HONEY MARKET SYSTEM

in Imereti and Racha

Assessment Report

Prepared by People in Need with support from the Czech Development Agency

Kutaisi

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1. INTRODUCTION

Georgia has a rich natural resource base for production of honey and other apiculture products. The tradition of beekeeping in Georgia is very old although the sector output started growing to the real commercial scale only after the country's independence and shift towards market economy in the early 1990s. In the recent years, the country has become one of the major producers of high quality honey in the region, however, the product remains "locked" in a part of the region (Georgia, Azerbaijan and Turkey) due to a number of reasons including its high cost as compared to the honey from Russia and Ukraine[1], and non-existence of quality control systems that prevents the product's exports to the EU and other countries with strict quality standards.

The absence of quality control is one of the many problems faced by the sector faces in Georgia. The major drawbacks include lack of necessary knowledge and skills among beekeepers, substandard veterinary and extension services, little access to capital, inadequate equipment, underdeveloped support services, limited infrastructure, etc. All these factors result in a slow development of the sector and prevent it from becoming a truly leading component of Georgia's agriculture.

Development interventions in the beekeeping sector, that are now implemented with support from the government and international donors, appear to bring considerable impact not only to the country's economy as a whole, but also tangibly improve the livelihoods of small- and medium-scale farmers, those with limited resource base and little farm output. In the mountainous country like Georgia, where an average farming family possesses only 1 hectare of arable land, beekeeping is becoming a very important alternative and environmentally sound source of income for many thousands of poor farmers.

2. OBJECTIVE

The current report consolidates information collected during ***Focus Group Discussions*** and ***Individual Interviews*** with a number of actors in the apiculture sector in Imereti and Racha. The collected information is supposed to complement the knowledge gathered through the study of Apiculture and Honey Production and Marketing Systems in Imereti and Racha Regions designed and implemented by the Czech University of Life Sciences - Prague (Faculty of Tropical AgriSciences) in collaboration with People in Need (PIN) and the Association of Young Economists of Georgia (AYEG) in 2013-2014.

That joint study suggests the picture of the entire value chain starting from all inputs into the production and ending with the end-user. As for the current report, it attempts to concentrate first of all on the opportunities and challenges that influence the poor beekeepers' access to the markets. Given the "pro-poor" focus of the report, it does not present many technical details like the description of major diseases, or operations at apiary or acceptable threshold for pesticide residues in honey since such information in more useful for textbooks rather than systems analysis and can be easily found in a special literature.

The facts and assumptions on the key influencers in the honey chain containing in this complementary report, should, together with the original report by CULSP, AYEG and PIN, ***inform***

[1] The price of honey in Armenia is similar to the one in Georgia. A considerable share of Armenian honey is marketed in Russia as an "elite" product.

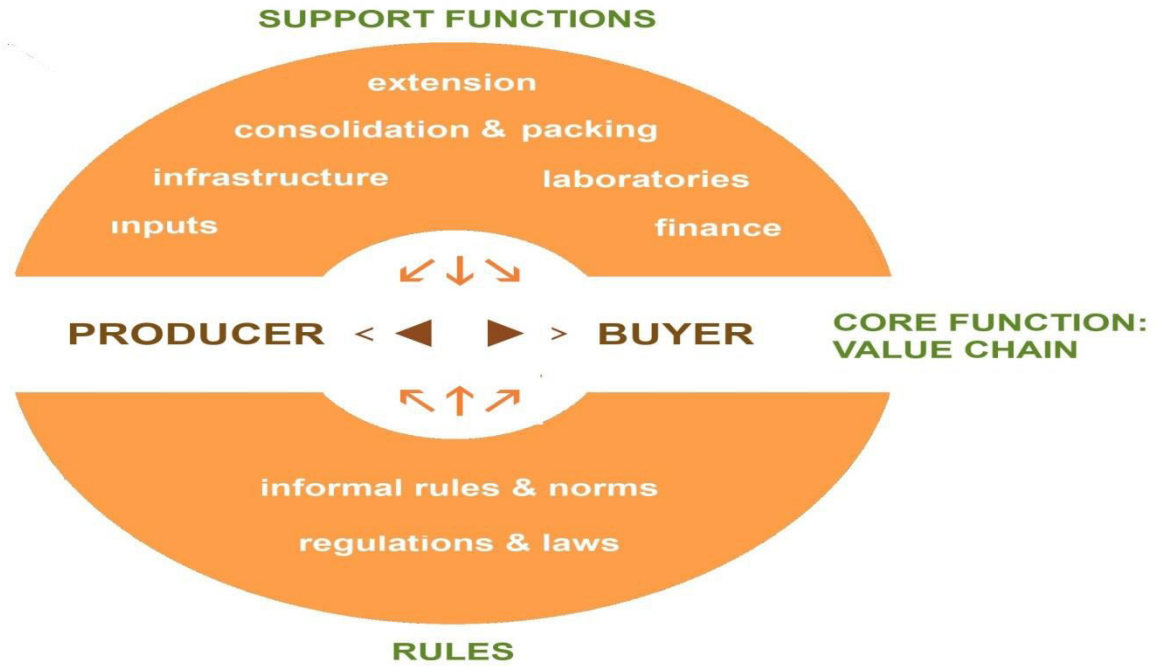
the design of development interventions aiming to bring positive long-lasting changes to the beekeeping sector whilst improving access of the poor to the markets.

The designers of current assessment tried to avoid overlaps with the initial report, some duplication of content appear to be inevitable.

3. METHODOLOGY

The experience of hundreds of development projects aiming to improve the welfare of small-scale farmers and the learning coming from the associated research shows that little economies of scale of small-holder farmers and their weak links with the markets result in reduced farm-gate prices and higher costs of labour, capital, inputs and transactions. This, in turn, reduces smallholder farmers' motivation to participate in economic transactions and keeps them in subsistence, preventing entry into market-driven production systems.

This assessment was designed with intention to look at the value chain through an M4P lens, i.e. to analyse not only the relations inside the ***Value Chain*** as a core function of the market , but also the influence of two other dimensions of markets, ***Support Functions*** and ***Rules***. The diagram below shows the relations between these dimensions as seen by the assessment team:



In order to gather the required information in an efficient manner, PIN developed three open-ended data collection instruments – each for a certain category of respondents. These were:

- Producer Discussion Guide –for both one-to-one discussions with independent beekeepers and focus group sessions with members of apiarist cooperatives;
- Trader Discussion Guide – for individual discussions with traders active in honey supply chain;
- Expert Discussion Guide – for individual discussions with sector experts;

The instruments were compiled based on the assessment methodology discussions with 3 sector experts. The format of instruments was general enough thus giving the discussions sufficient room

for any necessary departures from the themes set in the instruments. The Discussion Guides are available in the attachments 1, 2, 3.

The data collection instruments were used to learn the experience and opinions of the following informants:

- 18 members of 5 apiculture cooperatives
- 6 individual farmers – semi-commercial and commercial
- 5 Georgian wholesalers and retailers of honey and other apiculture products
- 4 sector experts from Tbilisi and Kutaisi

In addition to the above guided discussions, the assessment included a simple survey of the factors that influence selection of honey to purchase. This survey covered 100 randomly selected end-users of honey in Kutaisi, Zestafoni, Terjola and Tskhaltubo.

The assessment also included brief review of legislative acts associated with quality of honey, its production and trade. This review was supported by 2 experts from the National Food Agency (NFA) of the Ministry of Agriculture.

The selected methodology had two major limitations. These were:

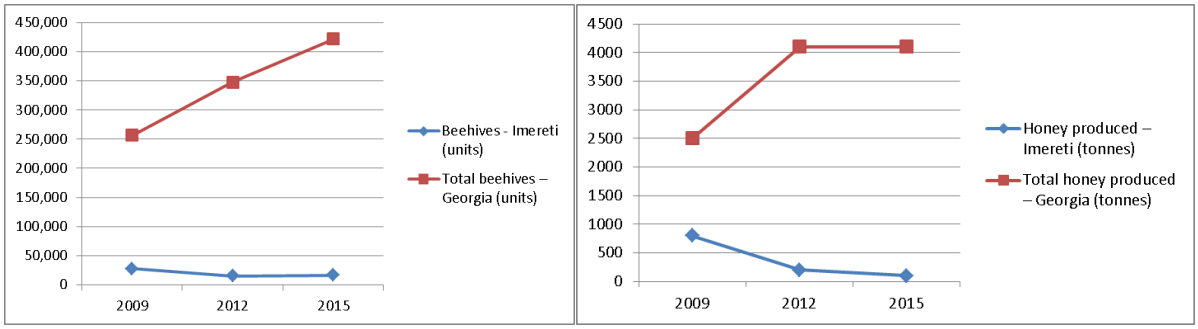
a) A relatively small pool of respondents - this did not allow generation of any quantitative information.
b) A limited geographic coverage – the informant beekeepers represent only seven ENPARD/PIN target municipalities that is roughly half of the total area of Imereti and Racha. The assessment did not learn the opinions and experiences of beekeepers in eight municipalities of Imereti and Racha/Lechkhumi where the ENPARD/PIN project doesn't work or where the project has no networks among apiarists.

4. CORE MARKET

National and Regional Production Data

According to the Geostat (National Statistics Office of Georgia), the overall multi-year dynamics in honey sector in the Imereti region is negative. The region's dynamics doesn't correspond to the overall increases in the numbers for beehives and honey produced across the country. Once a producer of nearly 32% of the country's honey output (800 MT of 2500 MT in 2009), Imereti reportedly became one of the sector's outsiders with its 2.5% share of the output in 2015. The table and diagrams below present the trends in more detail:

	2009	2012	2015
Beehives - Imereti (units)	27,600	15,200	16,700
Total beehives – Georgia (units)	256,500	347,500	421,500
Honey produced – Imereti (tonnes)	800	200	100
Total honey produced – Georgia (tonnes)	2,500	4,100	4,100



Although largely confirming the sector's decline in Imereti, many of the assessment informants have an impression that the data by Geostat is imprecise, especially for year 2009. It is believed that both the numbers for beehives and honey output in Imereti in 2009 are overestimated by at least 50-60%. In any case, it is simply impossible to accept as true the fact that the region's average output per beehive was approx. 29 kg in 2009. This number can be seen as somehow realistic for a highly professional beekeeper in a good year but absolutely impossible as an average for the region with a variety of agro-climatic conditions and very diverse technical capacity levels of beekeepers. Another question is about the numbers of beehives as production units – how could it happen that the number of hives in Imereti dropped by 45% in the period from 2009 to 2012 whilst at the country level, during the same time interval, the number increased by 35%? The assessment informants believe this is a blunder by Geostat because no other explanation can be given to such a steep drop in numbers.

The basic numbers on beekeeping in the Racha region are not available in the open publications by Geostat – this is probably due to the relative "insignificance" of Racha when compared to Imereti in terms of the population (22,000 persons in Racha's two municipalities versus 507,000 persons in rural Imereti) and overall agricultural output. Therefore, the assessment relies on the numbers roughly estimated by the assessment informants. According to the informants, in the period between 2012-2015, there were some 6,000-7,000 beehives in Racha and the region's average honey output per year was approx. 70-75 tonnes.

Types of Honey

Processing-wise, honey from Imereti and Racha can be divided in three major forms:

- *Liquid honey* is prepared by cutting the wax cappings and removing honey from the combs using honey extractor. Honey of this type can be packed in any type of container. This product is most widespread and occupies some 96-98% of the total volume of honey at the internal market.
- *Comb honey* is the product left in wax combs and sold to be consumed together with comb. The combs are usually cut off from the frames and then cut out in chunks before packaging. Such honey is usually put in wide-mouthed containers.
- *Chunk honey* represents a mixture of comb honey and liquid honey. The beekeepers just pour liquid honey over the comb honey stored in a jar. Both the chunk honey and comb honey have a small market niche and are usually sold at farm-gate and local markets.

Nectar source-wise honey can be divided into two general groups: *Polyfloral (multi-flower) Honey* and *Monofloral (single-flower) Honey*. The polyfloral honey (also called wildflower honey) is

produced by honey bees using nectar from many different flower sources. The taste and colour of honey depends on the composition of species of flower plants in the area of nectar collection.

Alpine honey[2], considered the most valuable polyfloral honey by many buyers, is not a very common type of honey in Georgia. The market demand for this product is growing as the increasing number of customers wants to buy the "most pure mountainous" honey. Alpine honey is quite rare in Imereti and Racha due to the specifics of landscape of the two regions. It can be collected only on the northern slopes of Meskheti Gorge (Bagdati and Vani districts) and the areas of Shkmeri, Mravaldzali and Ghebi (Oni district) where the flora is predominantly alpine.

Many specialists believe that alpine honey from several locations in Georgia, including Imereti and Racha, can claim for the organic label. However, nobody from the Georgian beekeepers using only organic methods of disease control and placing their apiaries in alpine areas, has invested money into the required surveillance, inspection visits, laboratory tests and certification[3] needed for securing the label. The reasons for that are quite obvious – the market for honey in Georgia is unsaturated and there is no need to invest significant resources in the endeavour with unknown results.

The most common types of mono-floral honey in Imereti and Racha are: *chestnut honey, linden honey, and acacia[4] honey.* There are very few chestnut forests in Racha so the chestnut honey is not very common in this region. However the chestnut honey is usual in Kharagauli and Tkibuli of Imereti region. This type of honey is popular among Turkish traders who are ready to pay a premium for it. This honey is also one of the favourites for Georgian buyers.

The linden honey is quite popular among Azeri traders since it is widely used in Azerbaijan for making various sweets, sherbets and herbal teas. The acacia honey is considered "regular" and it usually costs less than chestnut and linden honey. One can also find so-called *goldenrod honey* in Imereti - it is intensively collected in the lower parts of the region in late autumn. This honey has low market value, so apiarists use it for preparation of winter feed for bees.

Productivity

Numerous factors influence productivity of bee colonies which include but not limited to: weather, health of bees, their genetics, apiary management and quality of inputs, access to feed, type of beehive, size of the colony, transhumance, etc.

The productivity averages in Imereti and Racha are quite similar. The output of beehives run by commercial apiarists is usually higher than this of beehives belonging to small-scale, semi-commercial beekeepers. There many reasons for that – commercial apiarists have stronger apiary management skills and technical knowledge, use more effective inputs, keep their bees healthy, have better opportunities for transhumance, etc.

Since weather is one of the most critical factors, the productivity of colonies belonging to one beekeeper may fluctuate significantly from year to year. If we take a notional five-year time interval,

[2] Alpine honey is a variety of polyfloral honey that is made by bees at alpine fields

[3] The Tbilisi-based company CAUCASCERT Ltd has been accredited for organic certification according to ISO-17065 by the German accreditation body DAkkS since 2008. It has been included in the list of third-country equivalent organic certification agencies since 2011. Up to now the company services have been provided to some 30 winemakers and collectors of wild plants and few other agribusinesses.

[4] According to the experts, the vast majority of trees that are called Acacia in Georgia, belong in fact to the specie False Acacia (Robinia pseudoacacia)

it would consist of one good year, three "regular" years and one bad year. With such a division, the productivity marks for an average strong beekeeper would look as follows:

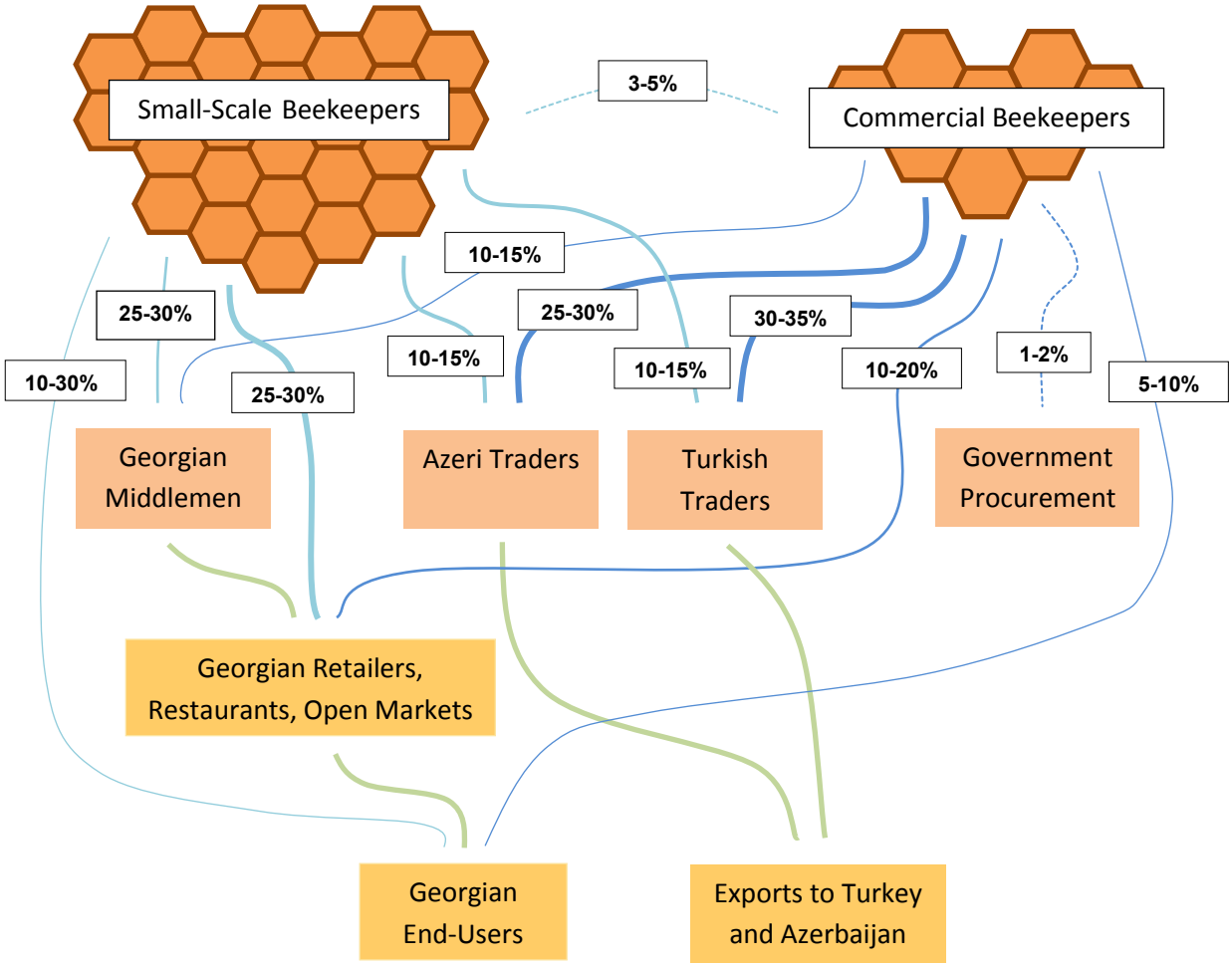
- One good year: 35-42 kg of honey per beehive;
- One bad year: 10-12 kg of honey per beehive;
- Three "regular" years: 20-25 kg of honey per beehive per year;

The yield marks for the apiary of a semi-commercial farmer are usually lower by some 25-30%.

Both in Imereti and Racha honey is harvested twice per season. Three harvests are possible, but this happens rarely. In Imereti apiarists harvest acacia honey in May and chestnut honey in June. When circumstances permit, beekeepers from Imereti move to Racha in July to collect nectar from linden flowers. In Racha the yield of acacia honey is harvested in May and then the yield of linden honey in July. The second harvest is usually higher than the first one.

Honey Market Chain

As discussed in the CULSP/AYEG report, the honey market system chain in Imereti and Racha (as well as the entire country) is relatively simple - in many cases there is no more than one middleman between beekeeper and the end consumer within the country. However, given that the trade patterns for smaller-scale and larger-scale beekeepers are getting increasingly diversified over the course of time, we suggests a new and slightly more detailed honey market system chain diagram for the Imereti- and Racha-based producers:



All honey producers can be conditionally divided into two broad categories – small-scale semi-commercial beekeepers, or those who generate no more than 50% of their income from beekeeping activities, and larger-scale commercial beekeepers, or those with more than 50% of income generated through beekeeping. The semi-commercial beekeepers usually possess from 10 to 80-100 beehives, while the commercial beekeepers operate no less than 80-100 beehives. A relatively smaller share of commercial beekeepers operates more than 200 beehives. The commercial farmers often have to hire seasonal labour since one person, even with some support from family members, can't look after more than 120-150 beehives without external assistance. The number of small-scale beekeepers with less than 100 hives is estimatedly making up to 1,300 in both Imereti and Racha[5]. This is approx. 90% of all beekeepers in the two regions. The number of beekeepers owning more than 100 beehives in both regions can be estimated as 150 (or some 100 in imereti and some 50 in Racha). They make around 10% of the entire apiculturist community in the target area.

The share of commercial farmers appears to be steadily growing in the recent years, particularly due to the support provided to the sector by ENPARD programme and the government-sponsored capitalization projects that, through building of farmer cooperation, capital support and technical assistance, facilitate transformation of non-commercial and semi-commercial beekeepers into the commercial ones.

Differing from each other by the number of beehives, the small-scale and the commercial beekeepers also occupy quite different market niches. As it can be seen in the above diagram, the commercial producers sell from one half to two thirds of their honey directly to Azeri and Turkish middlemen that are the major "exporters" of Georgian honey. These intermediaries prefer to deal with commercial apiarists since the latter are able to supply honey in larger quantities – this means less effort in consolidation of the product plus, in some cases, tangible discounts.

Reciprocally, the commercial farmers favour working with Azeri and Turkish middlemen - these usually pay in advance or at the site and are able to buy the entire yield or a large share of the yield. Dealing with Georgian intermediaries is a less preferred option since the majority of these traders usually buy smaller quantities of honey and offer transactions in tranches. As a rule, the Azeri and Turkish middlemen buy honey from the producers they know and do this "at farm gate". The reports on honey transactions from Georgian intermediaries to Azeri and Turkish traders are relatively infrequent.

Turkish traders usually prefer chestnut honey whilst Azeris favour linden honey. Georgian customers are less selective about the type of honey however the more sophisticated buyers are often ready to pay premium for alpine honey produced in the high mountains from the nectar of dozens of alpine plant species.

The commercial beekeepers sell from one third to one half of their honey to Georgian middlemen, retailers, caterers, and directly to end-users. The buyers usually work with producers they know and the deals are often negotiated in advance.

As for the small-scale beekeepers, they sell more to the local customers rather than to Azeri and

[5] This assessment does not cover thousands of farmers in both Imereti and Racha that keep several beehives at their farms, mostly for supplying honey to their households and close relatives. The beekeeping activities of such farmers can't be considered even semi-commercial due to very small quantities of honey harvested and virtually no income generated.

Turkish traders. The Georgian middleman, market retailers and end-users (they all prefer purchases from the primary source, “at farm-gate”) buy approx. 70-80% of the honey produced by the small-scale beekeepers. A proportion of honey is taken to the open markets but the volume of sales through the markets and shops in Kutaisi, Zestafoni, Samtredia, Ambrolauri and other urban centres of Imereti and Racha is limited since the buyers have no personal knowledge of the traders and often believe that “stranger” traders will sell them adulterated product.

One find from the discussions with informants that deserves a special attention is the emerging honey transactions from small-scale to commercial farmers. This is not a completely new direction for honey trade - larger farmers were making ad hoc purchases of honey from small-scale beekeepers in the past, but the transactions were infrequent as the capacities of larger scale beekeepers to consolidate honey from various sources were extremely limited.

As a result, small-scale apiarists have to “fragment” their trade operations and deal more with individual buyers and retailers. The recent improvements in equipment base resulting from ENPARD project interventions are giving smaller farmers better chances to make their operations more cost-efficient – through their improved access to the processing equipment as members of agricultural cooperatives or external suppliers and clients of the cooperatives.

Exports

Turkey does not accept the Georgian honey legally and virtually all the honey that moves to this country from Georgia is smuggled. Similarly, there is no Georgian honey at the European markets. This is despite the fact that Georgia has a quota for honey trade with Turkey as well as with the EU. The main reason for the product’s non-acceptance is the absence of internationally recognized quality control and certification systems for honey in Georgia. The current level of certification of honey in Georgia is sufficient for cross-border transactions with Azerbaijan, however, it is cheaper and logistically easier for Azeri traders to smuggle honey into their country, thanks to the porous border. As a result, the volume of legal exports of Georgian honey to Azerbaijan does not exceed 2-3 tonnes per year.

Due to the illegality of cross-border transactions of honey, the government does not possess any data on the exports of the product. The sector specialists’ rough estimates on the volumes of the Georgian honey trafficked into the two neighbouring countries range from 1,800 to 2,800 tonnes/year. No estimates were made for Imereti and Racha.

There were few reported cases in the recent years when the small quantities of Georgian honey were certified in the EU countries and then sold at the European markets. The scale up of such operations appears to be impossible given their little cost-efficiency. Several exports to Saudi Arabia, China and South Korea were reported in the recent years however they can be neglected due to the very small volume of transactions (up to 5 tonnes in 2014).

As for the exports to other countries in the region, such as Russia and Ukraine, they are virtually non-existent since the Georgian honey is considerably more expensive than honey from these countries. According to the beekeepers and traders interviewed through the current assessment, none of them has ever heard of their honey deliveries to non-regional (Georgian, Turkish and Azeri) markets in commercial quantities.

Imports

The value of imports in 2015 was 99,000 US$ only. Given such a little value, the experts believe that virtually all imported honey was: a) certified liquid product in small containers (100-300mg), mostly from Europe - for relatively the higher-end hypermarkets like Carrefour or Goodwill, and b) liquid honey in individual containers (9-20mg), from Turkey, Poland and Germany, for mid- and high-level hotels and coffee-shops. Such honey usually costs from 25 to 50 GEL per kg.

Production Costs

The cost of production of 1 kg of honey ranges roughly from 3 to 4 GEL, depending on the professionalism of beekeeper, health of bees, scale of production, cost and quality of inputs, equipment and services, weather conditions throughout the season, etc. In many cases, the cost of production per unit of product is higher for small-scale apiarists however this is somehow compensated by the higher prices in retail trade that is a usual niche for small-scale farmers.

Sales prices

The prices vary significantly and depend on the following factors:

- Type, taste and color of honey - chestnut, linden and alpine honey are valued higher because of their rich flavor;
- Origin – honey from mountainous areas with no or little population is always more expensive;
- Quantity – small retail purchase may cost up to 200% more than the wholesale transaction;
- History of supplier-buyer relations – the buyer is ready to pay more to the supplier he knows;
- Location of transaction – the farm-gate deals are usually the most inexpensive as the supplier does not bear any transportation costs;
- Number of intermediaries – buyers pay more when there are more intermediaries between them and the beekeepers;
- Product appearance – the crystalized or “cloudy” honey costs less than the transparent liquid one;
- Packaging – honey in a plastic container may cost less than in a glass or metal jar;
- Time of sales – honey is cheaper immediately after the harvest in summer and/or autumn;

Depending on how the above factors are combined, the real prices for honey vary between 10 and 25 GEL/kg[6]. The summary of anecdotal information about the honey prices is presented below:

- Turkish or Azeri trader paid 10-12 GEL/kg when buying more than 500 kg at farm gate in autumn 2015, right after the honey extraction; A similar transaction made in late December costed an Azeri trader 15 GEL/kg.
- When an urban resident, while visiting a country-side, decided to buy 10 kg of good quality honey from the “friend of her “friend”, she was asked to pay 15 GEL/kg;
- A bakery from Kutaisi paid 12 GEL/kg when buying 50 kg of medium quality honey from a middle-man;

[6] There were reports about some small-scale deals with the cost of 30 GEL/kg, however, such deals appear to be extremely rare.

- One of the assessment informants sold honey at the rate of 25 GEL/kg when presenting his product in 250 ml jars at the Tbilisi AgroExpo in November 2017;
- The honey produced by another informant is on sale in a specialized shop in Tbilisi at the rate of 17-25 GEL/kg, depending on the type of honey;

The relatively high price for honey can be explained by the fact that the demand for the product exceeds the supply. As the prices for good quality honey can go above 9-10 US$ per kilogram in Azerbajan and Turkey (the two countries estimatedly import 40-60% of the total amount of honey output of Georgia), the Turkish and Azeri traders can easily afford to pay 4.5-5 US$ per kilogram to the Georgian beekeepers. This makes the commercial beekeeping in Georgia a lucrative business, however, there is one concern related to the predominantly Turkish and Azeri directions in honey trade. Many sector actors believe that once the door for exports of honey to Europe is opened, very few Georgian apiarists will be utilizing the new opportunity since the "regular" honey in Europe is cheaper than in Turkey and Azerbaijan. There will be simply no incentive to sell honey at the European markets when Turkish and Azeri traders pay more and do not ask to go through the costly quality check procedures.

While meeting with the informants, the assessment team members heard some opinions that the reliance on the Azeri and Turkish directions is dangerous, since the markets in these countries can collapse for this or that reason one day. The reliance on two import destinations only bears some risks indeed. However the fears appear to be largely unfounded given that the economies of the two neighbouring countries remain quite stable, and that "Gürcü Bal"[7] keeps its good reputation among Turkish and Azeri customers.

Incomes

Beekeeping is, with no doubt, one of the most profitable agricultural activities in Georgia. The profit margins can exceed 150%, thanks to the high demand for Georgian honey in Turkey and Azerbaijan which results in really high market price of the product. The net income of a farmer with 200 beehives can be compared to the net income of a vegetable farm based on 4-5 hectares of irrigated land. With the "regular" season's average of 20 kg of honey per beehive and a minimal net profit of 6 GEL/kg, an apiculturist operating some 200 beehives makes around 24,000 GEL (i.e. 200 beehives X 20 kg honey X 6 GEL/kg). Another 7,000-15,000 GEL come from the sales of other apiculture products such as pollen, propolis, beeswax, bee venom, royal jelly and queens. Such beekeepers consider themselves "professional" farmers as they are able to invest a tangible share of their income into the growth and expansion of their farms.

A semi-commercial farmer with, say, 50 beehives and the yield of 1000 kg of honey, makes in a "regular" year some 6,000 GEL profit from the product sale[8]. However the gains from the sales of other apiculture products is relatively low, varying from 1,000 to 2,000 GEL, due to the fact that the traders can be uninterested in small small-scale deals and the sales of small quantities of pollen or

[7] Georgian honey in Turkish language

[8] Small producers make the same net profit from a kilogram of honey as the larger ones. The operational costs of small-scale apiarists are higher due to the economies of scale, but their income per kilogram is also higher prices due to predominantly retail character of sales.

propolis may have little cost-effectiveness.

6. SUPPORTING FUNCTIONS

Inputs

The beehives of Dadant-Blatt type are the most common in Imereti in Racha. It is estimated that 95% of beehives in the two regions are of this type. The larger-scale farmers who possess proper skills and run wood processing workshops, make the beehive bodies and frames themselves. Those with no access to wood processing equipment have to pay from 110 to 130 GEL for each beehive body. In the recent years, various suppliers started introduction of so-called Langstroth beehives that cost roughly the same as Dadant-Blatt hives but are more convenient for treatment of hives against diseases and more productive. The material for all current hives is wood, however in 2015 the apiarists in Imereti and Racha were introduced beehives made of polystyrene that are relatively expensive (200 GEL/unit) but provide good thermo-isolation to bee families both in winter and summer. On the whole, beehives available across the country are of sufficient quality and affordable for all beekeepers.

New honeycombs are available from at least two shops in Imereti (Kutaisi and Samtredia) where the combs are stamped. There are no honeycomb shops in Racha so the region's beekeepers usually source the input from Imereti or East Georgia. Usually beekeepers trade beeswax for honeycombs however, if one needs to buy honeycombs, he pays 20 GEL for one kg of the material. Some of the larger farmers possess the equipment to extract and filter beeswax, but so far nobody from the beekeepers has got the equipment for honeycomb stamping. Some beeswax is also imported from Turkey and Ukraine . Although the imported material is cheaper than to local one, the experienced beekeepers prefer to use exclusively material of Georgian origin. They believe that the imported beeswax is somehow adulterated. The available honeycombs appear to be of acceptable quality and price as nobody from the assessment informants expressed any meaningful dissatisfaction with the current status of supply of honeycombs. According to the informants, most advanced of the suppliers use the thermic treatment method (5 minutes /120^{O} C) to kill all harmful micro-organisms in beeswax.

Other critical inputs such as extractors, special clothes, smokers, brushes, knives, etc. are available through special shops in Kutaisi, Tbilisi and Batumi[9]. For some of the informants the prices for this category of basic inputs appear to be reasonable, whilst other informants (roughly a half) believe that the prices are high given the low quality of the equipment and accessories.

From the processing equipment, honey extractor is the most critical device for a beekeeper of any calibre. The most inexpensive extractors come from Ukraine and cost some 450-500 GEL per unit. They are made from aluminium, wood and plastic. Such extractors appear to be appropriate if the honey yield does not exceed 300-400 kg (this is honey from 18-20 beehives) however, because of the low speed of extraction, they become ineffective when the beekeeper has to extract more than 500kg. This is not the only weakness of inexpensive extractors - according to the informants, such devices lack durability. This limits their cost-efficiency in the long-term perspective.

[9] A Tbilisi-based company is planning to open a shop for beekeeping inputs in Ambrolauri in spring 2017.

More expensive, more reliable and more productive extractors are beyond the financial limits of small-scale apiarist. They are lucky if there is a commercial beekeeper with professional extractor in their village who provides extraction services for a fee, otherwise they have to struggle with ineffective "amateur" extractors. It should be also mentioned that the extractors made from stainless steel[10] may become compulsory for food safety reasons in the near future.

The so-called "consumables" such as bee health products are also available in Kutaisi and other larger urban centres across the country. While discussing the status of input supply, virtually all informants expressed their dissatisfaction with the quality of some medicines. They all have experience of using the pharmaceuticals that not only bring no benefit but may even kill the bees. The "fake" or just outdated medicines can be bought both from the accredited and non-accredited shops that often buy the medicines indiscriminately from all kinds of distributors – both the honest importers of quality pharmaceuticals from international brands and the "re-packers of bulk deliveries" from Russia, China, Iran, etc.

Acknowledging that in many cases the reason for failure of this or that remedy can be its incorrect application, nearly all informants believe that the solution to the problem is in the establishment of government monitoring of the quality of vitamins and medicines imported to and then sold in Georgia. It was also said at a number of discussions that the government should develop more strict standards for the quality of written user instructions attached to medication.

Given that increasingly more beekeepers strive towards using medicines of biological, non-chemical origin, the suppliers are also making the shift. The two most popular biological remedies not only in Imereti and Racha but across the entire country are Ecostop (for prophylaxis and treatment of varroatosis in bees) and Nosestat (for the treatment and prophylaxis of the nosematosis)[11]. Both medicines are made in Bulgaria and meet all EU quality standards. They are more expensive than the traditional "chemicals", however, the professionally advanced beekeepers appreciate their positive impact on the quality of honey and do not complain about the price.

Georgia can legally import only pharmaceuticals that are registered in the EU (most of them are of the EU origin), plus 11 medicaments (mostly of the Russian and Ukrainian origin) that are listed in the national register. The national register is short because the registration costs are excessively high for the small market of Georgia. This is the reason why the traders often seek low-cost illegal channels to bring the non-registered medicines to Georgia.

Consolidation, Processing and Packaging

Extraction of honey from honeycombs is a key step in the product processing. As the most widespread cheap models of extractors are slow and get broken quickly (plus they often fail to meet food safety standards), the extraction process becomes ineffective and troublesome exercise for the majority of beekeepers. A sufficiently durable and powerful centrifugal extractor made of stainless steel is often unaffordable for the majority of apiarists.

Post-extraction filtering of honey to clean it from wax, dirt and bee parts is another uneasy but necessary step in preparation of the product for the market. The main technological trick in this process is to clean honey from all the impurities but not lose any of the pollen in honey that is a

[10] The relatively cheaper ones cost 5,000-6,000 GEL

[11] Varroatosis and nosematosis are the most widespread bee diseases in Georgia. Acarapis woodi and viruses are not the main threats for beekeeping in Imereti and Racha.

great source of proteins, micro-elements and vitamins[12]. The traditional method of honey cleaning is to let wax and other particles settle out. Application of this method takes time, from 2 to 4 weeks, depending on the types of jars used and the amount of honey to be processed. The method of warming honey up (to improve fluidity of honey) and running it through a separator is more effective and saves a lot of time, however the equipment for heating and separation is quite expensive for small beekeepers.

Some of the larger beekeepers have processing equipment of capacity that is sufficient for dealing with 2 or 3 tonnes of honey they usually harvest from their beehives, however, in many cases the equipment is not powerful enough to provide timely(!) extraction and filtering services to the neighbour beekeepers. There are three or four really large-scale apiarists in Imereti and Racha who provide commercial processing services but they can deal only with a little share of small-scale beekeepers. These processors are also engaged in consolidation and marketing of honey from small-scale beekeepers.

A "classic" example of such a service is consolidation of small farmers' honey by a large-scale beekeeper in Khoni who then processes the product, blends it with honey from his beehives (when necessary) and sells to his customer wholesalers. The deal is beneficial for both the "processor" and his fellow farmers. The large-scale beekeeper gets additional income from the processing and marketing whist his fellows not only easily get their yield easily processed and sold but in some cases also paid premium from the gainful deal with traders. The small-scale beekeepers that have their own client base, just pay the processing fee and take their honey back, extracted and filtered.

In most cases, the packaging of honey is done by hand. Wholesalers usually come to the beekeepers with their own 20-50-100 litre barrels, and the retail customers buying at farm gate also bring their own jars. When supplied to the local markers and shops, honey is poured into 100 to 1000-gram glass or plastic containers. Proper labelling of honey is very rare, it is done only for honey that is supplied to larger shops and supermarkets. The packaging in small individual containers (sachets, plastic blisters or glass mini-jars) is non-existent in the entire country and the niche for honey in individual packs is fully occupied by imported product.

Breeding

The majority of beekeepers breed bee colonies (or families) on their own however those who need to quickly increase the number of bee families or recover the losses from devastating diseases, buy new colonies from other beekeepers. The price of one family ranges between 100-150 (for a small family) and 250-300 GEL (for a large family). The apiarists also keep a number of queens separated from family in order to substitute old queen when necessary (ideally every year, or in case of death of old queen, decline in egg-laying capacity, etc.). The queens for sale are available in many locations across Georgia. They usually cost 20-30 GEL per animal. Some apiarists focus on commercial breeding of queens as a good supplement to honey production. The opinions of the informants about the status of bee breeding in Imereti and Racha were split – some of them believe that the quality of queens for sale is often sufficiently good so this material is bought by some honey traders and then smuggled to Turkey, while others believe that Caucasian Grey Honeybee has genetically degenerated as a result of uncontrolled cross-breeding with Caucasian Yellow Honeybee.

[12] Pollen ratios are used these days to identify if the honey has been altered or blended.

Like in other parts of Georgia, these days there is no capacity for targeted (or artificial) breeding in Imereti. According to the assessment informants, the attempts of artificial selection in bees made recently in Ajara and Samegrelo (Mukhuri in Samegrelo region) have not brought any promising results yet.

Information and Knowledge, Veterinary Services

The system for registration of beekeepers and control of bee diseases does not exist in Georgia. The related veterinary services and technical advice are hardly available as the staff of municipal and regional Information and Consultation Centres (ICCs) do not have any special education in beekeeping. It would not be an exaggeration to say that many amateur apiarists know the beekeeping techniques better than their extensionists. Although more than three years have passed since the establishment of ICCs in 2013, the system of apiculture support services within the centres was never set up and appropriate cadres were never developed. The ICCs in Imereti and Racha are not the exception as all regions of Georgia face severe shortage of apiculture experts who could be employed by the centres. The private veterinary services with a focus on beekeeping do not exist in both regions.

The feebleness of the apiarists, veterinarians and extensionists in front of numerous diseases and other bee care challenges, results in widespread obsolete production practices, ineffective use of medicines, reduced productivity, vulnerability to diseases and, ultimately, death of bees.

The most advanced apiarists in Imereti and Racha often use their personal contacts for receiving necessary advice from the experts from Georgian Professional Beekeepers' Association, Georgian Agrarian University and other academic institutions in Tbilisi. Small-scale farmers often do not have such contacts and are relatively more affected by lack of knowledge. Another solution to address the gaps in knowledge is the exchange of information among beekeepers themselves.

In summer 2015, the national TV channel Ertsulovneba launched an educational program for beekeepers. By summer 2016, the channel delivered more than 30 lectures to its audience. At least 30 more lectures are in the channel's pipeline. The technical advice on beekeeping is also available through programs of other national and regional TV channels and online from non-profit farmer education facility Mosavali.

A valuable contribution to the building of technical capacity of apiarists was made by ENPARD / Cooperative Development programme that, through the subsidiary projects implemented by PIN, Mercy Corps and CARE, covers all municipalities of Imereti and Racha. Thanks to the programme, beekeepers from selected cooperatives have regular free access to the advice from the best apiculture experts in Georgia. This advisory service will be available until the end of 2017. Based on the experience of other technical support projects in rural Georgia, one can have only reserved expectation that the farmers, small or medium-scale will allocate sufficient resources to pay for the services of expensive specialists from the capital. Seemingly more sustainable contribution to the technical capacity building of beekeepers will be made by PIN's TVET project that, in cooperation with UNDP, is starting delivery of special training courses in beekeeping to the staff of ICCs in Imereti.

Business Development Services

In addition to Tbilisi and Kutaisi, business development services are available in several larger towns

across Georgia such as Akhaltsikhe, Batumi, Gori, Telavi and Zugdidi. The services are often subsidized by international donors. The quality of the services, such as business planning or establishment of accounting system, is usually sufficient when the service is provided to small enterprise or medium enterprise. In spite of this, the vast majority of semi-commercial and commercial beekeepers do not use the services as they do not appreciate the importance of proper business planning, accounting, record keeping, networking along the supply chain, etc. According to the assessment informants, most of them used the services only when there was a need to prepare loan or grant application.

Transhumance

The transhumance in beekeeping means moving bees from lower to higher elevations in spring and then moving them back to the "base" in autumn. This movement to the high altitudes is done in order to follow the flowering of plants and provide the bees with the stable access to nectar. The return back is necessary for reducing the impact of cold weather in autumn and have unlimited access to beehives for all inter-season services. In some cases, for the winter season, the bees are taken to the locations that are warmer than the "base". For example, some beekeepers from Racha transport their bees to lowlands of Samegrelo and Guria in autumns and then back to Racha in spring. This is done to reduce the energy needs of colonies and keep them sufficiently strong for the spring season.

Beekeepers do not need to pay fees to land owners for setting up temporary apiaries at the owners' territories unless the apiary is very large. However, there is a tradition of coordinating the transhumance migrations with local population so the interests of locals are respected.

The most common spring transhumance destinations for apiarists from Imereti are highland areas of Ambrolauri, Tskaltubo, Bagdati and Vani municipalities. In the recent years, the influx of beekeepers from Imereti to Racha became so massive and uncoordinated with apiarists from Racha that the latter are now asking the regional government to facilitate the coordination in future, and, if necessary, establish a kind of quota system for the "guest" apiarists.

The transportation of beehives is done with trucks or mini-trucks with trailers that are owned or hired by apiarists. Depending on the quality of road and the loading limits, from 40 to 160 hives can be carried in one trip. The cost of the service is calculated based on the distance to be covered and the physical status of the road to be travelled. The apiarists from Ambrolauri told PIN that truck drivers in the region charge from 2.5 to 4 GEL per kilometre of travel distance, regardless of the size of load. Due to the deficit of trucks that can carry beehives, the service rate is high and often barely acceptable for a small apiarist with his 20 or 30 beehives. It should be also mentioned that the roads to best transhumance destinations are usually bad.

The risks of keeping bees away from the "base" are numerous. The most dangerous in terms of bringing damage to the bees is communicable diseases that can be easily spread in the areas heavily occupied by migrating beekeepers. In mountainous areas, close to the wild forests, the apiaries should be protected from bears. In order to watch, and if necessary, "protect" the bees, the apiarists either stay with their beehives at the summer migration locations or hire local residents to deliver the service. The guarding by locals costs from 1 to 2 GEL/hive/month.

Infrastructure

The rural infrastructure of Georgia has improved significantly over the last decade. Many secondar roads have been rehabilitated and the supply of electric power and natural gas to a number of villages in Imereti and Racha is virtually uninterrupted these days. The assessment informants believe that the major infrastructural challenge that they face these days is poor access to many good transhumance destinations. As a result, such places often stay unused by beekeepers whilst the easily accessible destinations are "overcrowded" and contribute to the spread of contagious diseases.

Capital

In the recent years the Government of Georgia launched two massive initiatives aiming to support capitalization of Georgian agriculture and food processing sectors - these are "Preferential Agro-Credit" and "Produce in Georgia" programs. According to various reports, the rate of farmers and rural entrepreneurs who benefited from the two programs is lower than initially expected. Although the government subsidizes interest rates for loans under these programs, the money remains largely inaccessible to small and medium-scale farmers as banks do not want to deal with insufficiently liquid collateral such as agricultural land, buildings in the rural areas, agricultural machinery, etc.

Some types of agricultural credit are available from MFI's like Credo and Finca however the size of loans from such institutions, as well as the terms of repayment, can't support any meaningful investment in growth and expansion of farms and agribusinesses. The participants of discussions held under this assessment recalled only few cases when the financial institutions lent relatively large financial resource (few dozen thousand GEL) to beekeepers in Imereti and Racha. The PIN-supported cooperative "Natural Products of Racha" is one of the very few lucky borrowers - in summer 2015 it received a 37,000 GEL loan from TBC Bank. The loan term is 18 months and the borrower pays only 4% interest rate per annum. The remainder of the interest rate, 11%, is covered through the government-run "Preferential Agro-Credit" program.

Laboratories

The laboratory of the Ministry of Agriculture that is supposed to be responsible for checking the quality of honey, as well as other outputs of farms and processing industries was officially established in September 2015. The laboratory is conducting virtually all required tests associated with the chemical and physical parameters of honey, however, it remains unprepared for conducting the full set of pesticide and medicine residue checks that are necessary for supporting Georgia's exports of honey to the EU. Once the residue checks become possible in the laboratory, it will receive international accreditation. The Government believes that the laboratory will be fully operational after summer 2017.

There are concerns of all experts that small farmers will be most likely unable to use the laboratory – the tests are expected to be too expensive for the businesses with little turnover. This means that they will have to deal with the testing as a part of larger business - cooperative or commercial beekeeper. The tests do not need to be done frequently, if implementation of the food safety and hygiene standards at the apiary and processing enterprise receive no negative report from the NFA monitors.

It appears that there will be no alternative to the Tbilisi-based laboratory in the near future. The laboratory of the Ministry of Agriculture of Ajara has a sufficient capacity to conduct physical and chemical tests of honey as per the EU standards, however, at the moment it is technically far away from measuring residues of pesticides and pharmacologically active substances. The laboratory in Kutaisi is currently non-operational and waiting for the new equipment.

7. RULES

Regulations and Laws

Since independence and until 2005, Georgia's food safety system rested primarily on the standards inherited from Soviet times[13] and totally inefficient network of controlling bodies and laboratories. The policy implemented over the period of 2005 to 2012, which pursued the aim of deregulation in all spheres, has even worsened the food safety situation in the country. The changes started to emerge some 5-6 years ago when the Government of Georgia decided to step back from the deregulation agenda and launched a set of practical actions as a part of preparation for the association with EU.

In June 2014, Georgia' signed the Association Agreement with EU. The aim of the agreement is to further develop political and economic relations between the EU and Georgia through the establishment of a Deep and Comprehensive Free Trade Area (DCFTA) and a number of other measures. According to the agreement, Georgia has to push forward the reform agenda in many sectors and through this bring better business opportunities to Georgian small and medium enterprises, improve safety of food produced in Georgia, enhance energy efficiency, etc.

Chapter 4 of the DCFTA document is dedicated to the facilitation of sanitary and phytosanitary (SPS) measures in trade of animals and plants, and products of animal and plant origin, while ensuring that certain measures for protection of the parties' are in place. The document envisages that the parties seek a common understanding of animal welfare standards that reflects the norms of EU and World Organisation for Animal Health. Georgia is expected to bring its SPS legislation in line with the EU's and ensure that its arrangements on administrative capacity and implementation of the legislation are equivalent to those of the EU. After this, Georgian products will be allowed to enter the EU and be marketed on a par with EU's domestic products. The DCFTA document states that Georgia can export up 1,500 tonnes of honey to EU markets every year.

In brief, Georgia should have the following elements of legislation and infrastructure in order to make the exports of honey possible:

- Modern legislation and system of monitoring of food quality and safety standards including infrastructure for quality testing and certification of honey food stuffs. The key element of the infrastructure should be an internationally accredited laboratory for checking physical

[13] These were so-called State Standards (GOSTs - Gosudarstvennye Standarty -) – a set of regulations in the Soviet Union, considerably more flexible than similar standards in European countries. The standards were modified after the breakup of the Soviet Union and re-adopted by 12 post-Soviet countries including Georgia. This regulatory basis for government and private-sector covered a number of segments of economics such as food processing, energy, environmental protection, construction, transportation, etc.

and chemical parameters of farm outputs and food, plus the residues of pesticides and medicinal products;
- A residue monitoring plan;
- A system for registering and monitoring apiaries for diseases, food safety and hygiene;
- Requirements regarding trade and usage of veterinary medicinal products;

By May 2016, the Georgian side had in place the following laws and regulations associated with a number of sectors of agriculture including beekeeping:

- General rules of food hygiene[14] (Decree of Government of Georgia #173/2010);
- Food / feed safety veterinary and plant protection code (Law of Georgia / 2012) – an umbrella law aiming "to protect human life and health, consumer interests, animal health and welfare, and plant health, as well as to define the unified principles of state regulation and to form an effective system of state control in the fields of food/feed safety, veterinary and plant protection";
- Technical regulations on pharmacologically active substances, their classification, and maximum amounts of their residues in the food of animal origin (Decree of Government of Georgia #639/2015);
- The requirements for natural honey, the honey production process and its placement on the market by business operator - Decree of the Government of Georgia #714/2015;
- Technical regulations on live animals and animal food - some substances and rules of their residue monitoring (Decree of Government of Georgia #22/2016);
- A residue monitoring plan as a part of Decree of Government of Georgia #22/2016 – already approved by the EU;

The following is in the process of development:

- Regulations for quality testing and certification of various food stuffs including honey;
- A partially operational testing laboratory – the testing services by the laboratory are incomplete as no tests on pesticide residues in honey can be done;
- A system for registering and monitoring apiaries for diseases, food safety and hygiene under the National Food Agency;
- Decree of Government of Georgia on "Maximum residue levels of pesticides in or on food and feed of plant and animal origin";

Informal Rules and Norms

The markets, as they are understood in the modern economics, did not exist in the former Soviet Union. The economic relations were regulated through government interventions rather than supply and demand. The decisions about the allocation of resources and commodities were made by government institutions and the producers could not decide what to produce, in what quantities, what prices to set for goods, and what to pay to employees. This resulted in no competition among the producers, total deficits for many categories of goods, and very limited buying choices for customers.

[14] The rules include "standards for establishment, location, biological and pollution risks and health traceability" plus regulations on processing – consolidation, blending, packaging and labelling.

In such an environment, the disregard of business and market rules and ethics became an unwritten norm and was widely tolerated since the economic, legal and societal mechanisms to protect the customers and other actors of market systems were non-existent or weak. The adulteration of goods and cheating of customers in weight and measures were just two of many manifestations of the disregard of rules and ethics.

The poor business and market practices did not vanish after the breakup of the Soviet Union and Georgia's shift towards the market economy. The government's incapacity to control quality of food at the markets resulted in a general sense of permissiveness among all food market actors. The high levels of poverty in the country have also contributed to the sense of permissiveness as for quite a large segment of population price remains the only criterion for choosing product at the market. Quite many poor people are often paying little attention to product quality and looking only for the best weight or calories per GEL ratio.

With the above in mind, it can be concluded that **disregard of business rules and ethics** is one of the key informal rules in the majority of food market systems and the honey sector is not an exception. The assessment informants were telling the facilitator of discussions quite a number of stories on how the honey can be adulterated with water and sugar, how the cheap honey can be mixed with more expensive one, and how the clients can be cheated on weight. It appears that quite a large number of beekeepers have experience of cheating their customers in this or that way.

It's worth mentioning here that many assessment informants believe that this informal rule will largely lose its power when the control systems start functioning in accordance to the EU standards.

By cause of the frequent adulteration of honey, trust has become a key influencer for the sales of the product. It effects not only the price of honey but the entire "buy / no buy" decision. Due to the fact that many people from various generations remember how they were cheated by beekeeper farmer or trader at least once in their life, they continue questioning the quality of the product if it comes from an unknown source. The lack of confidence persists in all elements of the supply chain – the producers do not trust each other, then the traders do not trust the producers, and finally, the end-users do not trust both the producers and the traders. This is why the decisions to buy are made easily when the buyer knows the beekeeper of trader personally, or when the seller is "a friend of the friend" of the buyer. The best confidence building factor is a history of successful transactions in the past.

The assumptions about the attitudes of end-users (those who actually eat the honey) were checked through a quick and simple survey done with 100 respondents (39 men and 61 women) randomly selected in Kutaisi and three other towns in Imereti. The respondents were asked only two open ended questions:

1. Do you remember from whom have you bought honey last time?
2. If yes, what was the reason for selecting the source?

The responses like "I do not remember" or "I do not buy honey" came from 21 interviewees. The summary of the positive responses from the buyers of honey is presented in the table below:

Source	Why?[15] (the main motive)					
	Trusted source	Good Taste	Convenience	Good price	Others did this	Don't know why
Farmer I know	19	3	1	5		
Trader I know	14	3	3			
Farmer or trader recommended by friend/relative	4	4	1	1	1	1
Farmer or trader never seen before or heard about		3	2	2		1
Shop with "industrial/certified" and labelled product	3		2	2	1	2
Other source		1				
Totals	40	14	9	10	2	4

This table does not claim for the statistical reliability, however it shows the trend - from the 79 buyers (24 men and 55 women) who remembered the source of their last purchase of honey, 40 believed that "the trustful seller" was the main factor for source selection.

The above was fully confirmed by all 5 honey traders/wholesalers interviewed during the assessment – they all buy honey from their usual, "tested" sources and, if the circumstances permit, prefer not to deal with new suppliers.

That said, the **purchase of honey from the tested and trusted source** can be considered yet another important informal rule of the sector. It derives from the "disrespect of market rules and ethics", however appears to be more universal due to its impact on all elements of the supply chain.

The lack of trust impacts most of all the small-scale beekeepers who have limited client base and want to expand it. It limits the purchase of semi-commercial apiarists' honey by the larger-scale apiarists and wholesalers – those who have better marketing options.

The **smuggling of honey to Azerbaijan and Turkey** can be also considered an informal norm in the honey market system. It stays beyond the scope of current assessment for two major reasons:

a. The norm ultimately works in favour of Georgian beekeepers and the experts believe it's better to stay away from any kind of interference so the status quo is not changed for undesired results;
b. The norm results from a combination of policies, formal and informal, that are virtually beyond of control of the Georgian side;

8. FINDINGS

The following table provides a summary of constraints specific to the honey market system identified during the assessment and their perceived impact on the beekeepers and some other actors in the system:

[15] The question "why" was open-ended, however, the responses were quite basic and easily divisible into six categories.

Constraints	Perceived Impact(s)
Underdeveloped market links - particularly for newbies	✓ Newbies are unknown by other actors along the chain and have limited market options
Beekeepers' poor access to veterinary services and "know-how" due to low levels of expertise within the ICCs and private sector	✓ Obsolete and inefficient production practices ✓ Ineffective use of medicines / other inputs ✓ Reduced productivity / Increased production costs ✓ Higher risks of diseases and loss of bees ✓ Small-scale farmers are particularly vulnerable to the negative impacts of knowledge / service deficits
High cost of inputs and services for small-scale apiarists as a result of little economies of scale	✓ Increased cost of production ✓ Reduced incomes, reduced opportunities for investment in growth and stability
Limited consolidation and processing capacities, especially at the level of small-scale apiarists	✓ Losses in processing ✓ Reduced cost- and time-efficiency of operations ✓ Lesser marketing opportunities for small-scale apiarists as sales of small quantities can be less successful
Non-existent capacity for packing in small individual containers	✓ A market niche occupied by imports ✓ Unutilized marketing opportunities
Little marketing opportunities for pollen or propolis at the level of small farmers	✓ Ineffective use of resources ✓ Lost income opportunities
Presence of fake, unchecked medicines at the market	✓ Little cost-efficiency of "cheap" inputs ✓ Reduced productivity / Increased production costs ✓ Higher risk of diseases and loss of bees
Genetic deterioration of bees	✓ Reduced productivity / Increased production costs ✓ Higher risks of diseases and loss of bees
Inefficient business practices	✓ Inadequate accounting, recording, tracking, labeling ✓ Risks of facing challenges with government authorities
Uncoordinated transhumance	✓ Reduced productivity / Increased production costs ✓ Higher risks of diseases and loss of bees
Poor roads to transhumance destination	✓ Transhumance becomes expensive, non-affordable for small-scale apiarists
Poor access to finance	✓ Slow growth and expansion of business ✓ Vulnerability to shocks, limited resilience
Insufficient capacity of laboratories	✓ Adulterated honey ✓ Non-utilization of the EU and non-EU export marketing channels
Inadequate national regulations and non-existent food quality and safety monitoring mechanisms	✓ Adulterated honey ✓ Non-utilization of the EU marketing channels
Total lack of trust along the supply chain	✓ Loss of potential clients ✓ Under-utilized marketing opportunities ✓ Small apiarists can't sell their honey to larger ones
High cost of surveillance, testing and organic certification of honey	✓ Beekeepers stay unmotivated to engage in organic production of honey. ✓ Significant product and market diversification opportunities may stay unutilized after the EU door is opened for Georgian honey, both organic and non-organic

9. RECOMMENDATIONS

The table below presents all potential interventions recommended by the producers and traders and confirmed by the experts who participated in the assessment.

Constraint	Recommended intervention(s)
Underdeveloped market links - particularly for newbies	✓ Organize fairs / exhibitions /special markets ✓ Support purchasing and processing capacity of traders and larger beekeepers
Beekeepers' poor access to veterinary services and "know-how" due to low levels of expertise within the ICCs and private sector	✓ Facilitate technical capacity building of staff of ICCs and private veterinarians , through various means including private colleges ✓ Facilitate technical capacity building of beekeepers
High cost of inputs and services for small-scale apiarists	✓ Facilitate farmer cooperation for increased economies of scale, bulk purchase of inputs and services
Limited consolidation and processing capacities, especially at the level of small-scale apiarists	✓ Facilitate provision of grant and/or loan support to the beekeepers and service providers for acquisition of proper consolidation and processing equipment
Non-existent capacity for packing in small containers	✓ Facilitate provision of grant and/or loan support to beekeepers and service providers
Little marketing opportunities for pollen or propolis at the level of small farmers	✓ Facilitate farmer cooperation for production / consolidation of pollen, propolis and other products in marketable quantities
Presence of fake, unchecked medicines at the market	✓ Facilitate relevant capacity building of the staff of National Food Agency ✓ Advocate for reduction of registration costs for medicines to encourage registration and thus allow better government control of input trade
Genetic deterioration of bees	✓ Facilitate provision of technical and financial support to government and private sector efforts to establish effective breeding facilities
Inefficient business practices	✓ Facilitate closer cooperation between beekeepers and local business development facilities ✓ Facilitate business development capacity building among staff of ICCs
Uncoordinated transhumance	✓ Facilitate capacity building of ICCs for advise on / coordination of transhumance
Poor roads to transhumance destination	✓ Advocate for government investments into the roads to transhumance destinations
Poor access to finance	✓ Advocate for expansion of financial services in agriculture and apiculture in particular
Insufficient capacity of laboratories	✓ Advocate for establishment of more full capacity laboratories outside Tbilisi, closer to producers
Inadequate national regulations and non-existent food quality and safety monitoring mechanisms	✓ As the government is addressing the problem, facilitate awareness building of apiarists and related service providers on the regulations and mechanisms of monitoring of standards
Total lack of trust along the supply chain	✓ Facilitate grant and/or loan support for acquisition of portable and user-friendly quality checking equipment ✓ Work on the improvement of image of apiarist
High cost of surveillance, testing and organic certification of honey.	✓ Pilot grant support for organic certification and encouragement of farmers interest in going organic

Annex 1: Guide for Discussion with Producers

To be used for one-to-one discussions with independent beekeepers and FGDs with coop members

1. Types of honey you produce, quantities per type

2. Productivity of your apiary in the last 5-7 years, reasons for productivity fluctuations, ideas on improvement

3. Costs of production, factors influencing the costs

4. Consolidation, processing and packaging of your honey: importance, access, quality/effectiveness, costs, ideas on improvement

5. Marketing practices: modes, advertisement, cooperation, complaints management

6. Buyers of your honey: who, why, where, when, how much, etc.

7. Sale prices depending on the type of honey, purchase amount, season, buyer, etc.

8. Current incomes from honey and other apiary products and the ways to increase incomes

9. Capital assets you need: availability, costs, quality/effectiveness, durability, ideas on improvement

10. "Consumables" you need: availability, costs, quality/effectiveness, ideas on improvement

11. Information and knowledge: importance, access, quality/effectiveness, costs, ideas on improvement

12. Veterinary services: importance, access, quality/effectiveness, costs, ideas on improvement

13. BD services: importance, access, quality/effectiveness, costs, ideas on improvement

14. Transhumance: importance, access, quality, costs, locations, ideas on improvement

15. Infrastructure: importance, access, quality, costs, ideas on improvement

16. Capital: importance, access, quality, costs, ideas on improvement

17. Laboratories: importance, access, quality, costs, locations, ideas on improvement

18. Regulations and laws: the most important ones, helpers and hinderers

19. Informal rules and norms: the most influential ones, helpers and hinderers

20. Growth of your apiary in the last 5-7 years, supporting and impeding factors

21. Going organic: interest, needs/constraints, perspectives

Annex 2: Guide for Discussion with Traders

To be used for one-to-one discussions with wholesalers / retailers active in honey supply chains

1. Types of honey you buy
2. Volume of honey transactions in the last 5-7 years (per year), reasons for transaction volume fluctuations
3. Your suppliers of honey – their profile, your experience with them, successes, failures
4. Perceived difference between large-scale apiarists (as suppliers) and small-scale ones
5. Price paid for the honey you purchase, other purchase costs
6. Factors influencing purchase price
7. Other transaction costs (transportation, taxes, storage, etc.)
8. Mode of purchase (farm-gate, open market, etc.)
9. Engagement in honey extraction, processing and packaging
10. Honey quality testing equipment used/owned by you
11. Buyers of your honey – who are they, categorization of end-users if possible
12. Sale prices depending on the type of honey, purchase amount, season, buyer, etc.
13. Engagement in trade of other apiary products
14. Information and knowledge you need, information and knowledge you do not get
15. Capital: importance, access, quality, costs, ways to improve
16. Laboratories: importance, access, quality, costs, locations, ways to improve
17. Regulations and laws: the most important ones, what helps and what hinders
18. Informal rules of the market: the most influential ones, what helps and what hinders

19. Cooperation with others: sphere, reasons, status (formal or informal)

20. Going organic: interest, needs/constraints, perspectives

Annex 3: Guide for Discussion with Experts

To be used for one-to-one discussions with independent beekeepers and FGD with coop members

1. Quality: major issues / constraints
2. Productivity: major issues /constraints
3. Producer profiles
4. Production costs
5. Processing and packing: major issues /constraints
6. Processing and packing costs
7. Capital assets needed to improve production, processing, packaging and trade
8. Information and knowledge: status of services, ideas on improvement
9. Veterinary services: status of services, ideas on improvement
10. BD services: status of services, ideas on improvement
11. Transhumance: status of services, ideas on improvement
12. Infrastructure: status of services, ideas on improvement
13. Capital: status of services, ideas on improvement
14. Laboratories: status of services, ideas on improvement
15. Regulations and laws: current status, impact, ideas on improvement
16. Informal rules and norms: current status, impact, ideas on improvement
17. Farm-gate prices depending on quality/type, yield/year, packing, demands of the "export" markets
18. Prices down the chain: estimated percentage over the farm gate price markets
19. Profiles of traders

20. Transactions: modes and constraints

21. Profiles of end consumers

22. Going organic: interest, needs/constraints, perspectives