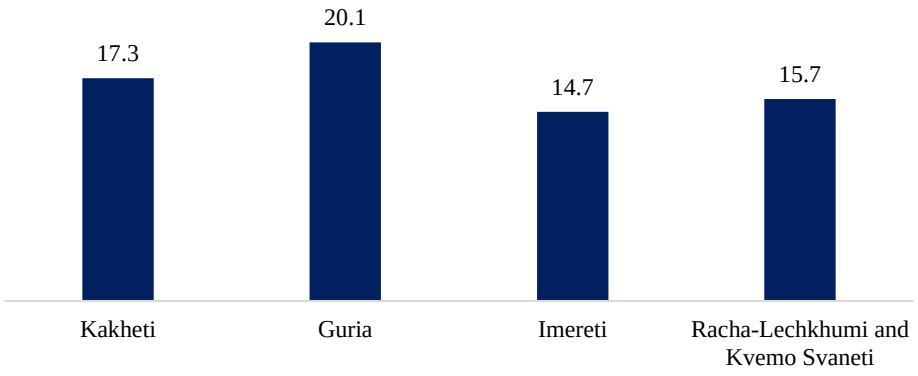


The most difficult task for beekeepers is to sell honey on big scales, as well as the lack of modern technology to set a high quality production process. The beekeepers also pointed out the most important directions which would help to develop their activities and to increase their capacity. The responses are more or less consistent with the results in the Figure 42 and again highlights problems such as selling honey, need of additional finance, limited access to soft loan, finding new markets, lack of access to high-quality meds and equipment (electric/modern cybrits, aka extractors), need of purchasing new hives and improvement of veterinary medicine.

Most beekeepers have little knowledge of food safety standards. Out of 534 interviewed beekeepers, only 6 of them name a specific applicable law, 84 of them state that they have heard about food safety standards, but they are unable to specify it, 36 of them generally explain that they have heard about the harmfulness of antibiotics, as well as that honey should not be falsified and should be labeled and should not use fungicides and unregistered meds, etc. The largest part (408 beekeepers) has no information about food safety standards. Most of the interviewed beekeepers (69.3%) believe that the National Food Agency is in charge of controlling the safety standard of beekeeping products, while the rest do not know who might be in charge in this regard. However, despite the fact that more than 76% of the interviewed beekeepers do not know much about food safety standards, more than 82% of the same beekeepers believe that their technical abilities to comply with the norms and requirements set for the product in the honey production process are satisfactory. Only 17.4% of the interviewed beekeepers believe that they do not have the technical capabilities to ensure safe production. Most of the beekeepers (86%) also welcome the new laws, regulations and requirements that are enacted and implemented in relation to the production of "harmless honey", 8% have not heard of these regulations, and the remaining share, 24 beekeepers have not thought about the pros and cons of such regulations and finally, 5 of them strongly believe that such regulations will hinder their activities.

98.9% of interviewed beekeepers perceive trade with EU countries and placement of Georgian products on the EU market as a positive sign, 0.6% declined to answer and 0.6% expressed a negative attitude (low sales price was named as one of the reasons). The reason for the positive attitude in most cases is a stable market, high quality and sale price, increase of local production, access to modern technologies and popularization of Georgian honey. As for the desired sales price in the EU, it differs according to the local target regions:

Figure 36: Desired wholesale price for 1 kg of honey in the EU (GEL)



As it can be seen from the graph, the highest expectations for the export price of honey are in Guria (20.1 GEL per 1 kg of honey), and the lowest in Imereti (14.7 GEL per 1 kg of honey).

6. External Factors

6.1 Related to Business Enable Environment

Georgian Economy – Overview of the last decade 2012-2022

Throughout the past decade, Georgia's Gross Domestic Product (GDP) increased by an average of 4.2% annually. However, it reached its maximum level in 2021 (about 10%) and it continued in 2022 and economic growth amounted 10.1%. There have been no significant changes in the structure of Georgian GDP in the last 10 years and share of agriculture, forestry, and fishing in 2022 amounted 7.0%.

Consumer Price Index

Throughout the last decade, consumer prices in Georgia increased by an average of 5.4% annually. In the given period, consumer prices decreased only twice, in 2012 and 2013. After 2013 consumer prices started to increase.

In 2022, prices increased by 11.9%. In the given period, the prices of food, non-alcoholic beverages, alcoholic beverages, tobacco, housing, water, electricity, gas and other fuels increased the most. Decreases in prices over this period were visible in only clothing and footwear, health, and communications. In the five biggest Georgian cities (according to population) prices increased the most in Batumi and least in Kutaisi.

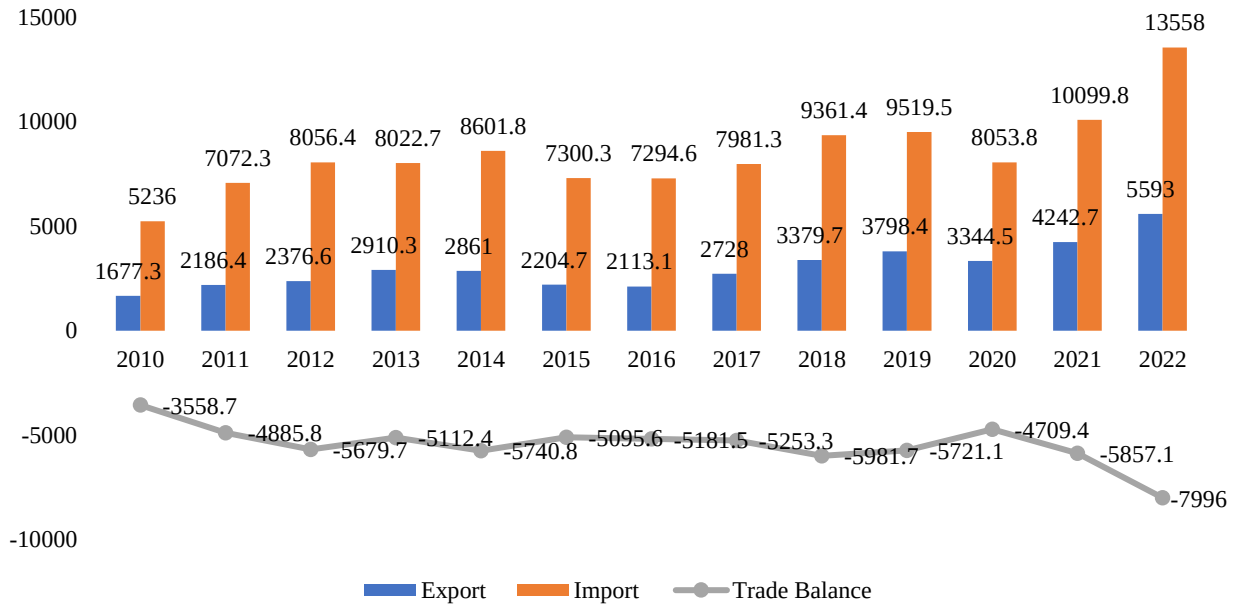
Georgian Lari Exchange Rate

In Jan 2023, Georgian Exchange rate against USD averaged 2.67 compared with 2.68 in the previous month. The indicator reached an all-time high of 3.437 in Apr 2021 and a record low of 1.25 in Jan 1996.

Foreign Trade

From 2007 onwards, the dynamics of external trade have been unsteady. Based on the statistical data of past 10 years, Georgian exports peaked in 2022 (USD 5.6 bln). The peak for Georgian imports for this period, on the other hand, was recorded in 2022 (USD 13.6 bln).

Figure 37. Trade balance of Georgia

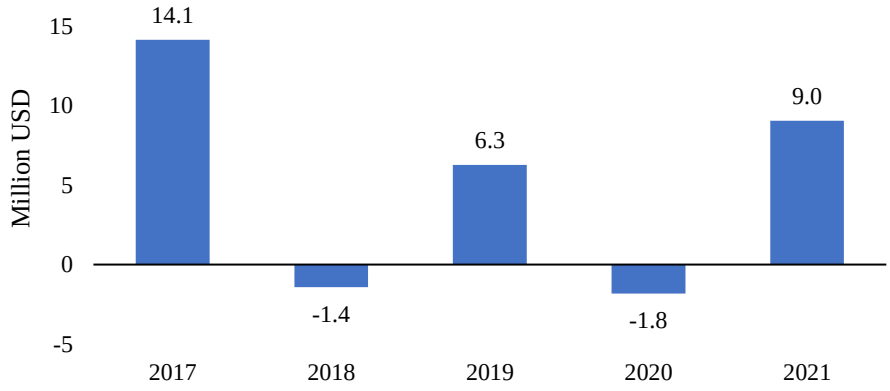


Source: National Statistics Office of Georgia

Investments in the agriculture sector

Investments in the agricultural sector are characterized by instability, which is confirmed by the data of the National Statistics Office of Georgia. In 2021, only 9 million USD was invested in the mentioned sector in Georgia, and in some years (2018, 2020), the rate of net foreign investments was negative (GEOSTAT , 2021).

Figure 38. Direct foreign investments in Georgian agriculture



Source: (GEOSTAT , 2021)

Access to agricultural factors of production, equipment, and services

82.3% of rural households own agricultural land, and 66% own livestock. However, according to the 2014 agricultural census, the average land size of agricultural farms does not exceed 1.31 ha, indicating small plot sizes and, as a result, agricultural fragmentation. In addition, households engaged in agricultural activities have limited access to agricultural infrastructure (irrigation, mechanization, etc.).

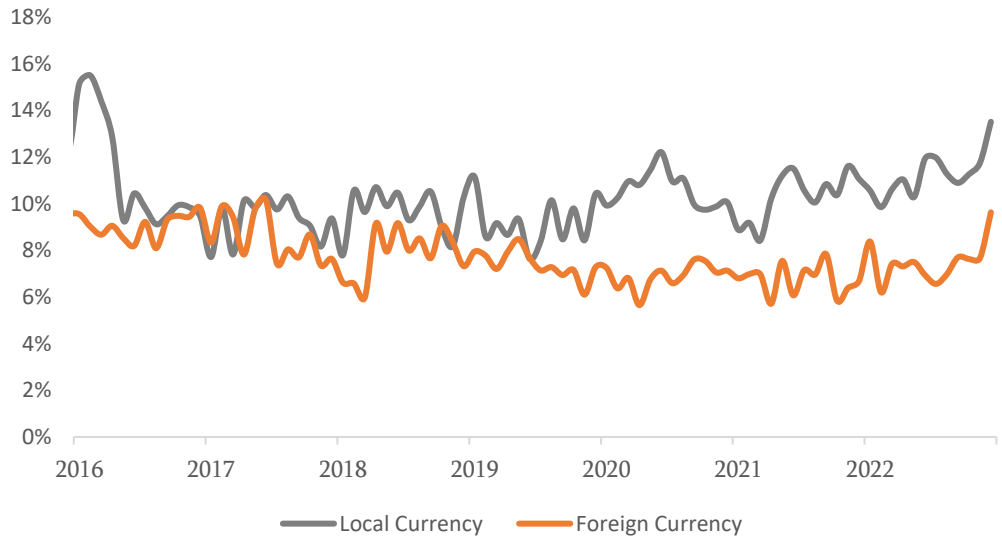
According to the 2014 census, only 1.49% of farms (agricultural holdings according to GEOSTAT) had their own working tractor, 2.75% had their own hand tractor and 2.20% had their own cultivation equipment (GEOSTAT, 2014).

The Government of Georgia (MEPA/RDA) and donors provide significant financial support. Regional Information and Consultation Centers are actively involved in promoting the development of agriculture. And these centers themselves are coordinated by the Department of Regional Relations and Regional Management. Their role is to provide technical advice to farmers and inform them about government subsidy/support programs. They also provide information on NGO/donor development projects. In addition to the advisory centers, there are public mechanization centers where farmers can rent tractors and other equipment.

Agricultural credit and leasing system

When reviewing the credit market, it is interesting to analyze the percentage of loans in the agricultural sector. In addition to the interest rates, the number of loans in the agricultural sector has increasing trend.

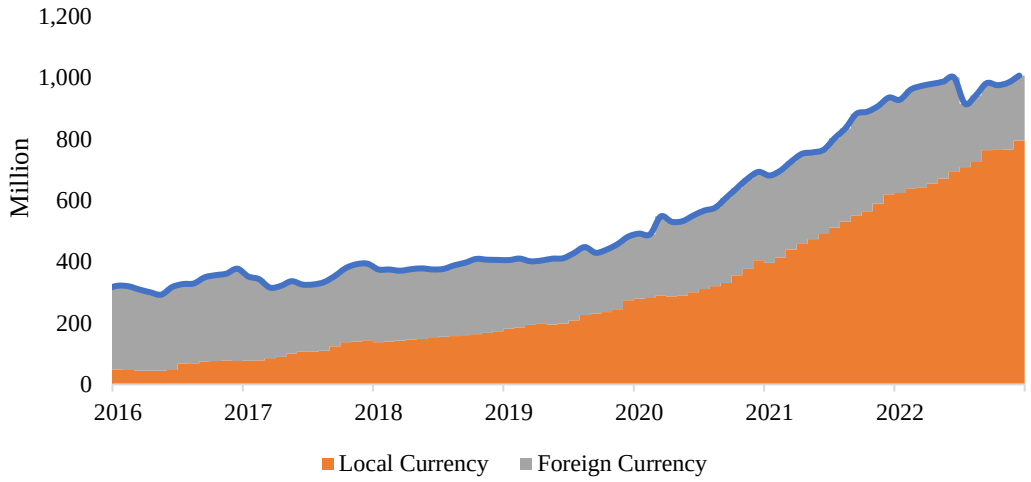
Figure 39. The interest rate on loans in the agricultural sector



Source: (National Bank of Georgia, 2022)

Compared to the national currency, the rate of loans in foreign currency is more stable and characterized by less fluctuations. The average interest rate in GEL ranges from 8 to 16%, which for foreign currency is 5 to 10% (National Bank of Georgia, 2022).

Figure 40. Loans in the agriculture sector



Source: Information from Commercial Banks, (National Bank of Georgia, 2022)

As can be seen from Figure 41, in 2016-2022, the share of loans issued in the local currency has increased, and since 2020 it has already exceeded loans issued in foreign currency. As a result, in 2022, almost 1 billion GEL worth of loans were issued in agriculture (National Bank of Georgia, 2022).

Banking is one of the fastest growing sectors in Georgian economy. The financial sector is well-regulated and capitalized. Through the RDA, the Ministry of Environment Protection and Agriculture is now offering multiple low-interest loan products to promote agriculture business growth (e.g. the Agro-Credit Program, Enterprise Georgia, Preferential Credit Program etc). Donors including the French Development Agency, the EU, USAID, SDC, EBRD and others are also subsidizing commercial lending to farmers.

However, gaining access to finance remains a challenge for agricultural SMEs, particularly for new, innovative enterprises. SMEs still largely rely on owners' capital and retained earnings. Since agricultural loans represent only small part of banks' lending portfolios, loan officers are rarely trained how to service the agricultural SME market. Agricultural SMEs, in turn, lack knowledge on how to translate their ideas into viable business plans to make them attractive to potential investors. Further, despite the diverse financial product offerings on the market, insurance products for livestock farmers are just now entering the market and are not widely available, leaving farmers at risk of asset losses in the face of increasing weather-related threats.

In 2017 report[2], the Rural and Agriculture Policy and Development Institute confirmed the existing gaps in provision of finance to smallholder farmers and provided recommendations to decision makers to address these challenges according to the best practices. The study highlighted two main problems that have been identified through face-to-face interviews with farmers[3]: 1. Farmers' collateral is evaluated with lower than market price; 2. smallholder farmers' business ideas are often rejected. According to the survey results, farmers have a perception that their applications will not be considered for financing unless they have a lot of money and good collateral, accordingly. Farmers also mentioned the problems with the bank staff who does not have enough knowledge to evaluate their business ideas. At the same time, most of the smallholder farmers do not have the capacity and knowledge to proper describe their business ideas. Altogether, this creates a gap between banks and applicants, which leads in rejecting and, therefore, not financing smallholder farmers' business ideas by banks.

While banks do extend credit to businesses, access to finance is an especially acute problem for small, medium and startup businesses. Access to finances for new, innovative enterprises and farmers is especially problematic due to high interest rates and demanded collateral as new enterprises often don't have sufficient collateral or credit history. Also, these more established banks don't have much experience working in the agriculture sector, including beekeeping - and their lack of experience makes them all the more reluctant to extend credit in this space. Even through financial sector is relatively well-developed, insurance products are not as widely available as insurance. Undeveloped insurance products cannot reduce business (such as crops, weather or natural disaster insurance) and credit (immovable and movable property insurance, payment insurance etc.) risks and improve loan conditions for borrowers (reduction of loan costs).

Due to the fact that agro loans represented only small part of their portfolios, the banks did not provide capacity building activities for agro loan officers and did not develop strategies for improving and expanding the agro credit services in this field.

Rural entrepreneurs have limited knowledge about agro loans and in most cases, they avoid to take the risk to strengthen their businesses/to commence start-ups. Some rural entrepreneurs might have already tried to obtain financial loans without success due to poorly defined business plans. They lack awareness about the essential technique of business plan writing.

Regulations and Government Policies

Government of Georgia developed a technical regulation on honey in 2014. The aim of the technical regulation is to determine the uniform principles of regulation at the stages of production, processing, and distribution of honey. According to regulation, honey placed on the market must

[2] Rural and Agriculture Policy and Development Institute. 2017. Evaluation of Preferential Agro Credit Program

[3] In total, 146 small-holder farmers were surveyed. Small-holder farmer - for the purpose of the research, the smallholder farmers are defined as farmers that applied for preferential agro-credit loans in the amount of 5,000-20,000 GEL in 2013-2014. In 2015-2016, in order to enhance establishment of cooperatives by smallholder farmers, the lower limit of loans was changed from 5,000 GEL to 20,000 GEL, therefore, for these last two years, the research focused on statistics for cooperatives rather than smallholder farmers.

be obtained from healthy bees and come from a reliable farm (region) in terms of bee infectious diseases. In addition, honey placed on the market should meet the safety indicators established by the legislation of Georgia, should be labeled according to the procedure defined by the legislation of Georgia and description and presentation of honey placed on the market must not mislead the consumer.

Observance of veterinary-sanitary and sanitary-hygienic norms of beekeeping

Veterinary and sanitary safety of beehives is the most important and necessary condition for the production of products in beekeeping, for which beekeepers must monitor the observance of veterinary and sanitary conditions in their beehives and regularly conduct appropriate sanitizing measures, so that the beekeeping products meet the basic requirements from a biological and sanitary point of view, do not cause dangerous diseases, and do not contain residues of veterinary drugs and disinfectants.

According to veterinary-sanitary rules, beehives should be in places where the bees will find food sources (orchards or fields surrounded by honey trees and bushes) and the probability of infectious diseases will be lower. It is desirable that the hive be protected from summer heat and winds, 500 meters away from the central road, railway station, poultry and animal husbandry and 5 km away from farms and chemical plants.

In beekeeping, preventive measures should be taken in time so that infectious and invasive diseases do not spread. It is very important that disinfectants and treatment-prophylactic means do not negatively affect the health of bee colonies. Each drug must be accompanied by instructions for use, quality assurance and a certificate of conformity, which ensures the safety of its use and excludes adverse effects on the quality of beekeeping products. The next necessary condition is the timely disinfection of the beehive, for which it is necessary to clean the hives from waste during the spring visit, replace the old heat (contaminating) material with a disinfected one. After the detection of an infectious disease in the apiary, forced mass disinfection of all skis, inventory and equipment is required. To maintain the health of bee colonies, it should be applied good agricultural practices when selecting species, it should be taken into account the ability of bees to adapt to local conditions, their vitality and resistance to diseases. It is important to renew the queen bees and systematically monitor the male bees. It is necessary to regularly replace the combs and check the cells in the hives where the honeybee bat is placed (so that such dangerous diseases as ascospherosis, varuatosis can be detected in time). Sick families should either be separated from the rest or destroyed. It should be mentioned that the used veterinary drugs must be registered in accordance with the rules established by the legislation of Georgia. The use of unregistered veterinary drugs and substances for therapeutic or prophylactic purposes is prohibited.

Food Safety and Hygiene still offers considerable barriers for growth in the sector as a whole but improvement is ongoing. Since signing the Deep and Comprehensive Free Trade Agreement, for

agriculture a main challenge still remains enabling enterprises (from micro to SME and large) to comply with requirements allowing them to trade efficiently with EU.

The Deep and Comprehensive Free Trade Area (DCFTA) is a part of the Association Agreement between the EU and Georgia, under which trade barriers between Georgia and the European Union are abolished and trade flows between the two parties are promoted. In addition to tariff liberalization, the DCFTA also implies the elimination of non-tariff measures (NTMs). The 4th chapter of the DCFTA envisages gradual approximation of legislation in the field of food safety. The lists of the relevant regulations in the field of food safety, plant protection and veterinary are published on NFA's webpage. Each regulation has its deadline for which Georgia has to approximate its legislation.

In order to be granted EU market entry, Georgian agriculture products will need to fulfill food safety requirements. Low risk food (e.g. various fruit and groceries) are simpler to enter the EU market, as opposed to high risk (e.g. meat and dairy) food. Processed and high-risk food export requires three primary requirements to be fulfilled by Georgia:

- Product ingredients need to be in line with European Union requirements;
- Exporter will need to have information on both the full chain of production, as well as on all relevant laboratory tests needed to establish safety of their products.
- A system similar to the existing control mechanisms in the EU (inspection, supervision, monitoring etc.) will need to be implemented in Georgia.

In order to fulfill these requirements, it is necessary to initiate legal and institutional approximation of the country to the EU, as per the DCFTA.

According to the Law of Georgia on food/feed safety, veterinary and plant protection code, food business operators shall have food safety procedures introduced in accordance with the principles of the Hazard Analysis and Critical Control Points (HACCP) system. The HACCP system is not required for business operators carrying out primary production.

The following certificates exist in Georgia in relation to the food industry:

Hygienic Certificate – document confirming hygiene requirements for food packaging safety.

Veterinary Certificate – document confirming veterinary safety. The certificate is issued for live animals and products of animal origin. The certificate confirms that the live animal or the product of animal origin does not contain veterinary diseases (i.e Veterinary Certificate for imports of honey in EU, Veterinary Certificate for imports of fish and fishery in EU, Veterinary Certificate for imports of gelatine in EU).

Phytosanitary Certificate – document issued for plants and/or plant products that confirms given produce fulfills safety requirements. A phytosanitary measure is a procedure used for avoiding cases of harmful quarantined organism invasion and/or spreading.

The given certificate is issued by the National Food Agency of the Ministry of Agriculture of Georgia, on the basis of relevant analysis conducted by accredited laboratories.
Additionally, the following types of certificates exist in Georgia:

Calibration Certificate – certificate for metrological calibration of measuring means or measuring instruments used in manufacturing. The calibration certificate confirms accurate functioning of the measuring instrument within the limits of the margin of error. The calibration certificate is used by the Metrology Institute of the Georgian National Agency for Standards and Metrology (GeoSTM) or a laboratory with relevant accreditation.

Certificate of Origin - in order for the goods to take advantage of the free trade regime, it needs to fulfill food origin criteria defined by the relevant protocol in the agreement. These criteria contain both the required minimal conditions for goods processing, as well as limitations on the amount of materials required for goods manufacturing, that need to be met in order for the goods to be of country-made status. EUR1 is the document certifying origin of goods for the EU market, issued by Revenue Service legal entity.

6.2 Related to Support Services

In Georgia, the Agricultural University of Georgia is one of the institutions, which gives the opportunity to get knowledge and undertake the research in agriculture sector. AUG consists of three united schools: Schools of Agricultural and Natural Sciences, Engineering-Technological School, and School of Business Administration. The School of Agricultural and Natural Sciences offers seven undergraduate programs: agronomy, biology, chemistry, food technology, forestry, animal science, viticulture & wine. Agri Uni unites the following research institutes: Institute of Molecular Genetics, Durmishidze Institute of Biochemistry and Biotechnology, I. Lomouri Institute of Crop Science, M.Sabashvili Institute of soil science, agro-chemistry and Melioration, V. Gulisashvili Institute of Forestry, Institute of Animal Husbandry and Feed Production, Institute of Tea, Subtropical institute and Tea Industry, Institute of Fruit Growing.

In Georgian, several VET institutions provide Beekeeping programs to interested parties:

Didi Jikhaishi N. Nikoladze Professional College of Agro-engineering and Food Technologies of the Faculty of Agricultural Sciences and Biosystems Engineering of the Technical University of Georgia; College Gantiadi; Batumi Shota Rustaveli State University; Ilia Tsinamdzgvrishvili College; College “New Wave”; College “Aisi”; College Shota Meskhia Zugdidi State University.

Vocational colleges

Vocational colleges rate students' interest in beekeeping as high, but at the same time, according to them, the rate of employment of their graduates in the relevant specialty is low. Colleges have to cooperate with sector associations in order to approve programs, they also sign memorandums with employers (the share of memorandums signed in the direction of beekeeping is very small), which unfortunately has a formal nature and do not play a decisive role in the employment of

graduates. Colleges evaluate the willingness of the private sector to engage in dual education as quite low. Most of the graduates (70-90%) are employed in their own households.

Quotas in beekeeping programs are filled with 100% every year, but the volume of quotas has not changed in recent years. As for the tuition fee, program is financed by the state and for each enrolled student, the vocational college receives 4,513 GEL from the Government.

The program includes both a theoretical and a practical part, which is assigned 30-40% (in most cases, the last 1 month is practice only). The program lasts 11 months and does not include the food safety and sanitary and phytosanitary norms. Food safety courses are not taught in the beekeeping program at some colleges, but are taught separately in the fruit and vegetable program. Colleges also operate short-term, 3-month training practical programs (with a 100% practical share), which are particularly popular among students. As for the age and gender structure, mostly (60-75%) men over 30 are interested in beekeeping. Most of the students are not beginners, but farmers involved in beekeeping who want to deepen their knowledge in the field. The necessary requirement for admission of students is the completion of 9th grade.

The regional coverage of vocational colleges is mostly (90%) the same region in which it operates. Colleges are less focused on online learning because it is not possible to do practical studies remotely.

Agricultural extension

The purpose of extension is to provide farmers with knowledge and information they need to farm better. This goal is reflected in the Strategy for Agricultural Development of Georgia 2015-2020 through its strategic direction to "Enhance the competitiveness of farmers and rural entrepreneurs" and the measure to "Improve farmer knowledge and information and the delivery of effective extension service support". In pursuit of this goal, in 2013 the Ministry of Agriculture of Georgia established 54 "Information Consulting Service Centres" (ICCs), one per municipality, staffed by professionals to advise and inform farmers. Since then, the Ministry has strengthened the role of ICCs in the nine regions (Telavi, Marneuli, Mtskheta, Gori, Zestaponi, Zugdidi, Akhaltsikhe, Ambrolauri and Ozurgeti) to serve as a regional Centre both for extension and for other information and policy functions. Currently, the state extension service consists of 45 municipal ICC-s and 9 regional Units.

Machinery Services

Improvement of productivity in primary production largely depends on usage of quality agricultural mechanization. Currently, the major part of agricultural machinery in the country is technically unreliable and outdated, which hinders timely implementation of agricultural activities, increases costs of production, worsens harvest quality and reduces yields.

Ltd. "Agricultural Logistics and Services Company"[4] provides mechanization services to farmers. The company's regional centers operate in almost all regions of the country. Zestaponi service center (Village Argveta) provides services to Imereti and Racha- Lechkhumi and Kvemo Svaneti, Akhaltsikhe Service Center (Village Klde) to Samtskhe-Javakheti, Abasha Service Center to Samegrelo and Zemo Svaneti.

The main directions of the company are:

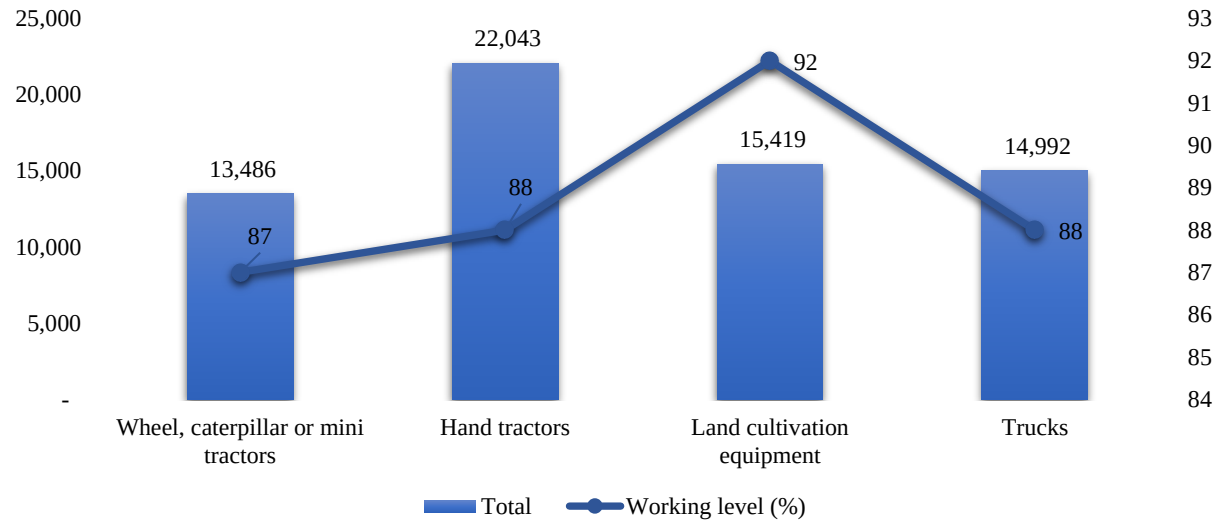
1. To serve with Agricultural techniques.

2. To inform and consult producers of agricultural products and farmers.

3. Implementation of modern technologies in producing of agricultural products.

4. Preparation of soil sowing and further works.

Figure 41. Agricultural machinery and their working level in 2014



Source: National Statistics Office of Georgia

According to the 2014 agricultural census[5], the farms own mainly the following agricultural machinery: wheel, caterpillar or mini-tractors, hand tractors, land cultivation equipment and trucks, most of which are in working order.

Organizations issuing documents

In Georgia, the main organization issuing documents and directives to beekeepers in the beekeeping sector is the National Food Agency, which is in constant contact with the relevant

[4] http://www.alsc.ge/En/ServiceCenters/
[5] http://census.ge/ge/results/agro-census

bodies of the importing countries (countries where Georgian beekeepers trying to export bee products).

Currently, Georgia does not export live bees, for which there is a particularly growing demand in the world market (especially from the USA). Currently, there is no normative act regarding live bees, therefore registration and identification required by the importing country of live bees are not regulated in this regard. A local beekeeper who wishes to export his products must first meet the disease control requirements and regulations of the country to which he plans to export his products. From January 2023, Resolution #348 came into force, the annexes of which spell out the obligations of the beekeeper and the Food Safety Agency.

The National Food Agency serves approximately 30 beekeepers annually from a veterinary point of view. As for the samples, their number is quite low: for example, last year, a total of 4 samples were submitted to the laboratory as there are cases when beekeepers do not apply to the agency and bring samples directly to the laboratory. The National Food Agency has signed a memorandum with the State Laboratory of Agriculture. As for the comprehensiveness of the testing, the basic parameters can be checked in there, although it may be necessary to send samples abroad for complete testing.

Among the many problems in the beekeeping sector from the point of the National Food Agency the standout one is the low level of education. There are many prohibited chemical preparations on the market. The field also needs additional professional labor, training/retraining of qualified veterinarians and beekeepers and raising awareness among farmers is also problematic.

The state also needs help from experts in preparing action plans. There are 2 state veterinarians in each municipalities, who are in charge of animal veterinary matters, therefore the mentioned 2 veterinarians are attached to the entire animal husbandry and in reality they cannot work for beekeepers.

Even the public service, including the National Food Agency, has a shortage of personnel in the field of beekeeping. Relations with beekeepers are also difficult for the National Food Agency, because in many cases they do not take into account the recommendations on not using unregistered meds. The two most important directions for the National Food Agency, which would improve their activities, are raising awareness among both veterinarians and beekeepers, and finding and training additional staff in terms of monitoring.

Laboratories

In terms of laboratories, one of the main players in the beekeeping market is the State Laboratory of Agriculture, who can conduct more than 300 types of honey testing (microbiological, instrumental, on the content of antibiotics and pesticides, etc.). The cost of the services depends on the types of testing: for example, 4 types of tests are conducted on antibiotics, the cost of which varies from 100 to 300 GEL. 3 types of tests are conducted on pesticides, the cost of which ranges from 85 to 390 GEL. In general, if the beekeeper is willing to carry out a complete inspection

(pesticides, antibiotics, etc.) to be able to export the honey, it will cost the beekeeper 2,236 GEL per sample.

Beekeepers apply to laboratories after they receive information from the National Food Agency about what types of requirements have to be fulfilled in specific countries (where beekeepers want to export their products) and, accordingly, what types of tests beekeepers need on take. The interviews with laboratories revealed that it is difficult for them when the beekeeper is uninformed, because the National Food Agency does not always specify to laboratories exactly what they should be checking. Customers are not aware of the technical regulation of honey and their awareness of the existing legislation is low. On the other hand, memorandums are made between the National Food Agency and various laboratories, within the framework of which a specific number of samples are tested, although not specifically in the direction of honey, but in terms of agricultural products as a whole. The online reviews conducted with private laboratories reveal that the National Food Agency periodically sends honey samples to them for analysis. As for the new regulations and statutes regarding the production of "harmless honey", a share of laboratories have not heard of these regulations, although most of them want all beekeepers to follow the regulations.

The main challenge for the laboratories is to increase the demand for their services (due to the fact that most of them test an average of 10-15 honey samples per year), to find additional funds for the infrastructure and to conduct trainings to improve theoretical and practical knowledge. Private laboratories also would like more support from the state.

Sectoral associations

For sectoral associations, the most important problem of the sector is the difficulty of finding professional labor and the scarcity of modern technologies. Beekeeping methods are also very conservative and has not been updating constantly. However, it should be noted that the technical capabilities of beekeepers are gradually improving, for example, earlier beekeepers used to pour honey into aluminum cans, which is no longer the case because it is impossible to export honey with aluminum cans. Exchange of information between beekeepers is not a problem, therefore if any news appears in the sector, if desired, beekeepers have the opportunity to learn about it. There are also lectures on potential export markets and how beekeepers should find export markets.

One of the problems is also the overemphasis on honey among the variety of beekeeping products. For example, the demand for propolis is steadily increasing in the world right now, and the price is quite favorable ($600 per kilogram). However, on the other hand, the production of propolis also requires specially arranged clamps. Also, in the last 4-5 decades, a flower pollen and propolis have received a lot of attention as medicinal products. Propolis is a natural antibiotic that has been used in medicine for a long time. It is also used to treat stomach ulcers, wounds and more as a powerful natural medicine.

As for the limiting factors for the development of the sector, it is quite challenging to treat diseases as there are not enough veterinarians and most of them are focused on the treatment of a cattle.

The sectoral associations demand that one veterinarian must be attached specifically to beekeeping in each region, although the state has not been able to fulfill this wish so far.

The logistics chain after honey extraction is characterized by a number of problems because there are only about ten enterprises equipped with modern standards on the market. In an efficient logistic chain, the beekeeper does not have to extract the honey himself. Several cities in Europe have one processing plant where beekeepers bring honey for extraction. About 3% of the extracted honey is kept by the enterprise, because beekeepers prefer to pay by giving goods. On the other hand, processing companies prepare honey for export and therefore prefer to know where the honey is extracted from. A similar practice is now taking place in Georgia day by day.

7. Conclusion and Recommendations

The research team conducted baseline assessment by using field visits, in-dept interviews and desk research. There are many opportunities for farmers in target regions to improve their levels of agricultural productivity and to achieve higher incomes. The development of business-oriented farms will enable family farms to find new market opportunities. At the same time, there will be many challenges with farms' development, especially when it comes to achieving a competitive position within a particular value chain. Baseline assessment will help the project team to see gaps and plan activities accordingly in order to increase productivity and incomes of project beneficiaries in target regions and improve results of the planned project activities.

Recommendations

Analysis of beekeeping sector in Georgia reveals that there are serious gaps on each level of the value chain and these gaps impede the industry development. Therefore, the assessment provides the following recommendations:

In order to overcome the challenges in honey production and marketing and to increase the competitiveness of this sector, a number of measures need to be implemented:

• Increase beekeeping knowledge about adoption of new technologies, diseases and parasites, flowering varieties and cycle of honey plants, food processing requirements, as well as improve their business and financial skills;

• Increase awareness of beekeepers on alternative beekeeping products such as propolis, bee venom, royal jelly, pollen etc.

• To develop priority training and education supporting programs;

• Implementation of appropriate policies that will enable this industry to achieve economies of scale in production and marketing;

• A laboratory accredited by international standards should be created, which will test honey in accordance with all international requirements;

• Honey should be inspected and a proper certificate issued by the relevant body. Honey should not be sold without the certificate;

• Consolidation or expansion of producers into cooperatives and associations should take place;

• Associations of cooperatives should be created, which will ensure the production of a large amount of honey and the possibility of export in this regard;

• Georgian honey brand should be established, which will be presented in the form of locally produced and properly packaged honey;

• Helping the private sector in the promotion of Georgian honey on international markets through the partnership of the state and private sectors;

• Special attention should be given to sharing successful practices and experiences in different countries.

A very important factor for the smooth development of the beekeeping industry is the existence of a efficient legal framework for the industry. Unfortunately, today there is no such base in the country, which significantly hinders the development of the industry. In 2002, the Law of Georgia on beekeeping was adopted, which lost its force in 2011. The purpose of the law was to protect the world-recognized, unique Georgian bee, to breed it and to improve it selectively. The main tasks were stimulation of production of bee products, effective use of bees in pollination of agricultural crops and other plants, legal provision of rights and legal interests of natural and/or legal persons employed in beekeeping.

In order to increase the competitiveness of Georgian honey, it is necessary to develop state standards for honey and other bee products, which will contribute to the production of high-quality products and reduce cases of falsification of products. The state, along with other programs for the promotion of the agricultural sector, implements the program of support for beekeeping agricultural cooperatives, within the framework of which applications are currently being accepted.

Bees are hardly used for cross-pollination of agricultural crops, when it is mistakenly established that the yield of agricultural crops increases through bee pollination: fruit yield by 60%, sunflower - by 25%. of various vegetables - 300-500%, etc.