



Safety and Quality Investment in Livestock:

Georgian Dairy Market System Analysis and Mapping

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GEORGIA SAFETY AND
QUALITY INVESTMENT
IN LIVESTOCK (SQIL)

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Georgian Dairy Market System Analysis and Mapping

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List of Abbreviations / Acronyms

AA	Association Agreement
ACDA	Agricultural Cooperatives Development Agency
AI	Artificial insemination
ALCP	Alliances Caucasus Programme
APMA	Agriculture Projects Management Agency
AYEG	Association of Young Economists Georgia
BSO	Business Support Organization
CARD	Center for Agribusiness and Rural Development
CEN	European Committee for Standardization
CENELEC	European Committee for Electrotechnical Standardization
CRRC	Caucasus Research Resource Center
CSO	Civil Society Organization
DCFTA	Deep and Comprehensive Free Trade Areas
EBRD	European Bank for Reconstruction and Development
ENPARD	European Neighborhood Programme for Agriculture and Rural Development
EqI	Liquid milk equivalent
EU	European Union
FAO	Food and Agriculture Organization
GAAS	Georgian Academy of Agricultural Sciences
GBDC	Georgian Business Development Center
GDP	Gross Domestic Product
GEC	GEC - System Business Consulting
GEL	Georgian Lari
Geostat	National Statistics Office of Georgia
GeoSTM	Georgian National Agency for Standards and Metrology
GES	Georgian Standard
GFA	Georgian Farmers' Association
GI	Geographical Indication
GPB	Georgian Public Broadcasting
HACCP	Hazard Analysis and Critical Control Points
HEKS EPER	Hilfswerk der Evangelischen Kirchen Schweiz
HoReCa	Hotel/Restaurant/Café
HS	Harmonized Commodity Description and Coding System (Harmonized System)
IEC	International Electrotechnical Commission
IFAD	International Fund for Agricultural Development
ISSET	International School of Economics at Tbilisi State University
ISSET-PI	ISSET Policy Institute
ISO	International Standardization Organization
kg	Kilogram
km	Kilometer

I	Liter
LTD	Limited
MC	Mercy Corps
MEPA	Ministry of Environmental Protection and Agriculture of Georgia
mIn	Million
MOLI	Market Opportunities for Livelihood Improvement
NAITS	National Animal Identification and Traceability System
NTM	Non-tariff measure
PIN	People in Need
PMCG	Policy and Management Consulting Group
pp	Percentage point
Q	Quarter
R&D	Research and development
RICC	Regional Information and Consultation Center
SME	Small and Medium-sized Enterprise
SPS	Sanitary and Phytosanitary Measures
SQIL	Safety and Quality Investment in Livestock
SRCA	Scientific-research Center of Agriculture
USA	United States of America
USAID	United States Agency for International Development
USD	United States dollar
USDA	United States Department of Agriculture
VC	Value chain
WB	World Bank
YoY	Year-over-year

1 Introduction

1.1 Project Description

Land O'Lakes International Development is leading an innovative, demand-driven Safety and Quality Investment in Livestock (SQIL) project to improve food safety and quality within Georgia's dairy and beef value chains. The project is funded by the U.S. Department of Agriculture (via Food for Progress) and aims to reduce losses, improve food safety and quality from farm to fork, and to boost competitiveness, productivity, and trade within the Georgian dairy and beef market systems.

Partnered with Michigan State University and the Georgian Farmers' Association, Land O'Lakes will implement interventions to support entrepreneurs and competitiveness within the dairy and beef market systems. SQIL initiatives also reflect a commitment to increasing opportunities for women and young people, and an improved commitment to climate change. The SQIL will employ an integrated approach with six interlinked components:

- Expand Market Access;
- Improve Sanitary and Phytosanitary Standards;
- Improve Post-Harvest Handling and Storage;
- Improve Productivity;
- Improve Access to Financial Services;
- Capacity Building to Inform on Food Safety Policy Development.

1.2 Objective of the Study

The main objective of this study is to map the Georgian dairy market system as a whole, focusing on dairy cattle products, but also including sheep, goat, and buffalo dairy goods. Consequently, the study reveals the interconnectivity of market actors in the system; both how they interact with each other and benefit from goods or services, from primary production to the end market. This research aims to improve understanding of the current dairy market system at a national level, and to identify the key opportunities and constraints of systemic changes within the sector. Based on the findings, the study subsequently provides recommendations for the more effective and inclusive development of the dairy market sector.

1.3 Research Methodology

This research is chiefly built upon desk research, with preliminary results discussed and validated from in-depth interviews from a selection of key stakeholders. In addition, members of the research team utilized the interview transcripts from recent ISET research (ISET-PI, 2019) centered on milk and dairy products. The research team, moreover, attended the 3rd Caucasus

Dairy Congress, held in Tbilisi on 14 March 2019,¹ and the Food Safety session, conducted by the EU through ENPARD on 17 April 2019.² The desk research includes a review of the current information (literature and statistics) to determine the gaps in the available evidence and to identify the key informants. Fifteen in-depth interviews were conducted in March-April 2019 (see Annex 1).

2 General Overview of the Sector

Although the agricultural output of overall GDP is modest, the sector employs around 40% of the labor force, thus agriculture is pivotal to the livelihood of many people, particularly the rural population, which amounts to approximately 42% of the total Georgian population (Geostat, 2019).

The livestock sector plays a significant role in the country's agriculture, accounting for more than half of its total output. Although livestock farming is spread throughout Georgia, in the mountains, which cover more than 50% of Georgian territory, agriculture is dominated by livestock. This situation a consequence of rich summer pastures and the limited prospects for crop production in these areas. Many rural families' livelihoods depend exclusively on the livestock they breed, most notably cows. Dairy production is one of the most traditional agricultural sectors in Georgia. While most milk is produced by smallholders and consumed in homes or sold through informal channels, milk production still represents a significant proportion of smallholders' incomes. Besides which, the dairy sector contributes to food security and overall nutrition throughout the country.

According to Geostat, in 2017 there were approximately 900 thousand head of cattle in Georgia, approximately half of which were reproductive age dairy cows. This represents a 6% reduction in total cattle compared to 2014. However, milk production per cow, which increased by 5% from 2014 to 2017, somehow managed to compensate for this reduction. Nevertheless, overall milk production is following a decreasing trend. In 2017, the milk produced in Georgia accounted about 530 million Eql (valued at 140 million USD, according to an IFAD study), out of which 98% is cows' milk, the remainder is derived from sheep, goats, and buffaloes.

While the demand for milk and milk products has an increasing curve (accounting for about 680 million Eql), Georgia is a net importer of milk and dairy products, with a deficit of around 150 million in liquid milk equivalent. The greatest proportion of milk is consumed during the production of homemade cheeses and other dairy products by the farmers themselves. The remainder is supplied to processing companies for the creation of cheese and dairy products. Generally, there are many mid-sized processing companies, which often collect milk from local farmers, with a capacity of less than 10 tons per day. While the other important players are industrial processors, which account for 12% of the total milk supply and have a capacity greater than 10 tons per day.

¹ See: <http://www.georgiandairy.org/ka/post/sakartveloshi-merdzeveobis-sektoris-mkhardacheristvis-dghes-mesame-kavkasiuri-konkresi-chatarda>

² See: <http://enpard.ge/en/eu-consults-stakeholders-enpard-iv-programme-priorities/>

Aside from fresh milk, processors mostly use imported milk powder and other imported ingredients to create additional dairy products (IFAD, 2018).

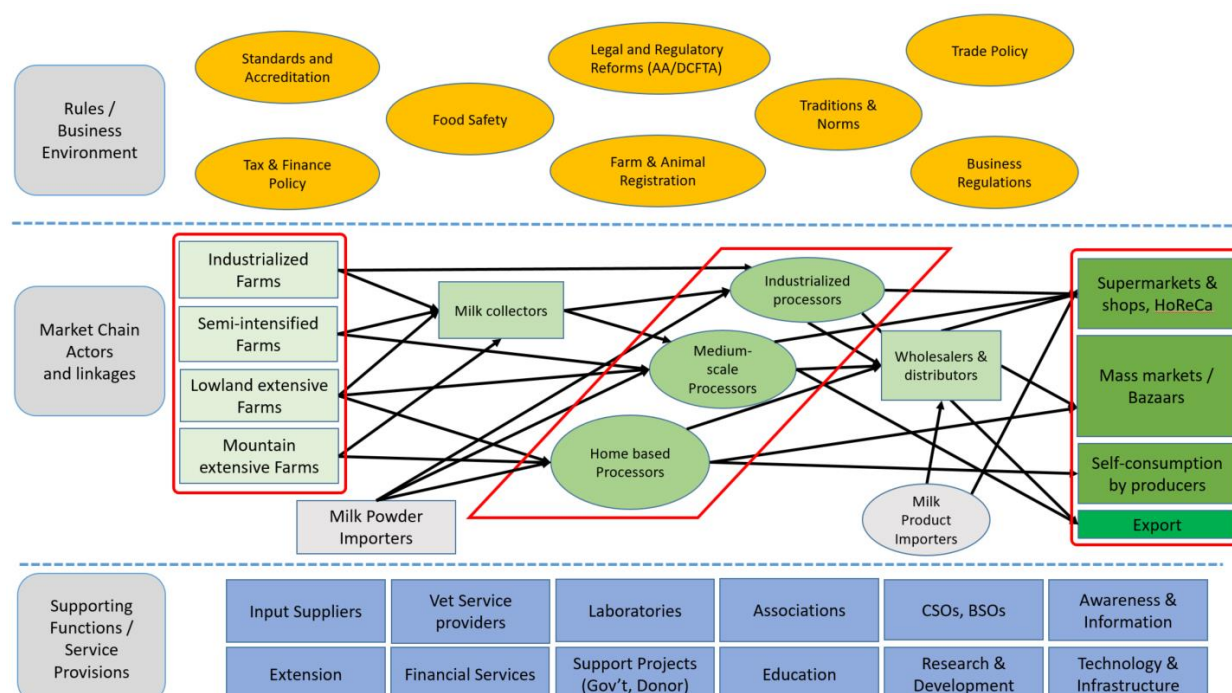
2.1 Dairy Market System Mapping

“A market system is a multi-function, multi-player arrangement comprising the core function of exchange by which goods and services are delivered and the supporting functions and rules which are performed and shaped by a variety of market players” (The Springfield Centre, 2015).

Based on the findings of the desk and field research, the researchers help illustrate the Georgian dairy market as a system (Figure 1). We thus describe a set of actors, functions, and issues, which collectively describe the relationships between the sector’s various actors and how they operate in the dairy market system. This study maps the dairy market system in three areas: the market chain, the supporting function and services, and the rules and business environment.

The market chain- The core of the market system and the entity through which channels a product moves; from the primary producers to the final consumers, passing along the way through various actors. The market chain includes primary producers, consumers in end markets, and every intermediary purchaser along the chain.

Figure 1: A Generic Map of the Market System



Source: Updated based on HEKS EPER (2015).

2.2 Core Market System Actors

The core market chain reveals the product flow, starting with primary milk producers and culminating with product consumers. The chain captures the flow of goods as they pass through different market actors; however, the figure above can also be considered in reverse, starting at the end-markets moving to the milk producers - thus representing the flow of value (money) from the demand side (consumer) down to the supply side (producer) (HEKS EPER, 2015).

The core chain therefore represents both product and value flows. The sustainability of the market system though is dependent on final consumer demand, therefore it is pertinent to begin by discussing the demand side.

2.3 Demand Side of the Dairy Value Chain

Several studies (IFAD, 2018; CARD & GFA, 2018; MOLI, 2015/2016) have been undertaken to analyze the dairy sector in Georgia. Many focus on the supply side of the dairy sector (producers, processors), but not the demand side of the dairy value chain. Nevertheless, key stakeholders within the dairy market agree that raising awareness among consumers is key, and various programs and projects are necessary resolve such issues.

The dairy sector is changing rapidly, somewhat accelerated by the enforcement of new food safety regulations. Consequently, there are many campaigns increasing awareness, which aim to provide information on food safety standards and regulations to consumers. Resultantly, consumer expectations regarding the quality of dairy products are gradually improving. Consumer demand for local authentic products is also increasing (IFAD, 2018). There is, however, still a lack of understanding and awareness regarding the food safety standards to which dairy products must comply. A recent ISET survey, conducted among dairy consumers, revealed that individuals have poor awareness of the technical regulations for milk and dairy products, and that they have a passive approach to reading product labels. Moreover, consumers have little awareness as to their own role in the implementation process of the regulations (ISET Policy Institute, 2019).

ALCP further researched consumer preferences in 2017, and this study revealed that consumers demand “ecologically clean” dairy products. Based on these results, ALCP recently initiated a new project focusing on the labeling and promotion of dairy products made from raw local milk. The “Georgian Milk” label has already been awarded to seven products, and, as of today, they are being actively promoted under this title.³ All registered dairy factories with an HACCP certificate are qualified to apply for this label. The main purpose of this movement is to safeguard consumers’ rights and to balance competition between dairy producers.

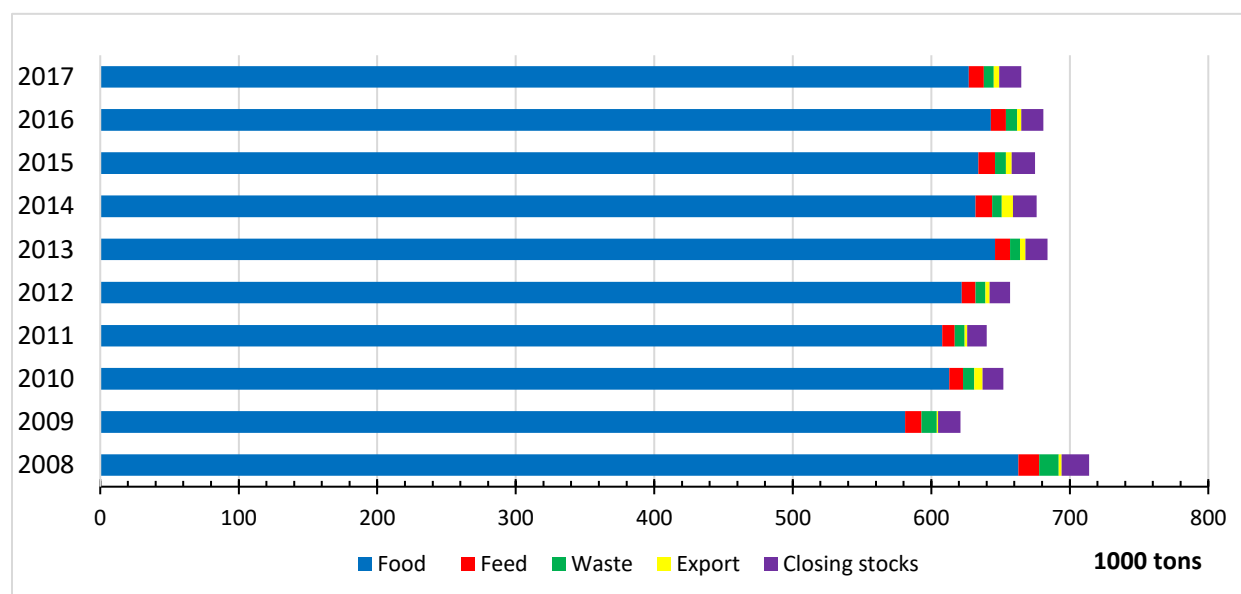
³ See: <http://www.georgianmilk.ge/>

2.3.1 Consumption of Milk and Dairy Products

Milk and dairy products in general are very popular and much demanded by consumers, especially Georgian cheeses.⁴ Traditionally, Georgians' are dairy consumers, with an annual average of 170 kg per capita (Geostat, 2017), although this is considerably below EU consumption levels, approximately 250 kg per capita annually (FAOSTAT, 2017). Geostat's Integrated Household Survey data shows that from 2013 to 2017, the share of household expenses on milk and dairy products of total monthly food expenses increased by approximately 1 percentage point and approached an 8.5% margin. If one considers that 31% of a household's total budget covers food expenses, it is possible to discern that from every 100 GEL of a regular household budget, 2.5 GEL is spent on dairy products. While a rough estimation, Georgia's dairy market size is valued at over 1 billion GEL; with the most consumption by Georgian residents and the remainder by tourists in HoReCa.

According to Geostat, milk and dairy products utilization in the country exhibited an increasing trend between 2009 (621 million Eql) to 2016 (681 million Eql). However, the volume reduced slightly, by 2% (665 million Eql), in 2017. Remarkably, final consumption accounts for approximately 94% of the total utilization, leaving less than 2% of milk and dairy products as waste, less than 2% of milk as animal feed, while the final 2.5% reverts to stock for the following year.

Figure 2: Milk and Dairy Product Utilization



Source: Geostat, 2019

⁴ Georgia's market is dominated by four major types of cheese: Imeruli, Sulguni, Karkhnuli, and Guda.

Of total dairy, around 17% is consumed by its household producers (120 M Eql), 58% is sold through rural markets and bazaars (400 M Eql), approximately 24% is sold in supermarkets and shops, and only a small amount culminates in export markets (IFAD, 2018).

Export markets- Although exports of dairy products are very modest, amounting to 2.8 million USD in 2018, most exports go through the neighboring countries of Armenia and Azerbaijan, the third most notable export destination being the USA. Interestingly, in 2018, Georgia exported different varieties of cheese overseas (31 tons, valued at 289 thousand USD); including Sulguni (common, smoked, and braided), Imeruli, Tenili produced by the dairy company Tsezari from Tsalka, and Guda from the sheep cooperative Alaznistavi in Tusheti.

Rural markets and bazaars- Dairy product traders in bazaars usually purchase their stock directly from farmers or middlemen, and resell the merchandise in open markets. Sometimes, farmers also personally sell their products, often during weekend markets. The hygienic norms are not compliant with western standards, and dairy products are often traded in open spaces without refrigeration.

Shops and supermarkets- Buy dairy products, typically from wholesalers or distributor companies, however they occasionally have agreements directly with farmers or processing companies. There are around 20 supermarket chains in Georgia, with over 600 branches spread throughout Tbilisi and regional towns.

2.4 Supply Side of the Dairy Sector in Georgia

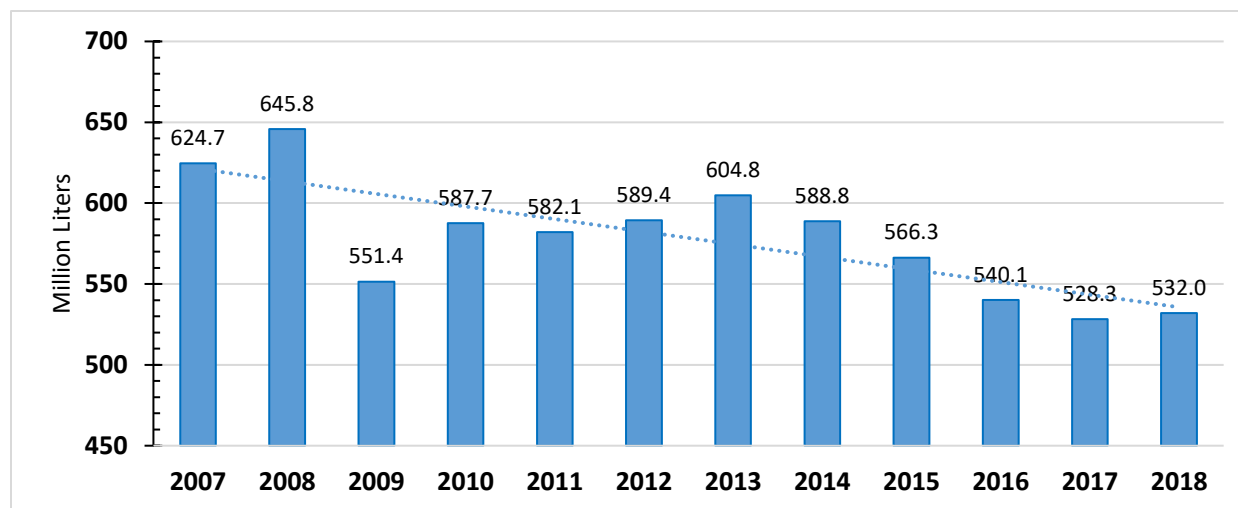
In 2017, Geostat estimated local dairy production at 530 million Eql; considering that demand was around 665 million Eql, the shortage (135 million Eql) had to be satisfied by imported milk products (both powder and the final product). The milk and dairy self-sufficiency ratio has been constantly decreasing over the past decade, where it amounted to 82% in 2017 compared to 93% in 2008. Moreover, an increased demand for live animals from Georgia on export markets has stimulated a decreasing of number of cows and thus milk production in the country.⁵

Milk production itself is determined by (i) the number of dairy cows, and (ii) the average yield of those cows. According to Geostat, in 2017, there were approximately 900 thousand head of cattle in Georgia, approximately half of which are milking cows. Although the productivity per cow increased, while the number of cows decreased, there has been a corresponding overall decreasing trend in milk production (Figure 3). With per cow productivity at around 1,400 liters per year, Georgia is significantly below the EU and other developed countries.⁶ Furthermore, milk output varies every quarter due to seasonality, with more than a third of total domestic milk production taking place in Q2, while the least productive share in Q4, equates to a sixth of the annual production.

⁵ See: <http://iset-pi.ge/index.php/en/iset-economist-blog-2/entry/we-don-t-need-no-regulation-on-georgia-s-dairy-and-livestock-sector>

⁶ FAOSTAT shows the average productivity per cow was over 6,700 liters per year in 2017 in the EU, with Romania being the worst (≈3,200 liters annually) and Denmark being the best (≈9,500 liters annually) performer.

Figure 3: Annual Milk Production in Georgia (mln. liters)



Source: Geostat, 2019

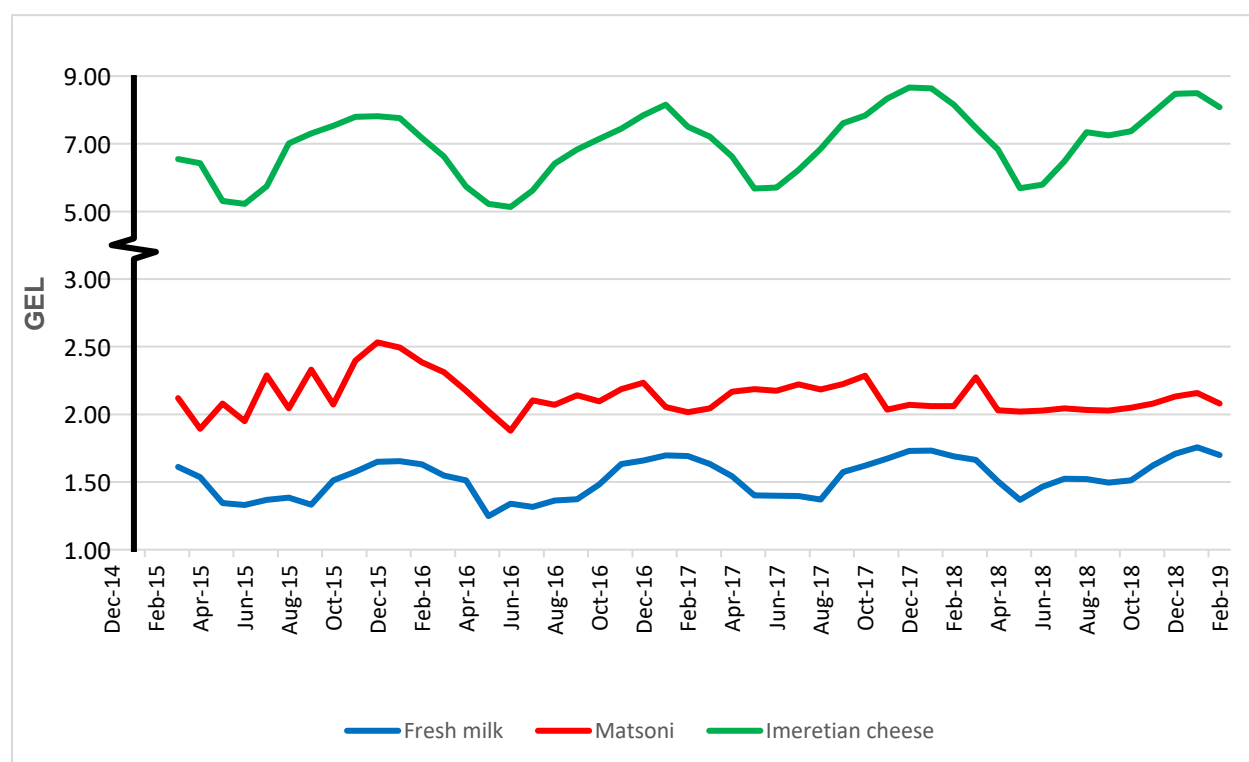
2.5 Milk and Dairy Product Prices

As previously mentioned, household expenses on milk and dairy products have increased in recent years and a part of this change is related to increased consumption, but also to increased prices.

Fresh milk and Imeretian cheese prices notably correlate,⁷ and they follow a clear seasonal pattern, with late winter reaching the highest prices and the beginning of summer the cheapest. Although this is not true for matsoni, another popular Georgian dairy product, the price of which is roughly stable throughout the year and has not recently changed significantly even on a YoY scale. According to the Ministry of Environmental Protection and Agriculture of Georgia (MEPA), consumer prices of fresh milk, in general, gain over +0.30 GEL/l between summer and winter, while the adjustment for Imeretian cheese is roughly +3 GEL/kg. Whereas, with matsoni, the average monthly consumer price in 2018 fluctuated at around 2.10 GEL per kg.

⁷ Imeretian cheese is the main ingredient of Khachapuri, one of the most popular Georgian pastry dishes.

Figure 4: Milk (GEL/l), Matsoni (GEL/kg), and Imeretian Cheese (GEL/kg) prices



Source: The Ministry of Environmental Protection and Agriculture of Georgia.

Considering the farm-gate prices of milk, Geostat identifies that they equaled on average 0.88 GEL per liter of fresh milk in 2014 and dropped to 0.81 in 2015, though it reduced yet further to 0.80 GEL/l in 2016, before jumping up to 0.90 in 2017. As most dairy farms are extensive and milk production is characterized by seasonality, prices are volatile across the seasons. On the other hand, data from Georgian Dairy,⁸ and interviews with industrialized farmers, reveals that farm-gate prices for industrialized farms remain stable throughout the year, and vary from 1.20 to 1.40 GEL per liter. It should also be highlighted that milk prices are at least two times higher in Georgia than in the European Union.

There is moreover a powerful correlation between milk and beef prices in Georgia, suggesting that livestock owners aim for both the dairy and meat markets simultaneously, and adjust their prices to whichever proves the most lucrative option. A discussion on this topic has recently been investigated by an ISET blog article.⁹

⁸ See: <http://georgiandairy.org/ka>

⁹ See: <http://www.iset-pi.ge/index.php/en/iset-economist-blog-2/entry/we-don-t-need-no-regulation-on-georgia-s-dairy-and-livestock-sector>

2.6 Import of Dairy Products

2.6.1 Milk Powder Imports

Milk powder (HS code 040210) has been one of the most important listed dairy imports in recent years, reaching a record value of 20.3 mln. USD in 2017. Although its value reduced to 15.6 mln. USD in 2018, its importance to total imports has hardly changed, and in the last year amounted to almost a quarter of all dairy product imports.

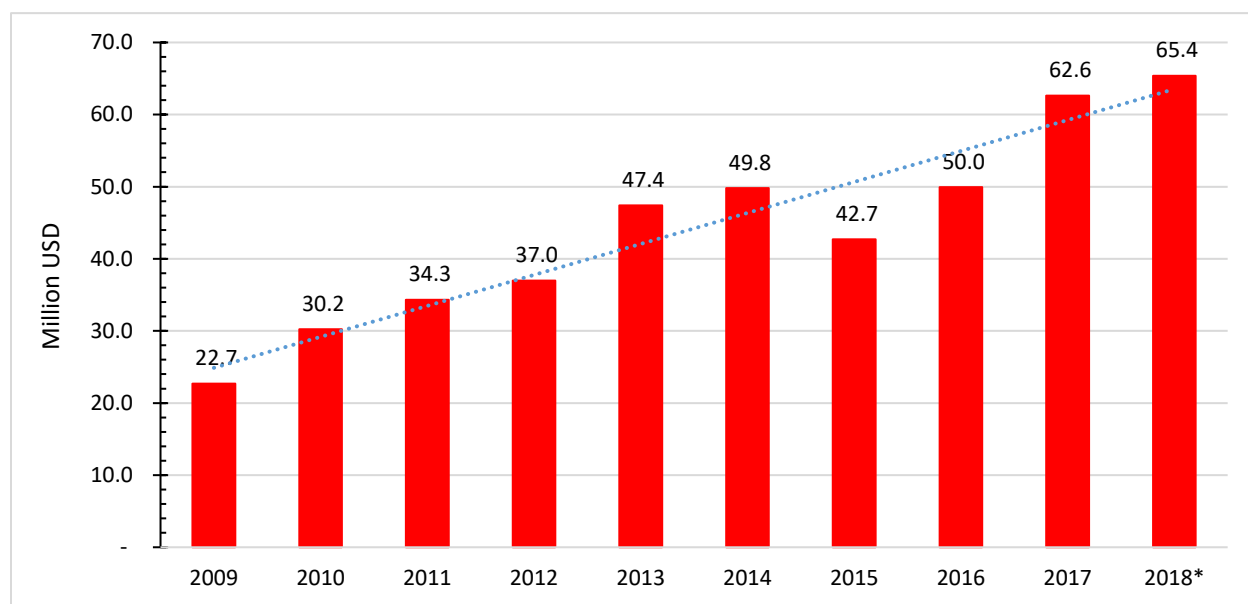
A decade of growth in annual imports of milk powder (HS code 040210) has resulted in an increase of over 2.5 times from 2009 compared to 2018. The imports do exhibit a seasonal pattern, with summer being the least active period and fall the most active, but these seasonal discrepancies are hardly significant. For the last decade, roughly 29% of imports occurred in autumns, 21% in summers, while winters and springs each received around a quarters of annual imports.

2.6.2 Milk Product Imports

While milk powder was one of the most important recent items within the imported dairy products list, likewise butter derived from milk (HS code 040510) was also significant. In 2018, its import reached 22.5 mln. USD, more than a third of the total dairy products import value. It is noteworthy that since 2009, annual imports of butter derived from milk have constantly been increasing, at approximately +16% per year, and in the first two months of 2019 it exceeded imports in January-February 2018 by more than 0.2 mln. USD. The differences between its quarterly imports have been only slight over the last decade: on average 23% of imports took place during the winter, 24% during the fall, 26% in the summer, and 27% throughout spring months.

In addition to milk powder and butter, Georgia also imports cheese and curds, which exceeded 10 mln. USD in 2018. The combination of dairy product imports has led to a general upward trend over the past decade, with 2016, 2017, and 2018 exceeding the previous annual records (with the exception of 2015, when total dairy product imports dropped to 7.1 mln. USD YoY). The aggregated growth from 2009 to 2018 equaled +188%, resulting in total imports of 65.4 mln. USD in 2018. The key trading partners for dairy products are Ukraine (nearly 30%) and Russia (nearly 10%), who have recently played more significant roles. Nevertheless, in comparison to exports, imports are still less concentrated on specific countries, with a total of over 60 unique trading partners in the past year.

Figure 5: Imports of Dairy Products (HS codes 0401-0406)



Source: Geostat, 2019. *Preliminary data.

3 The Key Actors

3.1 Types of Dairy Farm

According to latest Georgian agricultural census (Geostat, 2014), there are over 271 thousand holdings with cattle, with 3.7 head on average.¹⁰ Of these holdings, 94% have fewer than 10 head and only 103 farms have over 100 cattle. Georgia's dairy farming is still mixed, both because of its combination of lowland and mountainous pastures and its current transitional intensification of farms from extensive farming. According to an IFAD study (2018), there are four major categories of dairy farms across Georgia:

- **Lowland extensive farms-** This traditional system is used in most of lowland Georgia. Farmers own up to four local breeds of cow, and livestock farming is usually not the main activity of these holding. Cows graze on pastures most of the year, and thus farmers make use of reduced inputs and services. Consequently, the cows are not very productive, usually producing only five liters of milk per day during their short lactation period (200-250 days). There are around 165 thousand of such holdings around Georgia, amounting to 70% of total dairy farms. These holdings typically produce cheese and other milk goods for home consumption (sometimes selling their small surplus across different channels).
- **Mountain extensive farms-** This is another traditional system, using local breeds, with up to twenty cows, though more commercial than the previous category. Farmers are not necessarily located in the mountains, however, as arable land is limited in the mountains but is rich with pastures, cattle are taken to the mountains from May-June until September.¹¹ Transportation is difficult in such terrain, and milk processing occurs in the mountains, while cheese is mostly supplied to lowland markets. This type of farming is more commercially oriented and plays an important role in local households' income. There are around 50 thousand of such holdings throughout Georgia.
- **Lowland semi-intensified farms-** This is a more progressive type of farming than the previous forms, with upgraded production systems: usually including improved breeds (cross-breeds), which are less dependent on pastures, and where the animals are fed with fodder (hay and sometimes silage or concentrate), and more intensive care is given to animal health. These farms typically retain 4-5 cows, and there around 20 thousand of these holdings in Georgia. They are designed to sell milk to collection centers or processors, or to make cheese for both personal consumption and sale.
- **Industrialized farms-** These types of farm are not common in Georgia, however they are increasing over time. They are western-style holdings, with high-productive breeds (mostly Holstein and Swiss Brown), they produce quality fodder on arable land (usually silage), they use also concentrate, veterinary services, and artificial insemination (AI). According to the Georgian Dairy association, Georgia currently has fifteen industrialized farms, with 2,600 cows, which produced 22 million liters of milk in 2018. Productivity per cow various

¹⁰ For dairy cows, 235 thousand holdings keep dairy cows, with an average of 2.15 cows per holding.

¹¹ During the summertime, farmers occasionally rent cows for milking and cheesemaking.

from 7 to 10 tons (the average lactation period is 305 days), with an average of 8.5 tons, which is 6 times higher than the average Georgian productivity.

The various types of farms have different challenges, but a lack of knowledge, experience, and qualified specialists (e.g., veterinarians) are common problems for the vast majority of farms. The low productivity of cows, typically faced by extensive farms, is caused by poor productive breeds, a deficiency in proper feed (e.g., concentrate, silage), and a lack of appropriate treatment for animal health.

3.2 Milk Collectors

There are two types of milk collection across Georgia: (i) relatively large collectors who amass milk, hire drivers, and use cooling equipment during transportation, before delivering it to processing factories. (ii) Dairies hire intermediary milk collectors, the so-called “vehicle collectors”, who travel around farms and collect milk to transport it to processing factories.

Milk collectors, if registered, are controlled by the NFA, which indirectly controls farmers as well. However, when difficulties occur, milk collector face complications in tracing which farm (or cow) actually has the problem. Thus, milk collectors tend to not register, especially smaller ones, yet they still operate on the market. Since 1 January 2019, registered milk collectors can only collect milk from registered animals.

Unregistered milk collectors operate under the “shadow economy”, thus they often lack access to finance and modern equipment (milk coolers, vehicles, etc.). Moreover, unpaved rural roads are another serious challenge for such milk collectors.

3.3 Milk Processors

Milk processing transforms milk into various milk products. Most milk is processed in homes or by unregistered operators. While, registered dairy processors differ by size, scale, and variety of product (CARD & GFA, 2018). An IFAD study (2018) identifies three types of processor:

3.3.1 Home Based Processors

The majority of locally produced milk (80-85%) is developed into cheese by home-based processing. Georgians typically produce Imeruli cheese, which traditionally does not use milk pasteurization, thus there is a high risk of brucellosis. The production of Sulguni, the second most popular cheese, requires milk to be heated and is less hazardous in terms of food safety. The other milk-based products commonly made at home are: Nadughi, matsoni, and mature cheese. Approximately 25% of cheese and other milk products processed in situ are consumed at home, while the remainder is either sold at farm-gate level or via traders in bazaars.

3.3.2 Mid-scale Processors

Mid-sized processors process 2 to 10 tons of milk per day, depending highly on seasonality, where winter production is much slower than summer. This channel is represented by both registered and unregistered enterprises, and processes about 50 M Eql of local milk and around 90 M Eql of milk powder. They collect milk, either themselves or through collectors, from farmers with a radius of up to 50 km distance (potentially 100 km during the summer). They mostly produce cheese (Imeruli, Sulguni), sometimes matsoni, and they sell their products in either regional bazaars, or small shops and supermarkets. The largest of which may also sell in Tbilisi. Their processing facilities are fairly high-quality and they can easily comply with food safety regulations.

3.3.3 Industrialized Processors

According to the Dairy Products Producers Association (Dairy Georgia) there are six factories that process over 10 tons of milk per day each,¹² and they represent the industrialized processors. They process about 85 M Eql annually, of which 60 M Eql is milk powder and other imported dairy products. These processors create a range of milk products such as: cheese, sour cream, matsoni, fermented milk, yogurt, etc. Certain processors also have special raw milk product lines, in response to an increasing demand from local consumers.

Besides traditional milk product manufacturers, ice-cream producers, who generally use milk powder, might too be considered industrialized processors (or at least mid-scale processors).¹³

All processors face the challenges of the seasonal milk supply, this can be balanced by industrialized and some mid-scale processors using imported milk powder. Unfair competition is often cited as another challenge to registered processors. Such processors are subject to taxes, as well as NFA monitoring, where unregistered processors are left unchecked. Registered processors often also face an issue with unreliable, poor quality laboratory tests. Moreover, sale on credit is another complicated challenge for processors; small-scale processors often have difficulties in accessing finances to upgrade their facilities to HACCP standards in order to meet food safety requirements.

3.4 Distribution Companies

The large processing companies have their own distribution channels and are able to deliver their own products to the retailers. For SMEs, using distribution companies is becoming more and more common. Typically, distribution companies are better positioned with retailers and have a greater capacity to promote sales and place dairy products in a prominent shelf location.

¹² Sante, Soflis Nobati, Natural+, Milka, Agrohub, and Tsipura-Samtskhe (during the summertime).

¹³ Such as: Tolia, Barambo, Gurjaanis Nakini.

3.5 Summary of Linkages among Core Market Chain Actors

The linkages between farmers, milk collectors, and dairies are mostly informal, mainly involving simple verbal agreements. Collectors dairy check the safety of milk, and if contaminated they will not accept it. In general, food safety issues are the most serious at the farm and milk collection level, while further down the value chain (processor, distribution, retailer) there are fewer safety challenges, rather issues related to the quality of product. There are often informal agreements between parties, and farmers are paid on a weekly or bi-weekly basis, although at times advanced payments are also common. This relationship builds trust between farmers and collectors, and often milk collector support farmers and deliver farm inputs (e.g., feed) on credit, which will be deducted from the value of the milk (ISET Policy Institute, 2016).

Industrialized farms and processors usually have renewable contracts with a duration of up to one-year. While, delays in payment are not usually an issue.

The linkages between mid-sized and large processors and wholesalers or distribution companies are often formalized and involve contracts. Payments from the retailers' side are sometimes delayed, which can create liquidity problems for wholesalers and processors.

4 Dairy Market Support Functions

This study identifies the key activities and actors of input suppliers and service providers, which the core market chain actors require in order to complete their roles within the market system. The market system map places supporting market systems below the market chain.

For a perfect reflection of the dairy market, it is important to draw attention to support functions. The role of supporting functions is to help the market perform smoothly, to develop, expand, and be studied.

4.1 Input Suppliers

Input suppliers group combine several sub-functions:

- **Artificial insemination-** Household farms generally use the traditional method of reproduction, while semi-intensified and industrial farms use artificial insemination. Artificial insemination helps farmers to best manage animal genetics and reproduction. The main supplier of the service is Caucasus Genetics, which also covers almost all inputs (providing machinery and advanced technology, milking and processing equipment, high-breed heifers, imported animal feed, etc.);
- **Medication-** Veterinary medicines are chiefly imported, but they are also manufactured locally. The distribution of the medicines is generally not a problem, however there are still some municipalities where veterinarian services are unavailable. The sale price and quality of the medication is fairly similar throughout Georgia;

- **Labour-** The dairy sector is quite labour-intensive. Large and mid-sized farms hire their labour force. While in the case of household farms, they work the territory themselves;
- **Mechanization providers-** The main mechanization provider is the state LTD Mechanizatori, which has branches all over Georgia; private mechanization service providers are also very common, and often less expensive than state mechanization;
- **Livestock importers-** Livestock with good genetics and high-breed qualities are the base of successful farming. Caucasus Genetics is the leading animal importer;
- **Combined feed, local producers and importers-** Alongside livestock breed types, combined feeding is a main determinant of good lactation and high-quality production. The local combined feed production companies are: Nutrimax, Agroqiziki, and Invet. Aside from Caucasus Genetics, the main feed importer is Sano. Whereas, silage is mainly produced by the farmers themselves.

A major drawback within the dairy sector is with inputs and low productivity, which directly relates to the inadequate feeding of animals, poor fertility of dairy cows, low genetic potential, inefficient reproduction management, and a short lactation period. These factors are often not addressed at the farm level because of gaps in knowledge, a lack of surplus income for upgrades, and the inadequate capacity of semi-subsistence farmers. It is estimated that an adoption of better feeding and lactation period management practices can nearly double the current productivity of dairy animals.

4.2 Vet Services

Veterinary services are vitally important for success within the sector. Without good veterinary services (veterinarians) and medicines, it is impossible to properly diagnose and cure cattle borne diseases. Georgian cattle are affected by several illnesses; the most severe being *brucellosis*, which causes poor reproductive performance, infertility, and stillbirths; and *mastitis*, which reduces both productivity and the longevity of cows and calves.

Veterinary services are mainly provided by the state, but also by a few private veterinarians. Thus, the veterinary department of the National Food Agency (NFA) holds a significant role. Medium and large-sized farms usually have their own veterinarians. While, small-sized farms obtain services from veterinary pharmacies, veterinarians working for larger farms, or from NFA veterinarians.

Currently, veterinary services are poorly developed and there is lack of modern information. One major problem is small farmers' limited readiness to pay for veterinary services (CARD & GFA, 2018). Moreover, there are very few young veterinarians entering the profession. This is driven by a low interest from the youth, who have little motivation to study veterinary sciences because of the low salaries. A further issues is that young vets often do not wish to work in villages, and would prefer to work in a vet shop or a some small private company on a low income (PIN, 2015). Further significant employers of veterinarians are the pet clinics located in larger cities.

4.3 Laboratories

Laboratories are required to inspect the health of animals, to conduct feed laboratory tests, and to check milk safety. Therefore, for high-quality dairy products, it is important to have access to good laboratory services.

The Ministry of Environmental Protection and Agriculture of Georgia is represented by the chain of the Laboratory of Ministry of Agriculture (LMA),¹⁴ which in the main cities check beef and dairy products to maintain food safety requirements (LMA, 2019). Besides which, there are several private laboratories, these, however, do not operate in the field of animal health or veterinary diagnosis. Private laboratories concentrate on food safety and offer food diagnostic services.

Laboratory analysis to check animal health (for example, blood tests for brucellosis and milk tests for mastitis), cost around 3-5 GEL per cow, which can be expensive for farmers to ascertain the health of their cattle at least twice a year.

It is almost impossible in Georgia to obtain a quality feed test, which is extremely important for proper feeding and thus create a productivity increase. Large and industrialized farmers have to send feed samples to Europe for analysis, which is very expensive.

Additionally, there are no laboratories in Georgia that can detect whether milk products are produced by raw milk or milk powder; the NFA instead conducts tests to detect whether milk products contain vegetable oil, and are therefore produced using milk powder. However, milk processors often do not trust those laboratory analyses which identify if products are produced from raw milk or powder.¹⁵ In order to double-check such results, dairy processing companies often send samples to France or Germany, which takes time and expense, and during which time the products would have already been removed from shops, thus notable damage would have already affected the processing companies. According to the association of dairy processors (Sakrdze), laboratories in Georgia use a universal methodology for various types of analyses, which is not the correct approach. Rather, Sakrdze requests specialized laboratory tests for milk and milk products using modern standards of analysis.

At present, limited access to adequate laboratories ensures small farms and households cannot viably check their cattle, products, or inputs (CARD & GFA, 2018). Food safety investigation is weak in regional laboratories and it is recommended that it be strengthened.

4.4 Associations

The role of associations includes coordination among sector representatives, advocacy of members' interests, and distribution of information. There are ten associations working within the dairy sector (in general, specific, or niche product associations). These associations attempt to help their members, though their efforts are still insufficient (ALCP, 2017).

¹⁴ Of the total, three are zonal diagnostic laboratories (Tbilisi, Kutaisi, Akhaltsikhe), and eight are regional laboratories (Gori, Marneuli, Dusheti, Gurjaani, Ambrolauri, Ozurgeti, Zugdidi, Batumi).

¹⁵ State (LMA) as well as private laboratories.

The most active associations are:

- The Dairy Georgia Association (Sakrdze) - of 40 dairy processors, with 15 active;
- The Georgian Dairy Association - combining 14 industrial farms, founded by donors;
- The Guild of Cheese Producers - uniting over 100 members in cheese production;
- The Milk Suppliers Business Associations - milk producers supplying other companies, with around 250 members;
- The Georgian Farmers Association - an umbrella association with over 3,000 members;
- The Shepherds Association of Georgia - an umbrella association in the sheep sector;
- The Tushetian Shepherd Association;
- The Guda Cheese Producers Association;
- The Goat Breeders Association;
- Farmer of the Future - uniting groups of small farmers and households, and large farmers and organizations and professionals.

Among these associations, only Dairy Georgia and Georgian Dairy have membership fees.

The main problems regarding associations is that their establishment based on donors' support, therefore when financing is resolved, they will commonly face sustainability problems. Besides this challenge, SMEs' believe that powerful members of the main dairy associations will not allow them to advocate their interests.

4.5 Extension Services

Most Georgian farmers have insufficient knowledge of the issues related to their sector. Consequently, extension services are very helpful to improving farming. Extension services are critical, particularly for small farmers and households, as large-scale farmers have better access and further sources of information and knowledge. In 2013, the Georgian government established certain state extension centers; 54 Regional Information and Consultation Centers (RICCs), located in each municipality, with 247 members of staff able to offer information to farmers, however their advice is limited. Aside from state extension centers, there are several non-state business support organizations providing farmers with extension services, such as: Farmer of the Future, STAR consulting, ABCO, Agroqiziki, Elkana, Georgia Business Institute, First Consulting Company, etc.

4.6 Research Centers

Research centers are extremely helpful, and necessary to study the sector, to reflect on the current situation, the existing constraints, and opportunities for development. Research related to the dairy sector is completed chiefly by local and international organizations. Local organizations are from both the state (the Scientific-Research Center of Agriculture - SRCA; the Georgian Academy of Agricultural Sciences - GAAS) as well as the non-state sector (ISET-Policy Institute; the Association of Young Economists Georgia - AYEG; GEC - systemic business consulting; Policy and Management Consulting Group - PMCG; The Caucasus Research Resource Center -

CRRC). It is important to mention there are also significant international centers (the Food and Agriculture Organization - FAO; Springfield Centre; the International Fund for Agricultural Development - IFAD; etc.)

4.7 Civil Society Organizations (CSOs)

Alongside governmental and donor organizations, non-governmental organizations are working to improve conditions in the sector, starting with increasing consumer awareness about regularly consumed products,¹⁶ and moving to the capacity building of private veterinarians throughout Georgia.¹⁷

Most customers are unaware of key information regarding the products they consume. They are not curious about the information label, nor do they consider the origin of the product, or care to buy products from appropriate facilities, etc. The main causes of poor consumer awareness are the economic and social situations.

4.8 Education

General and specific technical knowledge of agriculture is a very important requirement for both farmers and specialists in the dairy sector (e.g., veterinary practices, milk processor specialists, etc.). However, dairy farmers commonly lack enough specific technical knowledge to produce safe and high-quality milk.

Dairy sector education is currently provided by the Agrarian University of Georgia and by several vocational education training centers and colleges. Educated farmer will be more motivated, and sufficiently aware, to adopt new technologies and management methods.

An FAO (2017) survey showed that the majority of livestock farmers do not realize the connection between animal health care, food safety, and human health. The study reveals that about one-third of farmers have no knowledge about animal diseases. Furthermore, in most cases, farmers do not have the relevant knowledge to calculate risks, production costs, income and profit to ensure sufficient profitability. A low level of education in agricultural technologies continues to create serious obstacles for further development among local farmers. The current methods, which they are accustomed to, in most cases, do not provide sustainability under the conditions of the contemporary market (CARD & GFA, 2018).

4.9 Financial Services

Accessibility of finances and other financial services are vital for players within the sector. The financial sector is represented by fifteen commercial banks, 59 micro financial institutions, and two licensed credit unions (NBG, 2018). Besides which, there are four leasing providers and seventeen insurance companies¹⁸ with a fairly small market share (IFAD, 2018). The government

¹⁶ The most active: www.momxmarebeli.ge

¹⁷ GIPA's project is to establish veterinary associations across Georgia.

¹⁸ See: <http://www.insurance.gov.ge/Insurance-companies.aspx>

is also offering several low-interest loan products to support agriculture. Moreover, certain donors are subsidizing Georgian agricultural businesses (CARD & GFA, 2018).

Access to financing remains an acute constraint for innovative small, medium, and startup businesses due to high interest rates and a demand of collateral (new enterprises often do not have sufficient collateral or credit history). Bank loan officers are rarely trained on how to service the agricultural SME market, because agricultural loans represent only a small part of banks' lending portfolios (CARD & GFA, 2018). While, SMEs lack the knowledge to develop proper, viable business plans to make them attractive to financial institutions. Insurance products for livestock farmers have been newly introduced to the market and are not widely available, which leaves farmers' assets at risk. The government subsidized preferential agro credits are only given to farmers intending to purchase high-productive breeds (e.g., Holstein, Swiss Brown). However, farmers often lack knowledge about the feeding of such cows: for instance, it is essential for such farms to produce silage. Consequently, dairy firms face the same challenges as other SMEs in accessing funding, such as: insufficient knowledge, a lack of proper financial accounting, and no collateral.

4.10 Support Projects

As they are still developing, the roles of support projects are crucial both to Georgian farmers and the development of the sector. Within the last decade, many donor and state funded support projects have been implemented in the agricultural and, specifically, the dairy sector.

Notable current donor funded support projects are:

- *Alliances Lesser Caucasus Project*, a Swiss Development Cooperation (SDC) financed project, implemented by Mercy Corps Georgia using the M4P approach. The project facilitates the development of the livestock and honey market system, and the goal of which is to export livestock and beekeeping products. The timeframe of the project is 2017-2021;
- *Supporting dairy in Georgia* is an FAO-EBRD joint project. The project, launched in 2015, aims to support SMEs in becoming competitive on the market;
- *SQIL - Improving food safety and quality along Georgia's dairy and beef value chains* is a Land O'Lakes project and aims to reduce losses, and boost competitiveness, productivity, and the trade of milk and meat products throughout the whole chain. The project launched in 2019;
- *Dairy Modernisation and Market Access (DiMMA) Project* is IFAD's co-signed project with MEPA. The timeframe of the project is 2018-2024.

Government funded projects include:

- *The preferential agro-credit program* was initiated by the Ministry of Agriculture of Georgia in 2013 and is managed by the Agricultural Projects Management Agency (APMA). Eleven major banks are partners in the project;

- *Enterprise Georgia* was implemented by the Ministry of Economy and Sustainable Development of Georgia and the Ministry of Environmental Protection and Agriculture of Georgia.
- *The State Program to Support Dairy Production Agricultural Co-operatives*, implemented by the Agricultural Cooperatives Development Agency (ACDA), and initiated in 2016. Under the program, dairy cooperatives are supported by processing lines and are provided with technical support. The program presently has 26 beneficiaries across Georgia (ACDA, 2019).

In general, supporting projects have their own specific timelines, and after completion it is difficult to maintain, monitor, or accelerate their success. Coordination between governmental and donor projects is crucial to improve agricultural development.

4.11 Information and Awareness

Disseminating proper information to farmers, producers, processors and consumers in order to increase awareness about new technologies, regulations, and initiatives is vitally important. At present, the main sources distributing information are national and regional television channels and social media. There are special TV shows (e.g., *Ferma on GPB*) and segments about issues related to agriculture that provide certain pertinent information. Moreover, there are notable channels, like *Agro TV*, *Saperavi TV*, etc., alongside a magazine, *Agrarian Georgia*. Besides the traditional methods, there are internet sources (e.g., *agrokavkaz.ge*), which play a substantial role, particularly with the increasing significance of social networks.

4.12 Infrastructure

The dairy market is heavily dependent on public infrastructure, especially roads, accessibility to water, good irrigation, electricity, and a natural gas supply for processing. The central government is the main actor in these fields, and naturally the role of the municipal government is equally crucial.

5 Dairy Market Rules

The enabling environment of a market system illustrates the way actors in the market chain, and in supporting markets, do business. Moreover, it covers contextual issues, including macro-level economic and market trends, laws, policies and regulations, quality, trading and other standards, and informal norms in the economy, culture, and in society.

5.1 Legal and Regulatory Reforms (AA/DCFTA)

The Deep and Comprehensive Free Trade Area (DCFTA) is an integral part of the Association Agreement (AA) between the EU and Georgia, which was signed on 27 June 2014, and entered into force fully on 1 July 2016. The DCFTA eliminates customs duty on the import and export of goods and abolishes trade barriers between Georgia and the EU. On the path to European

integration, the biggest challenge for Georgia is to comply with non-tariff measures (NTMs), such as food safety standards, plant protection regulations, and veterinary regulations (NFA, 2019).

Meat and dairy products belong in the high-risk food category and for their export three primary requirements must be fulfilled:

- Product ingredients should comply with European Union requirements;
- Exporters should 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.) must be implemented in Georgia (CARD & GFA, 2018).

Aligning with EU legislation, Georgia has implemented the following food safety regulations to approximate a legislative basis for EU food safety regulations and standards:

- Food / Feed Safety, Veterinary, and Plant Protection Codes (2012);
- Decrees of the government of Georgia;
 - ✓ Food/feed general hygiene rules - №173, 25.06.2010
 - ✓ Special hygiene regulations for food of animal origin - №90, 7.03.2012
 - ✓ Rules for sale of food and animals in agricultural markets - №417, 31.12.2013
 - ✓ Rules of recognition of business-operators - №722, 26.12.2014
 - ✓ Rules of cattle identification and registration of their stalls - №764, 31.12.2014
 - ✓ Special rules for state control on food of animal origin - №55, 12.02.2015
 - ✓ Procedures for registration and state control of veterinary medicines, both imported and produced in Georgia - №327, 07.07.2015
 - ✓ General principles and requirements of traceability in food/feed safety, veterinary, and plant protection - №577, 10.11.2015
 - ✓ Technical regulation on food microbiological indicators - №581, 10.11.2015
- Ministers' orders on sanitary rules and norms on food quality and safety;
- Technical regulation on milk and dairy products - №152, 03.04.2015. (MOLI, 2015/2016).

In 2017, Georgia introduced the National Animal Identification and Traceability System (NAITS) that allows farmers and veterinary doctors to obtain information about an animal from ear tagging. The electronic registration system ensures not only the identification and traceability of animals, but it equally enables owners to include their animals in free vaccination programmes. Moreover, farmers are able to benefit from unimpeded milk deliveries to collection centers and dairy processing enterprises, and they are able to take their animals to slaughterhouses without any preconditions.

Some of the most important regulations affecting the development of the dairy sector are the technical regulations on milk and dairy products, which came into force on 1 August 2015. The regulations set quality and food safety requirements for dairy products, and define the strict naming of products on labels, such as “cheese”, “butter”, and “matsoni”.

The National Food Agency of Georgia (NFA) is designed to regulate the quality of milk and dairy products. The agency controls the veterinary and sanitary norms in terms of processing,

packaging, and storing. The agency's scope is to inspect and impose penalties for legal entities, however its remit does not cover household activities.

The NFA focuses on high-risk manufacture, like milk and dairy production, and they are developing an annual inspection list of companies within the food business operators' database for risks assessments. In addition to the annual inspection plan, the NFA also performs unplanned inspections based on any perceived emergencies (complaints, outbreaks of food poisoning, completed product test results, etc.) and a market monitoring program (taking product samples from retail chains for lab testing).

There are many constraints associated with the DCFTA and food safety regulations. The greatest challenge is the significant number of unregistered family farms that produce and sell milk and dairy products on a regular basis. According to Geostat, more than 97% of milk in Georgia in 2017 was produced by family farms. Furthermore, sector experts claim that up to 90% of cheese is produced by unregistered households who sell their unlabeled produce (mostly cheese) at open markets through intermediaries.

Another challenge relates to registered producers who find various ways to overcome the regulations by utilizing confusing and vague labeling to mislead consumers. For example, cheesemakers who use milk powder for cheese production label their products with names associated with cheese like "Chkinti" or "Imeruli". By doing so, the producer does not explicitly violate the law, as the name of the product does not contain the word "cheese", but consumers definitely perceive these products as cheeses.

It also noteworthy that consumers have little awareness regarding food safety regulations and their own roles in supporting the state's enforcement of these regulations. Many consumers do not react appropriately when they fall victim to food safety violations at different supermarkets or shops.

5.2 Standards and Accreditation

In order to start a milk or dairy operation no license or any official permission is required. The only regulatory obligation for all food producers (excluding baby food production) is to be registered as a "food business operator" according to the Georgia Law Code of Food/Feed Safety, Veterinary, and Plant Protection by the National Business Registry. Once a food operation is registered as a business operator, the National Food Agency is responsible for the company's inspection. The state inspection covers infrastructural, basic sanitary, and record-keeping requirements, and is performed in accordance with the General Hygiene Rules of Food/Feed Manufacturer/Distributors (government decree #173, 25 June 2010). While specifically for products of animal origin (decree #90, 12 February 12 2015) the "Special Rules for State Inspection of the Products of Animal Origin" are also applicable (MOLI, 2015/2016).

Secondary productions that thermally process raw milk, including dairy processors and slaughterhouses, are also required to implement the Hazard Analysis and Critical Control Points (HACCP) system, according to the special hygiene rules for products of animal origin. The

HACCP is not required by those operators who carry out primary production or hold small business operator status (whose annual turnover does not exceed 200,000 GEL).

On 1 March 2019, new regulations for food labeling came into force.¹⁹ Each enterprise must be complaint with Georgian laws, consequently, adequate labeling is now required for all dairy products within the market. While the NFA is responsible for checking that the law is being correctly adhered to.

The National Intellectual Property Center SAKPATENTI registers intellectual property and works in the field of Geographic Indication (GI). SAKPATENTI has already recorded various Georgian cheeses with appropriate Geographic Indication: Sulguni, Megruli suluguni, Svanuri suluguni, etc.

LEPL- The Georgian National Agency for Standards and Metrology (GeoSTM) provides the national standards: *“a document developed on the basis of a consensus and registered by the National Authority, laying down the rules, general principles or specifications for universal and multiple use in order to optimize different types of activities or their outcomes in the specific field”* (GeoSTM, 2019). The types of active standards in Georgia are as follows:

- International standard - a standard adopted by the International Standardization Organization (ISO, IEC/CEN, CENELEC);
- Regional standard - a standard adopted by the International Regional Standards Organization;
- Georgian standard (GES) - a standard which may be adopted on the basis of an international or regional standard, as well as by the relevant technical committee;
- Company standard - a standard developed by an entrepreneur themselves that covers the specific technical requirements met by a product, process, or service. Internal company standards do not require registration, nor are they deemed as a standard for other bodies;
- Declared standard - a standard applied by the producer, which refers to the application of the standard concerned, including internal company standards.

The NFA issues the following certificates concerning the food industry: Hygienic Certificates, Veterinary Certificates, and Phytosanitary Certificates. While the GeoSTM laboratory, with its relevant accreditation, issues a Calibration Certificate to confirm accurate functioning of measuring instruments, within the limits of the margin of error. Certificates of Origin are issued by the Revenue Service, a legal entity, which confirms that products fulfill their food origin criteria as defined by the relevant protocol within the agreement. Moreover, there are also several private accredited and certified companies that provide cheese quality certificates to dairies, which become essential for the sale of cheese.

¹⁹ See: <http://nfa.gov.ge/ge/media-centri/axali-ambebi0/siaxle1/2019-wlis-1-martidan-amogmeddeba-tegnikuri-reglamenti-momxmareblisatvis-sursatis-shesaxe-b-informaciis-miwodebis-sursatis-etiketirebis-wesis-shesaxe-b.page>

The core challenge within the standards and food safety assurance system is poor access to financing. SMEs face difficulties in funding the implementation of HACCP during production, as it requires suitable equipment and upgraded technology. Furthermore, there is a low level of awareness of the food safety standards to which products must comply.

5.3 Taxes and Business Regulations

Business regulations and the investment environment has a great impact on productivity, as it has a direct influence on the efficient distribution of resources in the private sector. The 2019 edition of the World Bank's Doing Business Report currently lists Georgia in 6th place, of 185, in their "Ease of Doing Business" ranking ([The World Bank](#), 2019). This is largely because Georgia allows voluntary value added tax registration during business incorporation. Additionally, entrepreneurs can start a company in a single process, and after registration they do not have to make a further visit to the Revenue Service for value added tax registration. It is also noteworthy that since January 2016 tax exemptions can be awarded to businesses from mountainous regions, according to the Law on the Development of Mountainous Regions.²⁰

The Social-economic Development Strategy of Georgia 2020 states that the following policies will be implemented in order to improve the investment and business environment:

- Strengthening the protection of property rights;
- Governmental support for the development of entrepreneurship;
- Strengthening mechanisms for the efficient resolution of commercial disputes;
- Improving investment legislation;
- Improving legislative and institutional mechanisms for free market competition;
- Improving mechanisms for the regulation of bankruptcy and the closing of businesses;
- Improving public services and enhancing the transparency of public administration;
- Ensuring flexible regulations (MOLI, 2015/2016).

Due to fierce global competition, business requirements generally experience rapid change and, hence, constant work is required to adopt business regulations within dynamic economic processes, and to improve the entrepreneurial and investment environment.

²⁰ See: <https://matsne.gov.ge/en/document/view/2924386?publication=3>

The key stakeholders suggest their foremost constraint is unfair competition, due to the large number of unregistered family farms (producing milk and dairy products like cheese), which do not pay value added tax (VAT) or other taxes (profit or income). While those unregistered farms produce, process, and sell dairy products on a regular basis, they are not subject to food safety regulations: they are out of the NFA's control. Accordingly, such "farms" have lower operational and production costs than registered farms and entrepreneurs, and they are able to sell their products at lower prices.

Another challenge associated with the business environment is the state procurement policy: state consolidated tenders often require a significant production of milk and dairy products, which SMEs are unable to fulfil.

5.4 Trade Policy

The Georgian government has attentively promoted free trade and actively cooperates with the EU and other existing trade partners in order to resolve problems concerning Georgian entrepreneurial access to export markets. As previously noted, the DCFTA aims to eliminate technical barriers to trade and to create a stable and growth-oriented policy framework that will enhance competitiveness and facilitate new opportunities for trade. The DCFTA sets zero tariffs on all food categories (only garlic is under quota), including potentially stimulating products for Georgian export - wine, cheese, berries, hazelnuts, etc. (The Economic Policy Research Center, 2014). In order to fully capitalize on the opportunities offered by the DCFTA, Georgia has first to bring its SPS (sanitary and phytosanitary) legislation in line with EU regulations for meat, dairy, and other products of animal origin. It should be mentioned that Georgia is a net importer of milk and dairy products, however, Georgia has a positive trade balance with a few countries, such as Armenia, Kazakhstan, and Tajikistan. Although the country is unable to concentrate on large-scale milk or dairy production, Georgia has been exporting niche products such as Sulguni (with GI) to the USA, Armenia, and China.

Georgia has benefited from the DCFTA in terms of increased welfare for its citizens, who have access to better quality products on the domestic market. On the other hand, the costs to local enterprises have increased due to the stringent EU compliance requirements. On the path to European integration, the greatest challenge for Georgia is, once again, to comply with non-tariff requirements, such as food safety standards and SPS measures.

5.5 Traditions and Norms

In the countryside, farmers do not see a need for proper animal feed and subsequently feed their cattle only on pastures, which are often over-grazed. There is a tradition of farmers herding cattle together (Nakhiri): animals from various farms are taken to a pasture and returned by a herder. Alternately, farmers themselves take their cattle to pastures for herding. Animals graze on pastures at most times of the year, and this requires minimal inputs or services. If a farmer is unable or unwilling to do a task (lack of time for animal care), the farmer employs a person for herding; the farmer ultimately buys a "service" from a herdsman (30 GEL per day on average).

Farmers sometimes rent cows to other farmers using compensation schemes. Reimbursement depends on the season: in the summer, a farmer often pays a herdsman in cash or pays in kind with processed products (cheese, butter), whereas, in winter the herdsman may receive a calf for their animal care.

The agreements between two actors, for example, milk collectors and farmers, are often based on verbal, informal arrangements. There are often informal agreements that farmers are paid on a weekly or bi-weekly basis, although at times advanced payments are also common. This relationship builds trust between farmers and collectors, and often milk collectors support farmers by delivering farm inputs (e.g., feed) on credit, to be deducted from the value of the milk (ISET Policy Institute, 2016).

From an economic standpoint, religion also influences the dairy market and its prices. The majority of Georgians are Orthodox Christians, thus during fasting periods, the demand for dairy products is much reduced and, accordingly, prices are also lowered. Naturally, after fasting the demand on dairy products increases, which creates upward pressure on dairy prices.

The chief disruption of such traditions and norms relates to food safety. Herders often do not pay enough attention to what their cattle consume en route to pastures: at times cattle eat plastic or other waste dangerous to animal health. Furthermore, a lack of proper feed leads to less productive cows.

6 Sectoral Constraints & Recommendations

This study's mapping and analysis of the dairy sector has identified certain general and firm level constraints, each disrupting growth and threatening the sustainable development of the sector. Some constraints mentioned in the previous sections are discussed in more detail below. Furthermore, based on the literature review and expert opinion, we have developed recommendations for each of the key limitations within the dairy market system.

Constraints	Recommendations
Low level of education: <ul style="list-style-type: none"> — Dairy farmers lack specific technical knowledge to produce safe, high-quality milk; — Farmers do not realize the connection between animal health care, food safety, and human health; — Farmers do not know much about animal diseases. In most cases farmers do not have the relevant knowledge to calculate risks, 	<ul style="list-style-type: none"> • Increase capacity of Dairy Farmers' Associations to unite dairy farmers and offer different services to members; • Develop training programs (e.g., in hygiene standards, basic processing) and provide training opportunities for farmers; <ul style="list-style-type: none"> ○ To improve knowledge and performance of smallholder farmers in the production and handling of safe milk.

production costs, income and profit to ensure sufficient profitability.	<ul style="list-style-type: none"> • Support agro-VET colleges; • Organize agricultural study tours and invite international dairy experts; • Create a demonstration unit (farm) aimed at creating value for both businesses and farming communities; • Improve extension services, which will provide better technical advice to enable farmers to improve farm productivity.
Low productivity: <ul style="list-style-type: none"> — Inadequate feeding of dairy animals; — Low fertility of dairy cows; — Low genetic potential of animals; — Poor management of reproduction and short lactation periods; — Knowledge gaps; — Lack of surplus income for upgrading investment and inadequate capacity of semi-subsistence farmers. 	<ul style="list-style-type: none"> • Intensification of farming, including infrastructure (milking machines, etc.) • Improve breeds (new breeds or cross-breeds); • Artificial insemination should be widely introduced and accessibility to farmers; with the implantation of highly productive breeds adapted to local conditions; • Develop animal feed production (silage, concentrate, etc.) • Facilitate breeding centers; • Stimulate farmers to start dairying in economically viable areas; • Reduce wastage and loss of milk through improved infrastructure (e.g., opportunities for (small-scale) cooling facilities); • Facilitate product diversification by small-scale processors and improve their competitiveness; • Facilitate access to affordable micro/small-scale processing equipment.
Veterinary services: <ul style="list-style-type: none"> — Lack of modern knowledge; — Medium and large-sized farms usually have their own veterinarians. Small-sized farms often use the service of veterinary pharmacies, veterinarians working in large-sized farms, or the National Food Agency veterinarians; 	<ul style="list-style-type: none"> • Improvement of the quality of veterinary services and increasing the accessibility of such services throughout the country; • Promote the veterinary profession among the youth; • Upgrade the curriculum and promote work-based learning in colleges and universities;

<ul style="list-style-type: none"> — Readiness to pay for veterinary services is very limited among small farmers; — In some municipalities veterinary services are not available; — There are very small numbers of young veterinarians entering the profession; — Facilitate access to affordable micro/small-scale processing equipment; — Lack of high-quality vaccines available throughout the country. 	<ul style="list-style-type: none"> • Promote private veterinary services; • Offer training opportunities and study tours.
Laboratories: <ul style="list-style-type: none"> — Poor quality of animal disease control; — Feed analysis; — Milk analysis. 	<ul style="list-style-type: none"> • Enable wide-scale access to robust and affordable testing kits for detecting poor-quality and adulteration at each level in the supply chain; • Improve and expand the quality of the laboratory tests; • Build laboratory staff capacity to strengthen access to quality diagnosis.
Access to finance: <ul style="list-style-type: none"> — Lack of financial resources, where dairy enterprises are not able to renovate their premises; — Farmers and entrepreneurs have limited knowledge of agro-loans; — Farmers lack finances to purchase high-breed cows or milking equipment. 	<ul style="list-style-type: none"> • Introduce co-financing schemes to enterprises to comply with standards and implement HACCP; • Introduce co-financing schemes for dynamic farmers to intensify their farming.
Food safety control: <ul style="list-style-type: none"> — Poor veterinary control and animal health; — Sanitary and phytosanitary control, an important aspect of preparation for the EU DCFTA (Deep and Comprehensive Free Trade Area); — Ineffective state control and unreliable food safety of locally produced products. 	<ul style="list-style-type: none"> • Strengthening the capacity of NFA: <ul style="list-style-type: none"> ○ To effectively control animal health; ○ To better control dairy enterprises; ○ To develop the tools to expand control areas.
Low awareness of consumers: <ul style="list-style-type: none"> — Poor consumer awareness in differentiating between the dairy 	<ul style="list-style-type: none"> • Involve dairy associations in awareness raising campaigns;

<p>products made of fresh milk vs. powdered milk;</p> <ul style="list-style-type: none"> — Consumers' low awareness of their role supporting state enforcement of the technical regulations on dairy products; — Registered producers find ways to overcome regulations via confusing and vague labelling of their products. 	<ul style="list-style-type: none"> • Educate consumers in the safe handling and use of milk, and how to identify poor-quality and adulteration; • Develop media campaigns (TV shows; social media promotion, etc.)
<p>Unfair competition:</p> <ul style="list-style-type: none"> — Registered vs. unregistered processors (tax and control); — The large number of unregistered family farms producing and selling cheese on a regular basis; — Lack of control of unregistered and incompliant enterprises. 	<ul style="list-style-type: none"> • Enhance registration of milk enterprises; • Develop more comprehensive control mechanisms; • Promote the seal of quality standards (as with Georgian Milk).
<p>Feed:</p> <ul style="list-style-type: none"> — Poor pasture persistence and management practices; — Lack of combined feed; — Lack of silage production (knowledge, technology, mechanization); — Lack of good feed, especially in the winter, in order to provide animals with the best nutrition. 	<ul style="list-style-type: none"> • Consider relevant agro-technical actions to increase the productivity of natural grasslands; <ul style="list-style-type: none"> ○ Seeding of beneficial grasses; ○ Fertilization; ○ Weed control. • The alternation of pasture plots; <ul style="list-style-type: none"> ○ Promote normal vegetation and increase the proportion of beneficial grasses.
<p>Coordination problem:</p> <ul style="list-style-type: none"> — Weak coordination among core value chain actors: <ul style="list-style-type: none"> ○ Poor coordination among farmers (lack of cooperation at the service level, e.g., veterinary, and collecting or processing milk); ○ Lack of cooperation between farmers and milk collectors; ○ Weak cooperation between farmers, and retailers and the final consumers. — Poor coordination among governmental bodies; — Ineffective coordination among the sector stakeholders. 	<ul style="list-style-type: none"> • Promote cooperation among farmers through associations or establishing cooperatives; • Promote cooperation among farmers and milk collectors by establishing innovative measures; • Facilitate cooperation among farmers, processors, retailers, and the final consumers; • Establish a stakeholder platform for better coordination among stakeholders (public, private, civil society).

6.1 Sectoral Constraints & Recommendations at Firm Level

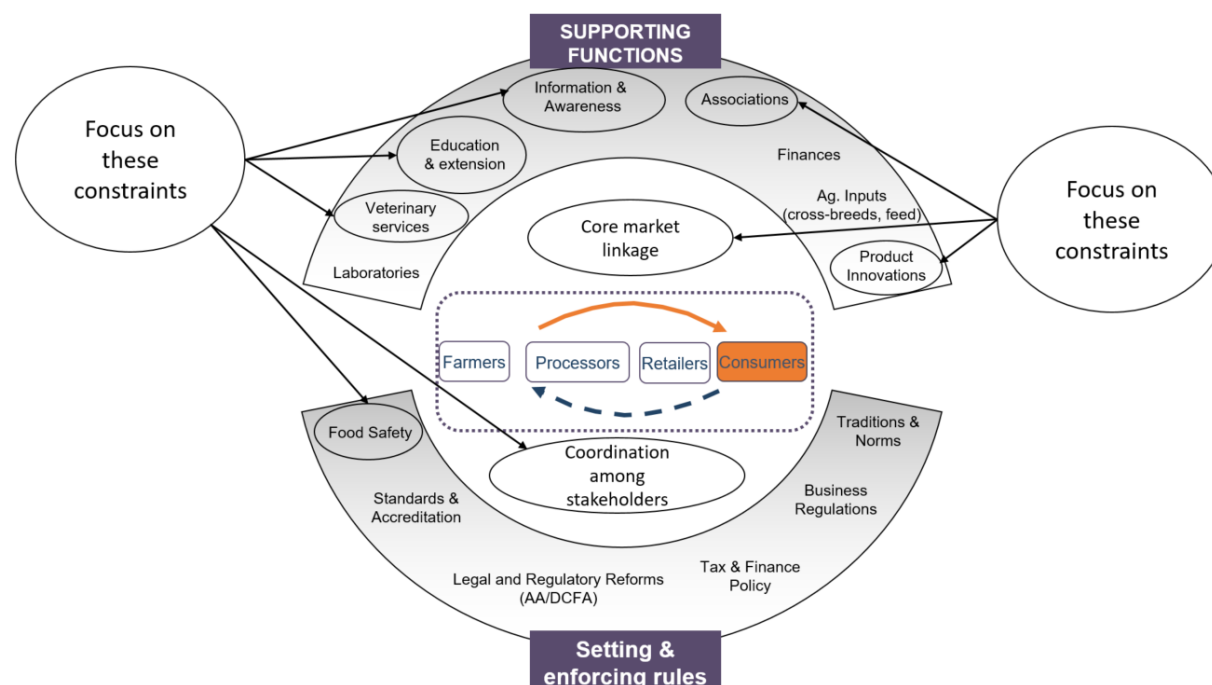
One of the main firm level constraints is connected to the unfair levels of competition between registered and unregistered enterprises, and those producers creating cheese from milk powder with those making cheese from raw milk.

Constraints	Recommendation
<ul style="list-style-type: none"> — It is not obligatory to comply with legal requirements for milk processing when making cheese or other dairy products for home consumption. An obligation will be enforced from January 2020. All producers will be obliged to satisfy food safety and hygiene regulations, which will be challenging. 	<ul style="list-style-type: none"> • Support dynamic farmers to comply new regulations (technical, financial); • Increase the capacity of Dairy Farmers' Associations to help farmers meet the new regulations; • Improve the knowledge and performance of sellers and small-scale processors in milk hygiene and handling.
<ul style="list-style-type: none"> — Lack of control of unregistered and incompliant enterprises. NFA inspections concentrate on registered enterprises, and unregistered cheese production continues to undercut compliant production that creates unfair competition, thus destabilizing the entire sector; — Unlabelled production of cheese made from milk powder. Increasing amounts of imported milk powder are being used in cheese making, but without commensurate transparency in labelling, thus undermining the potential added value of raw milk dairy production. 	<ul style="list-style-type: none"> • Strengthening the capacity of NFA: <ul style="list-style-type: none"> ○ To better control dairy enterprises; ○ To design new control mechanisms; ○ To increase the human resource capacity of the NFA.
<ul style="list-style-type: none"> — The majority of the dairy enterprises lack the financial resources to arrange and renovate their premises. 	<ul style="list-style-type: none"> • Introduce co-financing schemes.

6.2 Recommendations for Key Interventions

While there are many constraints in the sector, the research team recommends a focus on certain aspects that will have significant potential in solving the systemic challenges within the sector. In the doughnut chart (Figure 6), we propose project intervention in the dairy system.

Figure 6: Proposed Project Intervention in the Dairy System



Market linkages & coordination among stakeholders- Strengthening backward and forward linkages among actors will help overcome inefficiencies in the sector. To achieve this, it is important to develop profitable market linkages between farmers and dairy aggregators or processors, and to promote long-term relationships among these actors. The current informal agreements between actors have some advantages (e.g., less costly for participants, the means of exchange are personalized), though the development of formal linkages (e.g., contract-farming) would better protect actors in the chain, ensure a stronger link between price and quality, and improve value added. This will thus provide better possibilities for the growth and development of the sector.

To improve coordination between the main stakeholders in the sector, it is important to establish the **National Dairy Development Board**, which will serve as a national dairy policy dialogue platform. The board will include representatives of the dairy market system. The National Dairy Board will also contribute to the identification of critical issues within the sector, elaborate sectoral development strategies, and address action plans among different stakeholders. The **National Dairy Strategy** should also outline a strategic growth plan for the industry.

Veterinary services- It is essential to improve the quality of veterinarians and increase the accessibility of their services throughout the country (particularly through private veterinary services).

Veterinary education programs at universities as well as in colleges can be upgraded and promoted among the youth, especially in rural areas. The provision of high-quality veterinary education and the development of private veterinary services are key to (i) equipping potential veterinarians with the necessary knowledge to perform efficiently, and (ii) to motivating the youth into studying veterinary sciences. Furthermore, in order to help practicing veterinarians acquire new skills and knowledge, training programs, masterclasses, and short practical courses at various colleges are recommended.

Enhance the knowledge and experiences of dairy farmers and processors- Some programs (especially donor-financed), from time to time, organize training in specific features related to the dairy sector, however, these opportunities are not available to the majority of farmers. The process would be aided by an increase in the related capacity of information-consultation centers, established in every municipality by the Ministry of Environmental Protection and Agriculture. It would help active farmers and processors acquire significant information about the different aspects of the dairy value chain, as well as provide details of upcoming regulations. Offering knowledge to farmers about breeding, feeding, and rearing, as well as regarding animal health control and farm hygienic norms would also greatly contribute to the development of the sector.

Awareness raising for food safety regulations- In order to implement the technical regulations on dairy products, it is necessary to determine clearly the rights and obligations of stakeholders, and to elaborate on the complex approach in order to solve the dairy sector's current problems. Strengthening the NFA, CSOs, BSOs and sectorial associations is essential if they are to play a key role in implementing food safety regulations. In particular, it is necessary for them to have sufficient human and financial resources in order to: (i) provide information to customers and producers regarding legislative changes; (ii) offer objective and independent assessments of the challenges to the public; (iii) exchange information with interested parties regarding international experiences; and (iv) organize and participate in information campaigns.

Awareness raising campaigns- Customers are simply not aware of the positive and negative effects of powdered milk (notably when containing vegetable oil), and they do not know how to act when regulations are violated. It is essential to design information campaigns regarding the potential threats of purchasing dairy products without labels and the possible damage it can cause to customers' health. The role of associations, as well as the NFA, is vital in this process.

6.3 Recommendations for Product Innovations

Until recently, only four types of Georgian cheese were consumed on the local market - Imeruli, Sulguni, Karkhnuli, and Guda. Each of these are quite salty, while world consumption patterns reveal that fewer and fewer salty products are being consumed around the globe. Furthermore, these four types of cheese are no longer high value products, as in the past, and are mostly sold unpacked and in bulk. Additionally, Imeruli, Sulguni and Karkhnuli cheeses are not matured, and only Guda is matured for at least two months before consumption.

Nevertheless, the demand for mature cheeses, or so-called the “European type of cheese”, is showing an increasing trend on the Georgian market. There are also many varieties of these cheeses from around the world, and some are gradually becoming popular on the Georgian market. The Tbilisi cheese festival, as well as “innovator cheese makers”, are responding to this increased demand and are serving the market with various types of cheese, such as: Tenili, Chechili, cheese matured in wine, nicely packed Guda, etc.

According to FAO Georgia, the development and promotion of Geographic Indications (GIs) and other origin-based labels on unique Georgian dairy products, “can help the country preserve its rich food heritage, while also raising producers’ incomes and driving economic growth”. The FAO and EBRD, in close cooperation with the Georgian biological association “Elkana”, are implementing two pilot GI products - Sulguni and Tusheti Guda cheeses. The project is working with producers to upgrade the existing GI specifications to be in line with modern production techniques (Tenili cheese producers are also being supported.)²¹

Promoting high-value dairy products (e.g., GIs) via festivals (including awards for the best cheese makers), masterclasses, study tours, and training programs, will help dairy processors respond to the increased demand and boost their incomes.

6.4 Recommendations for Strengthening Associations

At present, associations that operate in the dairy sector face two main challenges: sustainability and trust. Firstly, associations are established with donor support and funding, therefore once the financing is complete they face a sustainability problem. Secondly, often member farmers question other members’ privilege and power, and thus they only advocate for their own interests rather than mutual, shared views.

In order to strengthen dairy associations and increase their involvement in dairy sector development, intensive capacity building in both organizational and technical areas is required. Firstly, associations will increase their knowledge and awareness through intensive training about the role of associations in developed countries. Secondly, they will gain expertise in management and organizational techniques, which will assist them in effectively sharing that information with their members. Thirdly, associations will develop expertise in conducting campaigns to advocate for their members’ interests, with the assistance of experts. Lastly, they will gain access to valuable business and organizational relationships. This will assist the implementation of activities and the benefits gained through training, networking, and the advocacy of members’ interests, ultimately improving production, management efficiency, and overall profitability.

Another notable intervention may be establishing the linkages between associations and various supporting services within the dairy market system. This would allow members to improve their access to the different services, that in turn would improve coordination throughout the sector.

²¹ See: <http://www.fao.org/georgia/news/detail-events/en/c/902904/>

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Appendices

Annex 1. List of Interviewed Stakeholders

#	Name, Surname	Organization	Market Actor	Place
1	Lela Kobakhidze, Davit Qveladze	ALCP, Mercy Corps	Project Manager	Marneuli
2	Lasha Avaliani	NFA, head of veterinary department	Veterinary	Tbilisi
3	Davit Mamukelashvili	ACDA	Project Manager	Tbilisi
4	Mikheil Chichaghua, Davit Bostashvili	LTD Roki	Input Supplier, Expert	Tbilisi
5	Rusudan Gigashvili	Farmer of the Future	Input Supplier, Expert	Tbilisi
6	Kakha Koniashvili	Sakrdze	Processors Association	Tbilisi
7	Tamar Khatiashvili	Caucasus Genetics	Input Supplier	Tbilisi
8	Zura Masurashvili	Industrial Farm Owner	Farmer	Telephone
9	Sergo Imnadze	Tsikara	Coop, Lanchkhuti	Telephone
10	Giorgi Gasviani	Gvesos Ferma	Coop, Tsageri	Telephone
11	Petre Peikrishvili	Cooperative	Cooperative	Telephone

12	Mlxeil Chankotadze	Coop Zestaponuri	Coop, Zestaponi	Telephone
13	Badri Torua	Ind. Mewarme	Farmer	Telephone
14	Valeri Giorgadze	Coop Sazano Cheese	Head of Coop	Telephone
15	Shota Gongladze	TBC bank	Agro Loan expert	Telephone

The list of interview transcripts from recent ISET research conducted on milk and dairy products (ISET-PI, 2019).

#	Name, Surname	Organization	Market Actor	Place
1	Katerina Poberejna	FAO-EBRD, Georgian Dairy project	Sector Expert	Tbilisi
2	Eka Burkadze	STAR consulting	Food Safety Expert	Tbilisi
3	Dairy Georgia (Merab Chkhartishvili)	Association Georgian Dairy	Head of Assoc.	Tbilisi
4	Erekle Gamkrelidze	LTD Sante	Processor	Tbilisi
5	Petre Peikrishvili	Small farmer, coop	Small farmer, coop	Tbilisi
6	Mlxeil Chankotadze	Coop Zestaponuri	Coop	Tbilisi
7	Badri Torua	Ind. Mewarme	Farmer	Tbilisi
8	Gia Mikadze	NFA	Food Safety Expert	Tbilisi
9	Valeri Giorgadze	Coop Sazano Cheese	Head of Coop	Tbilisi
10	Vakhtang Kobaladze	momxmarebeli.ge	Food Safety Expert	Tbilisi
11	Zurab Tskitishvili	Expert	Dairy Expert	Tbilisi
12	Keti Gogotchuri	GFA	Association	Tbilisi

Annex 2. Buffaloes, Sheep, and Goats

Buffaloes- The proportion of buffaloes from the total amount of livestock is trivial and hardly affects the picture of dairy production. Consequently, Geostat reports buffalo and cow milk production figures jointly, although it does separately report the buffalo headcount in its Agriculture Census. According to the latest census in 2014, there were approximately seventeen thousand buffalo (less than 2% of total livestock), across 6,007 holdings in Georgia. Approximately 57% of these holdings were based in the Samegrelo-Zemo Svaneti region and they possessed roughly the same share of the country's total buffalo stock. The reason for such a concentration may well be Sulguni, the highly priced, brined Georgian cheese of Samegrelo origin, which typically uses buffalo milk as an intermediary product. Matsoni made from buffalo milk is also popular.

Kvemo Kartli and Kakheti were the second most Georgian regions in terms of buffalo headcount, each containing almost 900 buffaloes, spread roughly over 600-600 different holdings. It is also noteworthy that the only holding with 100+ buffaloes in 2014 was situated in Kakheti.

Sheep- Sheep and goats also contribute to the country's milk supply and their respective products have a high-price and niche market. Sheep milk is the primary ingredient for producing Guda cheese, which sells for 25-30 GEL/kg in Tbilisi supermarkets, while goat cheese reaches 40 GEL per kg. The famous Guda cheese, which is one of the few cheeses exported to the USA, is regularly produced in the high, mountainous region of Tusheti. The Alaznistavi's shepherd Tushuri Guda cheese was merited in 2017 by the Italian Slow Food, noting the shepherds "who reject shortcuts and continue to produce cheese and other food products while preserving naturalness, traditions, and flavors."²²

According to the Geostat's latest Agriculture Census there were approximately 943 thousand sheep, out of which 652 thousand were ewes. In 2014, sheep were spread among almost 20 thousand holdings in Georgia, and these holdings were concentrated in the Eastern Georgia, due to its availability of pastures. Slightly more than a quarter of the total sheep stock, and respective holdings, were based in the Kvemo Kartli region, while approximately half of the total stock was based in 4,030 holdings across Kakheti. Currently, only around 10% of ewes are milked (almost exclusively in Tusheti) to produce Guda cheese, and a small amount of Kalti and Chogi, which are less salty than Guda (Value Chain Analysis of the Georgian Sheep Sector, 2014). Frequently, Tushetian sheep farmers milk ewes and goats together, and mix the milk to make Guda, Kalti, or Chogi.

Goats- There were over 45 thousand head of goat spread across 6,868 different holdings, with Kakheti leading here too, with 31% of the country's total stock within 1,636 holdings. Samegrelo-Zemo Svaneti was the second largest, with 14% of the total goat stock over 1,518 holdings.

At present, there are a few semi-intensified goat farms in Georgia, like those run by Gogi Elanidze,²³ Lia Demetrashvili, and Levan Tsaguria.

²² See: <http://cheese.slowfood.it/en/cheese-2017-slow-cheese-awards/>

²³ See: <http://georgiatoday.ge/news/3270/A-Portrait-of-a-Tushetian-Farmer-as-an-Entrepreneur>



Annex 3. Profiles of Major Market Actors

#	Name of Actor	Type of Actor	Location	Short Profile
1	Sante GMT Products, LLC. Contact information: http://sante.ge/	Dairy Processor	Tbilisi	<p>Sante GMT, the largest dairy and juice production facility in Georgia, has received numerous OPIC loans to help the business expand business operations and increase production. Sante GMT expanded its business to include improved milk collection and better distribution infrastructure in Georgia. As a result, Sante GMT is increasing the standard quality of milk and other dairy products sold in the market in Georgia - making it safer for buyers and consumers.</p> <p>The project also established 20 new milk collection centers throughout rural Georgia. These collection centers are improving the livelihoods of thousands of rural farmers who assist with the company's procurement of local fresh milk.</p> <p>With the introduction of new production processes, consumers are also benefiting from new products that Sante GMT offers such as fresh milk and yogurt in PET bottles, organic dairy products as well as products that previously had to be imported, such as butter.</p> <p>Through OPIC's financial assistance, Sante GMT became the first producer of branded cheese in Georgia and is now an established brand name, holding the largest market shares in dairy products.</p>
2	Wimm Bill Dann / Soflis Nobati Contact information: 032 2 61 10 00	Dairy Processor	Tbilisi	<p>Russian dairy company acquired by Pepsico in 2010. Operates special milk collection centers throughout Georgia, installed tank fridges for smallholders to deliver milk, delivered to the WBD factory daily via carrier trucks. Matsoni, sour cream, Kefir and Milk are the most popular products of Soflis Nobati on the Georgian market. Started exporting to Azerbaijan and Armenia in 2012. (As of 2012) WBD had invested 28 million GEL in Georgia since 2007. In 2008 a brand new factory was built from scratch, new equipment and production lines were installed. Our own distribution was built which significantly helps with the control of complex supply chain issues.</p> <p>With Nee Policy of Company, they don't purchase now milk from small and medium farm holders, who are milking their cows with hand or mobile milking machines, WBD requirement is that farm should have milking parlors.</p>
3	Shiraqi Contact information: 599 563 578	Industrial Farm & Milk Processor	Dedoplistkaro municipality	<p>"Shiraki products" began operation in the market in 2007. At present, they produce: raw milk, cheese, cream, Sulguni, Smoked Sulguni, and etc. 12 different Products.</p> <p>Farm owns over 1200 Hectares of arable lands, 200 heads of Dairy cows, mainly Holstein breed. Farm is first ever Bio Registered Livestock farm in Georgia since 2018 (certified by Caucasert).</p> <p>Company is mainly selling its products in Carrefour chain.</p>
4	Chveneburi Ltd	Dairy Processor	Tbilisi	<p>The enterprise has been operating since 2006. It employs 6 women and 9 men. According to the owner, during 2007-2013 the enterprise even processed 15 tons of raw milk daily,</p>

	Contact information: 593 383 399 (Vazha Genebashvili)			but nowadays, due to the unfair competition and poor control on incompliant processors, it processes 2.5 tons of milk once in two days. The milk is supplied by the private person from Dedoplistskaro with refrigerated vehicle and enterprise pays 0.90 GEL per-litter, while according to the owner, per-litter price in Dedoplistskaro is 0.50 GEL, there are many milk collection centres and totally 20-25 tons of milk is produced there. HACCP is implemented in the enterprise. According to the owner, he had to hire 3 different consulting companies to implement HACCP standards over 3 years (totally 12 000 GEL was spent). It produces Imeruli and Sulguni cheese and distributes the products by 2 distribution cars to the shops of Tbilisi. In winter, raw milk is replaced by milk powder, since the price of raw milk and accordingly the price of final product increases, causing problems in sales. So, according to the owner, to keep the factory operational and maintain well-trained staff, which cost him high price, in winter he has to use milk powder. The main constraint for the business is unfair competition, poor market control and absence of any assistance from the government to the business.
5	Rati Rostomashvili / Odlisi LTD Contact information: 599 93 09 03	Dairy Processor / European Cheese producer	Telavi Municipality	Rati started his farming experience with buffalo farm 15 years ago. Then he added local Georgian breed dairy cows, but with low productive. Since 2015 he imported pregnant heifers from EU. Now he has 68 heads, average 1300 liter milk he gets every day. Since 2012 Rati Produces 11 sorts of Cheese: muchly, bito etc. He owns as well 11 Hectares own and 4 hectares of rented arable land to produce Silage.
6	Nikora / Day Product Contact information: (+995 32) 269 55 50	Dairy Processor	Tbilisi	One of the subsidiary companies of "Nikora" has produced dairy products since 2003. After rebranding in 2017, currently it is represented on the market as "Day Products". The main value of the brand is based on the production of healthy, ecologically friendly products. Company is selling: Milk, Cottage Cheeses, Ayran, Mozzarella, Cream Butter 82.5%, Sour Cream, Sulguni, Smoked Sulguni, Matsoni etc.
7	I.E Ramaz Nazarishvili / Iveri (Brand name) Contact information: 599 16 17 23	Dairy Processor	Shida Kartli, Gori.	Produces 1-1.5 tons of milk per day for making Sulguni, Imeruli, Georgian cheese, Smoked Sulguni. It has been operating for 5 years. 9 women are employed in the enterprise. It has recognition from NFA and is compliant with FS&H requirements. They are checking cheese in laboratory once in 6 months. The factory is equipped with all necessary equipment. Intermediaries are coming in place and are buying cheese and then sell it in Gori and Tbilisi markets and agrarian market
8	Kalina Georgia, Natural + Ltd	Dairy Processor	Tbilisi	Company employs 75 employees. Produces Sulguni and Imeruli cheese, about 500 kg in a day. Milk is collected from Kvemo Kartli villages. In 2016 implemented ISO. Products are sold in supermarket chains: Carrefour, Zgapari, Ori Nabiji. Also supply kindergartens, hotels, Tuberculosis dispensary and military army

	Contact information: 2 40 40 93; 2 40 40 94			
9	Chveni Perma Ltd Contact information: 595 70 11 00	Dairy Processor	Tbilisi	Company started operation in 2008 and is a daughter company of Nikora JSC. Employs 30 employees. Company produces several milk products, but raw milk is used only in cheese production. Around 10 tons of cheese is produced in a month. Milk is collected in Tsalka and Akhmeta. Products are distributed in Nikora chain stores. Company has HACCP implemented.
10	Atinati Ltd / Mikheil Kenchadze - Manager Contact information: 571 707 257	Dairy Processor	Kutaisi, Imereti:	Operates since 1989. The company was financed via millennium programme (20,000 GEL) The company employs 10 women and 15 men. The throughput is 1.5 t/day in low season and 2 t. in high. Mainly produces Matsoni (raw milk), sour cream (milk powder) and cottage cheese. Sources from 5 large farms. The price of the milk is constant 1 GEL per litre. The enterprise owns several refrigerator cars which are used for distribution in Kutaisi, Zestafoni and Tskhaltubo. Besides, for distribution of the products to Batumi and Zugdidi two dealers are used. HACCP was implemented through facilitation of foreign expert invited from Netherland. The company sells its product under label Avangardi. The brand is well-known in Kutaisi.
11	Samvel Darbinyan Contact information: 599 15 62 47	Dairy Processor	Ninotsminda, Samtskhe-Javakheti	Milk processor was established in 2009. Currently it processes 6 tons of milk/a day on a peak season and 3,5 tons/day the rest of the year on average. He collects milk from 400 farmers of Ninotsminda villages out of which 350 are SSLPs. The enterprise has 12 employees out of which 4 are women. The factory produces Georgian cheese, Sulguni, chechili, Imeruli, butter and sour crème and sells its products through the cheese intermediaries in Tbilisi. He has high motivation to upgrade and expand his business. Together with a partner (foreign citizen) he plans HACCP introduction and cheese export in Gulf countries and Iraq.
12	Santa Ltd / Darejan Kanteladze Contact information: 599 97 44 31	Dairy processor	Tsalka, Kvemo Kartli	They started cheese production in 2007. They own farm with 300 cows. In summer they are processing 3 tons of milk per day, 1.5 tons of milk is collected from village Santa from 30 farmers and 1.5 tons of milk is collecting from farm. Main products are Imeruli – 170 kg/day, factory cheese – 100kg/day, Sulguni 100 kg/day and Lori 20 kg/day, which is sold in Tbilisi based shops (Goodwill, Ori Nabiji,) and bakeries. 15 women and 15 men are employed part time in the factory. And 20 men are employed in production of Animal feed. They have recognition of NFA from 2016.
13	Vita Ltd / Giorgi Giorgadze-Manager Contact information:	Dairy processor	Tsalka, Kvemo Kartli	Factory is financed by Government – Agricultural Projects Managing Agency (www.apma.ge) and is processing 3-4 tons of milk/day. They are collecting milk from villages of Tsalka. The main product is Sulguni (70%), Imeruli (30%). Which are sold in Nikora, Ioli, Fresco, Smart, Carrefour. 7 women and 3 man are employed in the factory.

	555 33 11 22			
14	<p>Tsivi Cheese / IE Gocha Gagashvili-owner</p> <p>Contact information: 579 621252 www.tsivikveli.ge</p>	Dairy processor	Kurdgelaure village Telavi.	Dairy Enterprise has been operational since 2008. It produces: Sulguni, Imeruli, Parmesan, Mozzarella, Gouda, Feta, Cheddar. Cheese is sold in: Carrefour, Foodmart, Ori Nabiji, also in Duty Free of Tbilisi International Airport. Enterprise daily collects 1.5 Tons of raw milk from local 50-70 farmers, it owns also the farm. It has established HACCP. It is facilitated by MOLI project.
15	<p>Tsinskaro+ Ltd / Merab Dzirkvadze</p> <p>Contact information: 598 98 97 84</p>	Dairy processor	Tsinskaro village, Tetrtskaro	Enterprise has been in operation for 4 years. It is located in Tsinskaro village, Tetrtskaro municipality. Currently It is collecting 2 tons of milk from Tetrtskaro villages: Golteti, Tsinskaro, Kosalari, from 60-70 farmers. Enterprise is producing Sulguni (175kg/day) and Imeruli (100kg/day) cheese. Cheese is sold in Tbilisi based Supermarkets chain Zgapari, Foodmart and several small shops. 3 women are employed in enterprise. Currently they are finishing the construction of all new building for enterprise, which will be operational from the end of September, 2017, enterprise has been financed by ALCP programme. They do not have yet the recognition from NFA
16	<p>Kvarlis Baga</p> <p>Contact information: (595) 30 09 70</p>	Industrial Farm	Kvareli Municipality	Operation started since October 2013, Georgian dairy farm Kvarlis Baga is equipped with high-standard facilities and management systems, ensuring the production of high-quality fresh milk. After building additional facilities in 2014 Farm reached Milk production over 20 Ton/per day. The Farm owns 1000 head of Holstain dairy cows, 350 Hectars of Arable lands growing feed themselves.
17	<p>Eliis Kalta / Zura Masurashvili</p> <p>Contact information: 555 156 258</p>	Industrial Farm	Dedoplistskaro Municipality	Zura Masurashvili owns Farm in Dedoplistskaro Municipality named: "Eliis Kalta", having 50 dairy cows, he produces average 1000-1300 Litre of milk per day, selling to Sante. Zura own and hires over 100 hectares of arable lands in Dedoplistskaro and Signagi municipality, mainly producing feed for farm itself.
18	<p>Ferma Margebeli</p> <p>Contact information: 599 09 45 24</p>	Industrial Farm	Gardabani Municipality	Ferma Margebeli is one of the first industrial farm in Georgia since 2008, they own 100 head of dairy cows, milking average 550 Ton of milk per Year. Farm owns 64 Hectares of land and renting more 25 hectares where they are producing Grass and Silage. Milk they are selling to Sante.

19	Prodinvest Contact information: 271 71 63	Milk Powder Importer	Tbilisi	International dairy company operating since 1998 with focus on Business to Business (B2B) dairy ingredients. With offices in six countries across two continents PRODINVEST supplies customers in different countries with over 15.000 MT of dairy products every month. Since 2009 Prodinvest Georgia started operating, importing Butter and Milk Powders in Georgia. Products are: Skimmed Milk Powder, Full Cream milk powder, Whey Powders, Lactose, Dairy Proteins etc. Since 2019 company is offering ferments for cheese production, produced by DSM.
20	Caucasus Genetics Contact information: 593 187 238	Semen and farm equipment, live animal importer	Tbilisi	Caucasus Genetics Company was established in 2006. The company unites experts of livestock breeding and milk production sectors, stock-breeders and artificial insemination specialists. Company owns cattle and pig breeding center in Signagi Municipality. Caucasus Genetics is importing livestock: dairy and beef breeds for customers in Georgia. Company is a main player in Artificial Insemination market in Georgia.
21	Nutrimax Contact information: +995 32 2305335	Animal Feed Producer	Tbilisi	“NUTRIMAX” represents the company producing animal and poultry feed. It successfully operates in the Georgian market since 2009. Company’s purpose is to provide the farmers with high-quality animal and poultry feed, feed supplements and modern feeding methods. Modern and high-tech combined feed enterprise of „NUTRIMAX” was opened in September 2016. Company’s annual output of animal, poultry and fish feed reaches approximately 50,000 tons. The project was implemented by active involvement and consultations of TROUW NUTRITION, which ensures the new factory’s compliance with modern standards. TROUW NUTRITION will continue to actively participate in the factory and production management issues. This will provide establishment of European standards and offer high- quality products to consumers. Feed products, meant for poultry, livestock and fish sector, will supply not only Georgia but also the South Caucasus. Farmers are provided with free consultations, in order to maintain and even improve farming standards. Nutrimax is providing Feed for both: Beef and Dairy sectors with feed in different age and purpose animals: Restarters, fattening cattle’s, lactation and gestation cows. Company sales products through own shops, dealers and distributors in all Georgia.
22	Invet / Invet Feed Contact information: (032) 225 19 66	Veterinary drugs and Animal Feed	Tbilisi	Company Invet, Leader in Veterinary sphere, counts 18 years of successful activity on Georgian Market. Company’s career started in 2001 when the livestock service center was founded. Since its foundation, Invet exclusively provides import and realization of the latest European standards veterinary products. Company quickly got advantage on the market by providing high quality veterinary service, innovative approaches and implementing modern technologies. In just 3 years Invet was able to open 3 service centers and create a distribution network. In 2005 Invet started cooperation with pharmaceutical company “Davati”. As a result, new product of the local production – veterinary medicine has appeared on the market, Invet’s

				<p>and Davati's production based on Dutch primary goods, differ with high quality and efficiency. For now more than 50 types of veterinary drugs have been developed and produced, which are in a high demand not only on the local market, but are also successfully exported</p> <p>Since 2016 Invet owns Animal Feed Factory in Mtskheta. Company sales products through 8 own branches and different (about 850 unit) private Veterinary Shops in all Georgia.</p>
23	<p>AgroQiziki LLC</p> <p>Contact information: 599 567 131</p>	Animal Feed producer / Service Provider	Dedoplistskaro municipality	<p>AgroQiziki LLC based since 2011 in Dedoplistskaro Municipality. Since 2013 company is supplying Artificial Insemination Service for local farmers, importing semen from Ireland. Since 2015, with financial assistance from Moli in Kakheti project, AgroQiziki opened animal nutrition factory in dedoplistskaro and started supply to farmers directly to farm doors. Since 2018 company owns Mobile NIR Laboratory to make individual recipes to its clients. Company is producing: Prestarters for calves, grower feed for cattle, lactation cow and gestation cow feeds, as well as providing Concentrates Premixes. Since 2017 company is importing milk replacers for calves.</p>
24	Sano	Animal Feed Supplier	Tbilisi	<p>Sano's Company History Sano's history starts in the year 1976 with the foundation of Sano-Milk in Grafenwald, Lower Bavaria. The main business of Sano-Milk was at this time the distribution of milk replacers. Later they introduced mineral feed to their product range. It wasn't uncommon for them to sell their goods out of the car boot.</p> <p>Since 2016 Sano got sister company in Georgia, with Georgian shareholders. With big scale farmers they work individually, which means they are providing special recipes. They import as well concentrates and Mineral additives from 2%-20%. For calf feeding they import milk replacers, soon they are planning to start importing final feed for calves.</p>
25	<p>Sakrdze</p> <p>Contact information: 599 18 87 79</p>	Association of Dairy Processors	Tbilisi	<p>Dairy Georgia Association has about 40 members (15 are active). Out of them, 6 are large dairy processor (>10 t/day) and are paying a membership fee of 600 Gel/month, and have voice in decision making. The remaining members are SMEs and are paying a membership fee of 200 Gel/month; they lack a power in decision making. This association was funded by the donors: RED, MOLLI. The main benefit for the SMEs is that they are attending trainings, meetings, receiving news etc.</p>
26	<p>Georgian Dairy Association</p> <p>Contact information: 599 74 37 77</p>	Association of Milk Producers	Tbilisi	<p>Georgian Dairy Association is covering 14 industrial farms. The association is funded by FAO and EBRD and currently is at the stage of formation. The organization membership fee is 0.5 tetri per litre of produced milk. To become a member of this association farmers should meet some criteria, such as having proper milking space for cows, having compliant cowshed and producing safe milk and etc.</p>
27	<p>Roqi LTD / Biotechs</p> <p>Contact information: 568 100 190</p>	Veterinary Service / Laboratory	Tbilisi	<p>Distribution Company Roqi was established in 2006. Its main occupation is selling of agricultural and domestic animals' medicines, vaccines, food and food additives, full spectrum of animal care items. It has distribution services all over the country. Roqi provides services to up to 300 veterinary drugstores and farmer service centers, company is serving big and medium scale farms directly with consultation etc.</p>

28	Bioteksi LTD Contact information: 2407795 591807884	Veterinary Drug Manufacturer	Tbilisi	Company was registered in 1996. Bioteksi is part of Roqi LTD, which produces Veterinary drugs for roqi and exports to Asian countries. Company is producing around 150 different products: Drugs, Animal feed additives Etc.
29	Agricultural Cooperative Goats Farm Imedi / Lia Demetrashvili Contact information: 593164069	Goats Cooperative and Dairy enterprise	Shida Kartli, Gori.	Produces 1-1.5 tons of milk per day for making Sulguni, Imeruli, Georgian cheese, Smoked Sulguni. It has been operating for 5 years. 9 women are employed in the enterprise. It has recognition from NFA and is compliant with FS&H requirements. They are checking cheese in laboratory once in 6 months. The factory is equipped with all necessary equipment. Intermediaries are coming in place and are buying cheese and then sell it in Gori and Tbilisi markets and agrarian market.
30	Shurubumu Cooperative / Nona Kadarua – Manager Contact information: 577 576 655	Cooperative	Senaki, Samegrelo:	The building of the enterprise is already renovated; some equipment has been delivered by LEPL Agricultural Cooperatives Development Agency. However, the equipment is not installed, beside that the enterprise doesn't have refrigerator room. The management of the cooperative is a bit disappointed with the agency and its facilitation. The enterprise has a capacity to source 1.5 tonnes milk per day, but capacity of the pasteurizer is lower (0.5 tonnes). Establishment of HACCP is financed by USAID. The cooperative has an agro loan from TBC bank to construct and renovate the building. According to the management the enterprise is going to employ 2 women and 2 men in the beginning. The enterprise will start processing in September and will produce mainly Sulguni and Imeruli cheese, as well secondary products such as Nadughi, etc. The milk will be sourced from the members (11 members, from which 6 are refugees) of the cooperative and farmers (limited share, not more than 30% of milk may be sourced from non- members).
31	LMA – Laboratory of the Ministry of Agriculture Contact information: +995 32 253 09 68	Laboratory	Tbilisi and regions	The first veterinary laboratory in Georgia was established in 1907 and has been functioning continuously since then. In the 80s there was already a strong diagnostic laboratory network. In 2006 was created "Laboratory of the Ministry of Agriculture of Georgia", whose functions included diagnostics of plant pests and expertise of food products, in addition to the diagnosis of animal diseases. Accordingly, modern methods and techniques are currently conducted in all three directions. In March 2014, the Laboratory of the Ministry of Agriculture undertook international accreditation according to ISO 17 025, which is internationally recognized as a result of all the research conducted by the laboratory. Laboratory is in line with the ISO 9001: 2008 quality management system requirements.

				Currently, the laboratory network operates properly, which consists of 3 zonal diagnostic laboratories (Tbilisi, Kutaisi, Akhaltsikhe) and 8 regional laboratories (Gori, Marneuli, Dusheti, Gurjaani, Ambrolauri, Ozurgeti, Zugdidi, Batumi). State control of the laboratory is carried out by the Ministry of Agriculture of Georgia.
32	LTD Meganizatori Contact information: (+995 32) 2 30 57 21	Agricultural Logistics and Services Company (state owned)	Tbilisi and regions	The main directions of the activity 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 Is always ready to offer service in agricultural supervision to landlords who live in regions of Georgia. Also consults in: pesticides, high breed and high quality seeds, new technologies and implementing new cultures. Is capable to serve landlords in agro-terms around regions of Georgia, also provide automat plugging on time, with high quality during Spring and Fall. Also sowing, working out with herbicides, cultivation, harrowing, add mineral fertilizers and on-time harvesting without loss.
33	Agricultural Cooperatives Development Agency Contact information: +995 32 2 47 01 01	MEPA Agency	Tbilisi	Agency is a legal entity of public law subjected to state control of Ministry of Agriculture of Georgia. Agency is independent in its activities. It administers its work adhering to the principles of publicity and transparency and follows the Constitution of Georgia, international agreements and contracts of Georgia, legal acts, decrees and other legislative acts. Aim of the Agency: Promote rehabilitation of rural areas and agriculture through development of agricultural cooperatives; Provide social and economic development of rural areas; Improve productivity and competitiveness of agricultural production, increase profitability of production and develop national economics; Conduct state promotion events for agricultural cooperatives
34	RICCs – Regional Information and Consultation Centers – territorial bodies of MEPA Contact information: Depends on the region/municip ality	Consultation center	Regions	Main responsibilities and obligations are: <ul style="list-style-type: none"> Collecting information about agricultural lands in the municipality administrative-territorial boundaries; Creation of a complete renewable database of land and planting area during the agricultural year; Preliminary determination of the supervision, according to cultures, in the administrative-territorial boundaries of the municipality; Active participation in selection of targeted project, consultation and monitoring in the municipal administrative-territorial boundaries; Collection-processing and analysis of the price of agricultural products on the local market, as well as the cost of production means; According to the Georgian legislation, informing interested persons about legal and tax liabilities operating in agriculture; Timely informing population about the Ministry's policies and programs;

				<ul style="list-style-type: none"> • Etc. <p>Composes 9 regional level and 45 municipality level centers.</p>
35	momxmarebeli.ge Contact information: 239 90 19/18	Civil society organization	Tbilisi	<p>The site belongs to the NGO "Georgian Strategic Research and Development Center". The site is managed by the organization's user rights protection program. The Center has been working in the field of user rights protection since 2009 and has been established as one of the leading public organizations within several years in this sector. The center aims to provide protection of user rights by the governmental structures in the legislative and institutional level.</p> <p>The main directions of activities to achieve this goal are:</p> <ul style="list-style-type: none"> • Raise consumer awareness; • Monitoring of the activities of the state structures and the market; • Lobbying legislative amendments.
36	SRCA - Scientific-Research Center of agriculture Contact information: 2 05 35 00	Research organization	Tbilisi	<p>In order to restore the scientific-research activities in agricultural sector, the government of Georgia on 13th of February 2014 has established the LEPL Scientific-Research Center of Agriculture (SRCA). Based on the Act N162, the entire infrastructure of the LLC, Agro" and N(N)LE, Agro-Cartu" bases have been assigned to government of Georgia.</p> <p>General objectives of the center are:</p> <ul style="list-style-type: none"> • Explore-study, rehabilitate and develop local gene pool of the annual and perennial crops; • Set up the genetic bank; • Observe, evaluate and adapt the introduced species and varieties of crops in Georgia; • Arrange the standardization and certification systems for planting and seedling materials; • Study the land pool and restore the soil fertility of Georgia; • Endorse the bio-agro (organic) production, promote the ecologically safe food and harmonize it with international standards; • Advance technologies of the agricultural food processing and post-harvest management; • Measure the pests and diseases of plants and elaborate the integrated control systems; • Explore, restore and improve the population of local breeds of agricultural and domestic animals, poultry, fish and useful insects of Georgia; Research and adaptation of imported breeds; • Set up of electronic information bank; • Scientifically evaluate the risk probability, revealed in food and forage and work out the recommendations for the risk management bodies; • Communicate with the public, international, donor and non-governmental organizations; • Develop and promote the extension programs, spread the regional knowledge.
37	GAAS - Georgian Academy of Agricultural Sciences	Scientific organization	Tbilisi	<p>Georgian Academy of Agricultural Sciences, which was founded in 1957, is a legal entity under the public law, an autonomous research institution with autonomous rights funded by the state. The Academy defines priority given scientific directions, coordinates scientific-research activities, acts as a scientific advisor to the Government.</p>

	Contact information: (+995 32) 291 01 14 (+995 32) 291 03 90			<p>The Academy is engaged in solving the problems the country is facing in a multi-specialized agro-food complex. Therefore, the specific activities of the Academy is multifunctional. Its purpose is to provide scientific synergy of agricultural branches, in order to force the integration of science and maximally to use scientific potential.</p> <p>Academy is a member and cooperates with 20 - to international organizations. Is actively involved in international projects, conferences, meetings, trainings and more. Has expanded cooperation with foreign scientific centers.</p> <p>Academy of Agricultural Sciences, and a member of the Academy - the correspondents, and only last year, a total of 385 have been published - more than 35 scientific papers and they took part in - of various scientific board (conference, seminar, meeting); Academy strongly held round tables and workshops in various areas of rural areas.</p>
38	NFA – National Food Agency Contact information: + 995(32) 291 91 68	Agency	Tbilisi and regions	<p>The Agency's responsibilities and obligations include issues related to:</p> <ul style="list-style-type: none"> • Food / Animal Feed Safety; • Veterinary field; • Plant Protection; • Recognition of business operators; • Risk management and risk communication for food / animal food safety, veterinary and plant protection; • to inform the business operators and consumers about legal requirements in the food / animal food safety, veterinary and plant protection; • Raising professional qualifications of authorized persons; • Cooperation with state agencies, international, educational, scientific and consumer support organizations; • Issuance of permissions, certificates and licenses in accordance with the procedure established by the legislation of Georgia; • Develop a crisis management plan for the crisis situation in the country and submit to the Ministry; • Informing the relevant authorized bodies in case of detection of environmental pollution; • Ensure publicity of state control results, except confidential information established by the legislation of Georgia; • Issuing the enforcement sheet on enforced enforcement of the protocol on administrative offense in accordance with the Law of Georgia on Enforcement Proceedings.
39	Kartuli Natsarmi Contact information: 555 28 83 45	Dairy Processor	Tbilisi	<p>Established in 2014. Employees six men and six women. Are collecting milk from ten farmers from Marneuli, Tsalka and Dedoplistkaro villages. Are producing Sulguni and smoked Sulguni and Imeruli cheese. Are selling in Goodwill, Carrefour, Nikora supermarkets chains.</p>

40	Naturaluri Rdzis Gemo Contact information: 595 40 58 00	Dairy Processor	Vaqiri village, Signagi	Is established recently. Is located in Signagi. Collects 700 liters of milk from local farmer and sales in supermarkets in Tbilisi. Is facilitated by MOLI project.
41	Ketino Devdariani Contact information: 599 50 13 85	Dairy Processor	Bareti village, Tsalka	Established in 2004. Is collecting 1.5 tons of milk daily from 80 farmers in Arsarvani, Choliani, Bareti villages of Tsalka municipality. 3 females and 4 men are employed in enterprise. Product is sold in Small shops in Tskneti and Tbilisi, Gldani,
42	Cheese Hunt Ltd Contact information: 599 10 39 36	Dairy Processor	Ratevani village, Bolnisi	Is producing 5-6 tons of milk/day for making Sulguni, Imeruli, Smoked Sulguni, Cottage cheese. Milk is collected from 50 farmers from villages of Marneuli. Products are sold in Goodwill, Zgapari and Smart. 7 women and 13 men are employed in the factory. The factory is financed by RED project and also with Government State Preferential Agro credit.
43	Milken Ltd Contact information: 599 28 14 28	Dairy Processor	Rustavi	Operates since 2012. In 2014 enterprise was financed by ALCP programme (www.alcp.ge). Daily collects 2-2.5 tons of milk and produces different types and packaging Sulguni cheese, Braided Sulguni, Smoked Braided Sulguni, Small Sulguni cheese, Sulguni Sticks, Also Georgian Type of cheese. Milk is collected daily from 150-180 farmers living in Gardabani municipality villages. Production is sold in supermarkets chain, such as: Foodmart, Ori nabiji, Smart, Madagoni, Ioli. Brand name is Milkeni.
44	Nishebi Contact information: 593 58 13 55	Dairy Processor	Ruispiri Kakheti	Collects 1.2 tons of milk in high milking period and 350 litres of milk in low milking period from 30 farmers. Milk is collected from villages Ikalto, Kistauri, Ruispiri, Alvani, Ojio. Enterprise is producing Georgian cheese, Cottage cheese, Butter. Product is labeled and packed under name "Nishebi". They are selling product in Kakheti, Ajara, Tbilisi.
45	Mariami Ltd	Dairy Processor	Samreklo, Kakheti	Works since 2003. In 2014 was renovated to meet FS&H standards. Now collecting 3 tons of milk in high milking period and 1.2-2 tons of milk in low milking period from 170 farmers. Milk is collected from villages Samreklo, Samtavisi, Dedoflistkaro. Mainly Sulguni cheese is produced in enterprise, also cottage cheese and butter. Enterprise received Preferential Agro credit (40,000\$ in 3% interest rate).
46	Ajarian Milk Suppliers Business Association	Association	Dioknisi village, Khulo	Was established in February, 2017 by the owner of dairy enterprise Natural Produktsia Ltd, Arkadi Kakhadze. The goals of the association are: <ul style="list-style-type: none"> • advocate milk suppliers' interests on governmental and non-governmental level; • facilitate establishment of dairy associations in other regions of Georgia;

	Contact information: 593 67 75 75			<ul style="list-style-type: none"> • support the members in their efforts to • establish a business and receive grants; provide capacity building and awareness raising trainings to its members on improved milk quality and productivity; • provide periodic introduction of the existing legislation of dairy sector as well as the changes in the regulations to its members. <p>At present the association has about 65 members from Khulo municipality and all of them supply milk to Dioknisi based cheese factory. Annual membership fee is 50 Gel.</p>
47	Diko Ltd Contact information: 571 40 17 44	Dairy Processor	Partskhane bi village, Imereti	Was opened in 2011 (by UMCOR). However, the enterprise stopped operation soon. The status has changed in 2015 when Diko Ltd rented the enterprise. The company employs 5 women and 5 men and sources 0.3-0.6 tonnes of milk daily from 7-8 households (mainly refugees) and a farm. The enterprise mainly produces Matsoni and Imeruli cheese. The products are packed and labelled.
48	Zestafoni Cooperative Contact information: 599 18 77 47	Dairy Processor	Rodinauli Imereti	Has been operational since October 2016. Employs 4 women and 6 men. Processes 1500 lt/day and 400 litres/day in winter. Produces Sulguni and Imeruli cheese. The products are packed and labelled, branded as Zestaponuri and sold to HoReCa sector and shops of Zestaponi, Kutaisi, Batumi, and Kobuleti. Sources are mainly its members, currently 27 HH (milk price 0.8-1 GEL). The enterprise got grant via Elkana (PIN) programme and HACCP is also implemented by the programme consultant.
49	Akhali Produkti Cooperative Contact information: 551 55 00 17	Dairy Processor	Najakhavo village, Martvili	Is not operational yet. However, the enterprise has already made testing of production. The cooperative has been co-financed by LEPL Agricultural Cooperatives Development Agency (40,000 GEL own capital/108,000 GEL agency). The equipment is already installed. The cooperative plans to employ 8-10 men and women. The management also waits for an American expert who will help in implementation of HACCP standard. The maximum capacity of the enterprise is 3 tonnes per day.Plans to begin with producing Matsoni and then increase product line (Imeruli, Sulguni, soar cream etc.). The cooperative plans to participate in tenders. The cooperative unites 62 members.

Annex 4. Dairy Market System Mapping

Dairy Market Functions	Market Activities	Actors	Information	Actor 1	Actor 2	Actor 3	Actor 4	Actor 5	Actor 6	Actor 7	Actor 8	Actor 9	Actor 10
Core Function	Milk production	Lowland extensive farms	up to 4 cows	about 200 thousand holdings									
		Mountain extensive farms	migrating from summer to winter pastures and making cheese in general. Up to 20 cows	50-55 thousand holdings									
		Semi-intensified farms	mix-breeds	about 15 thousand holdings									
		Industrialized Farms	Horsteins, Swiss Browns	Kvarlis Baga	Shiraki	Shtori	Zura Masur ashvili	Teleti - Ferma Margebeli	Martkhop is Baga	Green Rancho	Dorani	Bakuri Ejibashvili	BukAgro
	Milk collection and transport	Milk collectors (with milk collection points)	service contracts with milk processors										
		Vehicle collectors	collects farm-to-farm										
	Milk powder import	Milk powder importers		Prodinvest									
	Milk processing	Milk product producers	Industrialized Processors	Sante / Lactalis	Soflis Nobati / Pepsico / Wimm Bill Dann	Milko / Eco food	Nikora	Natural +	Milkeni	Santa			
			Ice-cream producers	Barambo	Tolia	Nikora	Gurjaanis Nayini						
			Processed food producers	Sante / Lactalis	Marshe	Nikora							

			Medium scale processors	Tsivi	Shiraqi	Kobule turi	Tsintskaro						
			Home based processors										
			Niche market processors	Shiraqi (bio)	Santino (natural milk)	Natural + (natural milk)	Soflis Nobati (fresh milk)	Alaznistavi (Guda cheese)	Ana Mikadze (various type of cheese)	Lia Demetrashvili (goat cheese)	Rati Rostomashvili	Tsivi	
		Cheese producers	Home based processors										
			Industrialized Processors	Georgia Business Zone (Nino Zambakhidze)	Sanebo (Sante)	Alpia (Darejan Kantelidze)	Rati Rostomashvili	Tsezari	Badri Gogoladze / Cheese Hut				
			SME Processors	Levan Tsaguria (goat cheese)	Coops								
	Milk product import	Milk product importer	butter, cheese	President	Lurpaki (daniuri)	Valio	Viola	Finlandia					
	Milk product marketing & distribution	Milk product wholesalers & distribution companies	Domestic market	Extra Meat Ltd	Agro business Group Ltd	Papuna Ltd	Levan Abashidze I.E	Soplidan.ge	Aleko Mikeladze				
	Milk product selling	Supermarkets	Domestic market	Carefour	Spar	Fresko	2 Nabiji	SMART	Nikora	Agro Hub	Zgapari	Goodwill	
		Shops											
		Bazars											
		Horeca		Kakhelebi	Adjara Group	M Group	Radisson	Ambassador	Marriot	Biltmore			
		Exporters	Export to USA	Laki LTD	Tamani 1 (www.tamanifood.com)	Sun Breath Corps (Koba Sarukh							

						anishvili)							
	Consumption	Local consumers	Domestic market										
		International consumers	International market										
Supporting Functions / Service Provision	Input supply	Artificial Insemination (AI) providers	Companies	Caucasus Genetics (90%)	Agroqiziki								
			AI technicians	Ilia Mtvarelidze (Gori)									
		High-breed heifer importers	Holstein, Swiss	Georgian Dairy Association	Caucasus Genetics	Kondolelebi	Farmers						
		High-breed calve / heifer / cows providers	Local Industrial Farms										
		Farmers selling local breed calves / heifers / cows	Farmers / traders										
		Exporters of calves / heifer / cows											
		Landholders	State (central, municipal)										
			Private										
		Labor force											
		Silo producers		Markhopi's baga	Farmers								
		Mechanization providers	State	LTD Meqanizatori									

		Private										
	Combined feed producers (local)		Nutrimax (30%)	Agroqizi ki	Invet	Roster						
	Feed importers		Sano	Caucasus genetics (additive - schaum ann)								
	Feed producers (hay, alfalfa producers, etc.)											
	Machinery and Advanced technology providers		Roqi (rusudan gigashvili)	Gea (Levan Kobakhidze)	Card - Delavali's branch	Caucasus Genetics						
Veterinary service	Vet service providers	State	NFA									
		Private	Individuals									
	Vet manufacturers	vet medicines	Roki (rusudan gigashvili)	Invet								
	Vet medicine importers	vet medicines	Roki (rusudan gigashvili)	Invet	Megavet	Geovet						
Packaging service		cheese packaging service providers										
Associations			Georgian Dairy Association	Association Dairy Georgia (Sakrdze)	Georgian Milk producers	Sheep breeders Association of Georgia	Association Tushetian Shepherd	Goat Association (Lia Demetrasvili)	GFA	Cheese Guildia (Ana Mikadze)	Association Tushuri Guda Cheese	

Support Projects	Donors projects	ongoing projects	Mercy Corps' Alliances Lesser Caucasus Project	Georgia n dairy (FAO-EBRD)	Land O'Lakes	Caucasian Milk (gbdc fert)	FAO-ENPARD					
	Gov't Funded Schemes		APMA	ACDA	IFAD's upcoming project	Produce in Georgia						
Extension	Private	BSOs	Agroqiziki	Roki / Farmer of the Future	Invet	ABCO	GFA	STAR consulting	Georgia Business Institute	First Consulting Company	Elkana	
	State	RICCs										
CSOs			momxmarebeli.ge (csrdg)	GIPA / GRDP	RDA							
Research	Local Organizations	State	SRCA	GAAS								
		Private	ISSET-PI	AYEG	GEC	CRRC	PMCG					
	International		FAO	Springfield Center	IFAD							
Education	VET	Vocational Education Training centers	Agrarian University	Aisi								
	High Education	Universities	Agrarian University	Tsereteli University								
Finance	Banks	21	TBC	BOG	Terabank	VTB	Procredit	Credo	Liberty Bank			
	MFIs (MFOs and CUs)	69 & 17	Crystal	Swiss Capital	Riko	Lazika Capital						
	Leasing providers	5	TBC Leasing (70%)	BOG Leasing	Alliance Leasing							
	Insurance companies		GPI holding									

	Laboratories		Private	Qlab	Biotecks	Multite st	Agroqizi	Roki					
			State	MEPA / LMA, 11 across Georgia	Mobile laboratory (RICC)								
	Media		Local	TV show Ferma	Imedis dila	Maestro Business	BMG	Agro TV	Agro News	Agrokav kasia	Magazine Agrarian Georgia	Georgian Dairy	
	Infrastructure	Gov't	central, municipal	Roads	Water	Irrigation	Electricity	Gas					
Rules and Business Environment	Formal	Standards & accreditation providers	Standards and methods	MoESD / GeoSTM									
			Laboratory accreditation	MoESD / GAC									
			Quality standards	NFA	Caucas cert (bio)	Georgian Milk (ALCP)							
		Legal and regulatory reform implementers	Legal approximation for the EU DCFTA/AA	Parliament of Georgia	MEPA / NFA	MoESD	MLHS						
			Risk assessment and input on food safety requirements	MEPA / SRCA									
		Food Safety Regulators	Food safety strategy	MEPA / NFA									
			Veterinary, Sanitary and Phytosanitary control	MEPA / NFA									
			Water supply monitoring	MEPA / NFA									

			Food safety, plant protection and animal health control at the border	MoF / Revenue Service									
			Investigate fraud and attempts to mislead consumers	MoF / Investigate Service									
		Registrators	Animal, Farm and Food company registration	NFA / FAO									
		Trade Policy providers	Export and Import terms for cows and dairy products	MoESD	MoF								
		Taxes and Finance Regulators		MoF / Revenue Service	MRDI (mountain law)								
		State Procurement Policy	State	State procurement agency									
		Land Policy	State	NAPR	NASP	Municipalities							
	Informal	Traditions and norms	Nakhiri, cooperation, etc.	Farmers giving (renting) cows for milking	Farmers giving (renting) sheep for milking	common sense that Bebo's cheese is safe and healthy	lack of culture for paying vets / consultants	Distribution channel standards required by large retailers, Horeca, etc.	fasting influences the demand pattern				

Dynamic Processing Factories in Georgia						
#	Name of Producers	Contact Persion	Telephone	location	Size	
	Kvemo Kartli			Kvemo Kartli	<10 t/day	>10 t/day
1	Tsezari Dairy products Company	Tsezari Kakhadze		Sakdrioni Village, Tsalka		
2	JTA	Anzor Khinikadze		Tsalka		
3	Tsalka +	Valeri Kakhadze		Bumbati village, Tsalka		
4	Vita Ltd	Giorgi Giorgadze		Tsalka		
5	I.E Davit Buchukuri	Davit Buchukuri		Tsalka		
6	Santa Ltd	Darejan Kanteladze		Tsalka		
7	Ketino Devdariani	Ketino Devdariani		Bareti village, Tsalka		
8	I.E Aslan Davladze	Aslan Davladze		Imera village, tsalka		
9	Ruslan Khutishvili	Ruslan Khutishvili		Khando village , Tsalka		
10	BMB	Mikheil Avkofashvili		Ratevani village, Bolnisi		
11	Disveli Cooperative	Meri Makharadze		Bolnisi		
12	I.E Tamaz Mujirishvili	Tamaz Mujirishvili		Ratevani village, Bolnisi		
13	Cheese Hunt Ltd	Badri Gogoladze		Ratevani village, Bolnisi		
14	I.E Givi Gogebashvili	Givi Gogebashvili		Ratevani village, Bolnisi		
15	I.E Besik lazareishvili	Besik lazareishvili		Ratevani village, Bolnisi		
16	Sanakebo	Davit Gogiashvili		Ratevani village Bolnisi		
17	Milken Ltd	Iveri gabarauli		Rustavi		Large
18	Cheeseline Ltd	Zurab Zmanashvili		Teleti		
19	I.E Aleksandre Naveriani	Aleksandre Naveriani		Kapanakhchi village, Gardabani		
20	Tsintskaro +	Merab Dzirkvadze		Tsintskaro village, Tetrtskaro		
21	Imeruli Ltd	Ketevan Eqizashvili		Marneuli		
22	Orke Ltd	Mikheil Tevzadze		Tamarisi village, Marneuli		
	Kakheti			Kakheti		
23	MM Ltd	Mikheil Matiashvili		Velistsikhe village, Gurjaani		
24	Odlisi Ltd	Rati Rostomashvili		Telavi		

25	Dima Chalakhashvili	Dima Chalakhashvili		Ozaani village, Dedoplistskaro		
26	Tsivi Cheese	Gocha Gagashvili		Kurdgauri village, Telavi		
27	Shuamta	Levan Bezhanishvili		Zaqariadze str. Telavi		
28	Naturaluri Rdzis Gemo	Ramaz Janashvili		Vaqiri village, Signagi		
29	I.E Nona Nersesov	Giorgi Papuashvili		Dedoplistskaro, Kakheti		
30	I.E Vano Laliashvili	Vano Laliashvili		Dedoplistskaro, kakheti		
31	I.E Akaki Giorgelashvili	Akaki Giorgelashvili		Kurdgauri village, telavi		
32	Modebadze and Company	Aleksandre Modebadze		Dedoplistskaro		
33	Agromretsvi Badiauri	Davit Gvelukashvili		Badiauri Kakheti		
34	Nishebi	Davit Botkoveli		Ruispiri Kakheti		
35	I.E Giorgi Lolashvili	Giorgi Lolashvili		Dedoplistskaro		
36	Tibaani Kveli	Jemal Khatiashvili		Tibaani, Kakheti		
37	Levan Tsaguria - Goat cheese	Levan Tsaguria		Telavi, Kakheti		
38	Mariami Ltd	Jimsher Khatiashvili		Samreklo , Kakheti		
39	Nobeko Ltd			Dedoplistskaro		
40	Shiraki	Nikoloz Beniaidze		Arkhiokalo village, Dedoplistskaro		
41	I.E Lasha Matiashvili	Lasha Matiashvili		Lagodekhi, Kakheti		
42	Cooperative Alaznistavi	Giorgi Abulidze		Alaznistavi, Tusheti		
	Samtskhe Javakheti			Samtskhe Javakheti		
43	Georgian Business Zone	Beso Babunashvili		Akhaltzikhe		
44	Karen Simonyan	Karen Simonyan		Akhalkalaki		
45	Tsifora Ltd	Rezo Kachkachishvili		Akhaltzikhe		Large
46	Rafael Karoyan	Rafael Karoyan		Akhalkalaki		
47	Tsolak Grigoryan	Tsolak Grigoryan		Ninostminda		
48	Hakob Hambaryan	Hakob Hambaryan		Ninostminda		
49	Samvel Darbinyan	Samvel Darbinyan		Ninostminda		
50	Akhali Meskheti	Levan Beridze		Aspinda		
51	Misak Muradyan	Misak Muradyan		Akhalkalaki		
52	Misak Giloyan	Misak Giloyan		Akhalkalaki		
53	I.E Nigar Mamuladze	Omar Kovhadze		Oshora village, Aspindza		
54	Khiza Cooperative	Otar		Akhaltzikhe		
	Ajara			Ajara		
55	Natural +	Arkadi Kakhadze		Dioknisi village, Khulo		
56	Luka Teo Ltd	Rezo Garkrelidze		Chakvi Ajara		

	Imereti			Imereti		
57	Diko Ltd	Nargiz Sedashidze		Partskhanebi village, Imereti		
58	Atinati Ltd	Mikheil Kenchadze		Kutaisi city Imereti		
59	Zekari Ltd	Mamuka Dogonadze		Terjola Imereti		
60	Zestafoni Cooperative	Mikheil Tchankvetadze		Rodinauli Imereti		
61	Okriba Cooperative	Zviad Tkheshelashvili		Kutaisi Imereti		
	Samegrelo & Zemo Svaneti			Samegrelo & Zemo Svaneti		
62	Shurubumi cooperative	Nona Kardaria		Senaki, Samegrelo		
63	Akhali Oridukti Cooperative	Mamuka Danelia		Najakhavo village, Martvili		
64	Svanuri Ltd	Nodar Nakani		Mestia		
	Shida Kartli			Shida Kartli		
65	I.E Ramaz Nazarishvili	Ramaz Nazarishvili		Shida Kartli, Gori		
	Tbilisi			Tbilisi		
66	Chveneburi Ltd	Vazha Genebashvili		Tbilisi, Didi Dighomi		
67	Chveni Perma Ltd	Vasil Dzotsenidze		Tbilisi		
68	Kalina Georgia , Natural + Ltd	Nino Basharuli		Tbilisi		Large
69	Kartuli Natsarmi	Giorgi Tokhadze		Tbilisi		
70	Sante	Erekle Gamrkelidze		Tbilisi, Kakheti highway		Large
71	Wimm Bill Dann / Soplis Nobati			Tbilisi		Large
72	Milka / Respublica			Tbilisi		Large
73	AgroHub			Tbilisi		Large

ACDA Dairy Program Beneficiaries					
#	Name of Producers	Contact Person	Telephone	location	Size
	Kvemo Kartli			Kvemo Kartli	<10 t/day
1	Tanadgoma	Amiran Kochalidze		Gardabani, Kumisi	
2	Chemi Ojakh			Marneuli, Algeti	
3	Sopeli Saakadzis Meurneoba			Tbilisi	
4	Ktsia 2014	Ednar Kakhidze		Tsalka, Avranlo	
	Kakheti			Kakheti	
5	Soplis Sakhli			Akhmeta	
	Samtskhe Javakheti			Samtskhe Javakheti	
6	Endet ertobis nobats	Givi Endeladze		Adigeni, Benara	

7	Iveria	Merabi Saginadze	Aspindza, Iveria
8	Khiza		Aspindza, Xizabavra
9	Derchelis Nobati		Adigeni, Patara Zanavi
10	Triala		Adigeni, Lelovani
11	Imedi	Merab Tsulukidze	Adigeni, Moxe
12	Shir-ant		Ninotsminda, Jigrasheni
13	SSK		Ninotsminda, Gorelovka
14	Asko		Ninotsminda, Gorelovka
15	Stela		Akhalkalaki, Vachiani
	Samegrelo & Zemo Svaneti		Samegrelo & Zemo Svaneti
16	Shurobumu		Senaki, Akhalsopeli
17	Akhali Produqti		Martvili, Lekhaindrao
	Shida Kartli		Shida Kartli
18	Kartuli Nobati		Kaspi, Kotsakhuris Khevi
	Mtskheta-Mnianeti		Mtskheta-Mnianeti
19	Mtia		Tianeti, Khevsurtsopeli
20	Kvaris Mta		Tianeti
	Racha-Lechkhumi & Kvemo Svaneti		Racha-Lechkhumi & Kvemo Svaneti
21	Tsikara		Lanchkhuti, Gvimbauri
22	Racha 2017	Tinatin Tskhadadze	Ambrolauri, Lixeti
23	Gvesos Perma		Tsageri, Gveso
24	Chrela 2017		Tsageri, Lasuriashi
25	Kvedrula		Oni, Kvedi

Georgian Dairy Association (GDA) Members - Industrialized Farms				
#	Name of Producers	Contact Person	Telephone	Location
1	LTD "Shtori"	Mamuka Kobakhidze		Kakheti, Akhmeta
2	LTD "Dorani"	Mamuka Tsilosani		Kakheti, Akhmeta
3	N/A	Mindia Gushkashvili		Kakheti, Kvareli
4	LTD "Santa"	Darejan Kanteladze		Kvemo Kartli, Tsalka
5	KLGA	Jemal Khatiaashvili		
6	I/E	Giorgi Berishvili		Shida Kartli, Saguramo
7	LTD "Niba-2008"	Bakur Ejibashvili		Kvemo Kartli, Gardabani

8	LTD "Geofarm"	Giorgi Aslanikashvili		Kvemo Kartli, Gardabani
9	Ltd Kvareli Baga	Levan Arkania		
10	Modebadze and Co	Aleksandre Modebadze		Kakheti, Dedoplistskaro
11	IE Zurab Masurashvili	Zurab Masurashvili		
12	Ltd Shiraki+	Nikoloz beniaidze		
13	I/E	Roin Terterashvili		
14	I/E	Kvicha Laliashvili		

Associations related to Dairy sector				
#	Name of Association	Chairman		
1	Dairy Georgia Association	Kakhaber Koniashvili		
2	Guid of Cheese Producers	Anna Mikadze		
3	Georgian Dairy Association	Merab Chkhartishvili		
4	Guda Cheese Producers Association	Giorgi Abulidze		
5	Georgian Farmers Association	Nino Zambakhidze		
6	Shepherds Association of Georgia	Beka Gonashvili		
7	Association Tushetian Shepherd	Eva Murtazashvili		
8	Goat Association	Lia Demetrashvili		
9	Ajarian Milk Suppliers Business Association	Arkadi Kakhadze		
10	Farmer of the Future	Rusudan Gigashvili		

Distribution companies		
#	Name of Distiburion company	Contact
1	I.E Levan Abashidze	
2	I.E Papuna Koridze	
3	Extra Meat Ltd	
4	Agro business Group Ltd	
5	Georgian Farmers Distribution Company / Soplidan .ge	
6	Aleko Mikeladze	
#	Exporter Companies to USA	Contact
1	Tamari 1 corp.	https://www.tamanifood.com/
2	Laki Ltd.	
3	Sun Breath Corps	

Supermarket Chains					
#	Supermarket	Branches around Georgia	Phone/Fax	E-mail Address	WEB
1	Carrefour	8		customerservicetbl@mafcarrefour.com	https://www.carrefourgeorgia.com/
2	Fresco	8		info@fresco.ge	http://www.fresco.ge
3	Foodmart	51		info@foodmart.ge	http://foodmart.ge/
4	Goodwill & Marche	8		marketing@goodwill.ge	http://goodwill.ge/
5	Universam	2		-	-
6	Nikora holding	242		info@nikoratrade.ge	http://nikorasupermarket.ge/
7	Ori Nabiji	95		info@orinabiji.ge	https://orinabiji.ge/
8	Smart	12		-	-
9	Vejini	5		-	-
10	Zgapari & Baia	19		info@zgapari.ge	https://zgapari.ge/
11	Magniti	150		info@magniti.ge	http://magniti.ge/
12	Ekonomix			info@ekonommix.ge	https://www.facebook.com/pg/EkonomMix/about/?ref=page_internal
13	Spar			office@spar-georgia.com	https://spargeorgia.com/
14	Belaruski			-	-
15	Agrohub	2		info@agrohub.ge	https://www.facebook.com/agrohubge/
16	Europroduct	12		info@europroduct.ge	http://www.europroduct.ge
17	Furshet			-	-
18	Madagoni			-	https://www.facebook.com/pg/madagonimadagoni/about/?ref=page_internal

Financial Institutions							
#	Commercial Banks	General Director	Date of Licensing	Address	Phone/Fax	E-mail Address	WEB
1	JSC "TBC Bank"	Vakhtang Butskhrikidze	20.01.1993	#7, K. Marjanishvili Street, 0102, Tbilisi, Georgia		info@tbcbank.com.ge	www.tbcbank.com.ge

2	JSC "Bank of Georgia"	Archil Gachechiladze	15.12.1994	#29a, Gagarini Street, 0106 Tbilisi, Georgia		welcome@bog.ge	www.bog.ge
3	JSC "Liberty Bank"	Giorgi Kalandarishvili	10.02.1993	#74, I. Chavchavadze Avenue, 0162 Tbilisi, Georgia		info@libertybank.com	www.libertybank.ge
4	JSC "Basisbank"	David Tsaava	11.04.1993	#1, Ketevan Tsamebuli Avenue, 0103 Tbilisi, Georgia		info@basisbank.ge	www.basisbank.ge
5	JSC "VTB Bank – Georgia"	Archil Kontselidze	07.05.1995	#14, G. Chanturia Street, 0102 Tbilisi, Georgia		info@vtb.com.ge	www.vtb.com.ge
6	JSC "Cartu Bank"	Nato Khaindrava	09.01.1997	#39a, Chavchavadze Avenue, 0162 Tbilisi, Georgia		info@cartubank.ge	www.cartubank.ge
7	JSC "ProCredit Bank"	Ketevan Khuskivadze	13.05.1999	#121, A. Kazbegi Avenue, 0160 Tbilisi, Georgia		info@procreditbank.ge	www.procredibank.ge
8	JSC „Silk Road Bank"	Alexander Dzeladze	13.03.2001	#2 Zaarbruken Square, 0102 Tbilisi, Georgia		posta@bta.ge	www.bta.ge
9	JSC "Ziraat Bank Georgia"	Mehmet Ucar	16.03.1998	#61, D. Agmashenebeli Avenue, 0102 Tbilisi, Georgia		tbilisi@ziraatbank.ge	www.ziraatbank.ge
10	JSC "Isbank Georgia "	Ozan Gur	30.07.2015	#140B, D. Agmashenebeli Avenue, 0102 Tbilisi, Georgia		s066201@isbank.com.tr	www.isbank.ge
11	JSC "TeraBank"	Thea Lordkipanidze	25.01.2008	#3, Ketevan Tsamebuli Avenue, 0112 Tbilisi, Georgia		info@ksb.ge	www.terabank.ge
12	JSC "Halyk Bank Georgia"	Nikoloz Geguchadze	29.01.2008	#40 shartava Street, 0160 Tbilisi, Georgia		info@hbg.ge	www.halykbank.ge
13	JSC" PASHA Bank Georgia"	Arda Yusuf Arkun	17.01.2013	#15, Rustaveli avenue, Tbilisi, 0108, Georgia		office@pashabank.ge	www.pashabank.ge
14	JSC" FINCA Bank Georgia"	Vusal Verdiev	06.08.2013	#71, Vazha-Pshavela avenue, Tbilisi, 0181, Georgia		fincageo@finca.ge	www.finca.ge

15	JSC" Credo Bank"	Zaal Pirtskhelava	20.03.2017	#27, Tabukashvili street, Tbilisi, 0108 Georgia		info@credo.ge	www.credo.ge
#	MFOs	General Director	Date of Licensing	Address	Phone/Fax	E-mail Address	WEB
1	JSC MFI"GeorgianCredit"	Giorgi Naskidashvili	04.10.2006	Al.Kazbegi Ave.N30, Tbilisi			http://www.georgiancredit.ge/
2	JSC MFI"AlphaExpress"	Ketevan Darsadze	10.01.2007	Paliashvili Str..N53,ბოფსN2, Tbilisi			https://www.alpha-express.ge/ge
3	LLC MFI"IntelExspressGeorgia"	David Tavartkiladze	23.03.2007	Aghmashenebeli Ave.N89/24, Tbilisi			http://ge.inteliexpress.net/
4	LLC MFI"RicoExpress"	Tamar Gogodze	11.04.2007	Chavchavadze Ave.N68–70, Tbilisi			http://rico.ge/
5	JSC MFI"Crystal"	Malkhaz Dzamua	18.09.2007	Nikea Str..N22, Kutaisi			http://crystal.ge/
6	JSC MFI"Finagro"	Aleqsi Akhalbedashvili, Emzar Nanoshvili, Levan Bodaveli	30.11.2007	Mshvidobis Ave. N1a, Gori			http://www.finagro.ge/
7	LLC MFI"Imercredit"	Konstantine Kotishadze	18.12.2007	Galaktion Tabidze Str.N12--Rustaveli Ave.N11, Kutaisi			http://www.imercredit.ge/
8	LLC MFI"CreditService"	Kakha Darsania	20.12.2007	Ioane Unargia Str..N11, Zugdidi			-
9	JSC MFI"LazikaCapital"	Besik Shengelia	21.01.2008	K. Gamsakhurdia Str.N59, Zugdidi			https://www.lazikacapital.ge/
10	LLC MFI"Creditservice+"	Guram Kandelaki, Akaki Aroshidze	06.02.2008	Pekini Str..N33, Tbilisi			http://www.creditservice.ge/
11	LLC MFI"MonetaExpressGeorgia"	Aleko Baghdavadze	13.06.2008	Chavchavadze Ave.N59/14, Kutaisi			-
12	LLC MFI"Tbilmicrocredit"	Aleqsandre Tarieladze	17.10.2008	Aghmashenebeli Ave.N147, Tbilisi			http://www.tbmc.ge/en/

13	LLC MFI"GlobalCredit"	Temuri Nikoladze	30.10.2008	Chavchavadze Ave.N33, Kutaisi			http://globalcredit.com.ge/
14	LLC MFI"EasyCredGeorgia"	Kakha Kakhiani, Tea Zubadalashvili	20.02.2009	Mitskevichi Str.N64, Tbilisi			http://www.easycrud.ge/
15	JSC MFI"GeorgianCapital"	Mamad Ragimovi, Zaur Adalatogli	28.05.2009	Rustaveli Ave.N37, Tbilisi			http://www.georgiancapital.ge/
16	LLC MFI"BCredit"	Gocha Arsiasvili	04.09.2009	Kavtaradze Str..N5, Tbilisi			http://bcredit.ge/
17	LLC MFI"MicroInvest"	Revaz Megrelishvili	25.11.2009	Paliashvili Str.N36a, Tbilisi			-
18	LLC MFI"City Credit"	Otar Tsanova	15.12.2009	Al.Kazbegi Ave.N26,b.26, Tbilisi			http://www.citycredit.ge/
19	JSC MFI"InvestGeorgia"	Tamar Kupreishvili	31.08.2010	Paliashvili Str..N33, Tbilisi			http://investgeorgia.ge/ge/
20	LLC MFI"SmartFianance"	Tamar Abukha	18.10.2010	Rustaveli Ave.,Tsereteli Str.N1/2, Kutaisi			http://smartfin.ge/index.php/ka/
21	JSC MFI"SwissCapital"	Givi Kereselidze	18.10.2010	Kazbegi Ave.N2, Tbilisi			http://swisscapital.ge/
22	LLC MFI"NovaCredit"	Melor Asatiani	29.12.2010	Vazha-Pshavela Ave. N8, Tbilisi			http://novacredit.ge/
23	LLC MFI"BaniCredit"	Vakhtang Chikovani	04.02.2011	Machabeli Str.N4, Tbilisi			http://banicredit.ge/
24	LLC MFI"Swiss-Credit"	Darejan Silagadze	18.03.2011	Pushkini Str..N9, Kutaisi			http://www.swiss-credit.ge/
25	LLC MFI"LiderCredit"	Giorgi Vardosanidze	10.06.2011	Tamar Mefe Ave.N11, Tbilisi			http://www.leadercredit.ge/
26	JSC MFI"GIC"	Vakhtang Maghradze	21.09.2011	Z.Paliashvili Str..N96, Tbilisi			http://www.gico.ge/
27	LLC MFI"Creditor"	Ekaterine Kakhiani	29.09.2011	Mitskevichij.N6,b.15, Tbilisi			http://creditor.ge/
28	JSC MFI"CreditPlusGeorgia"	Mariu Tankunasi	28.10.2011	Uznadze Str. N111, Tbilisi			http://creditplus.ge/
29	LLC MFI"GiroCredit"	Giorgi Gugumberidze	20.12.2011	Tsotne Dadiani Str.N193/195/197, Tbilisi			http://girocredit.ge/

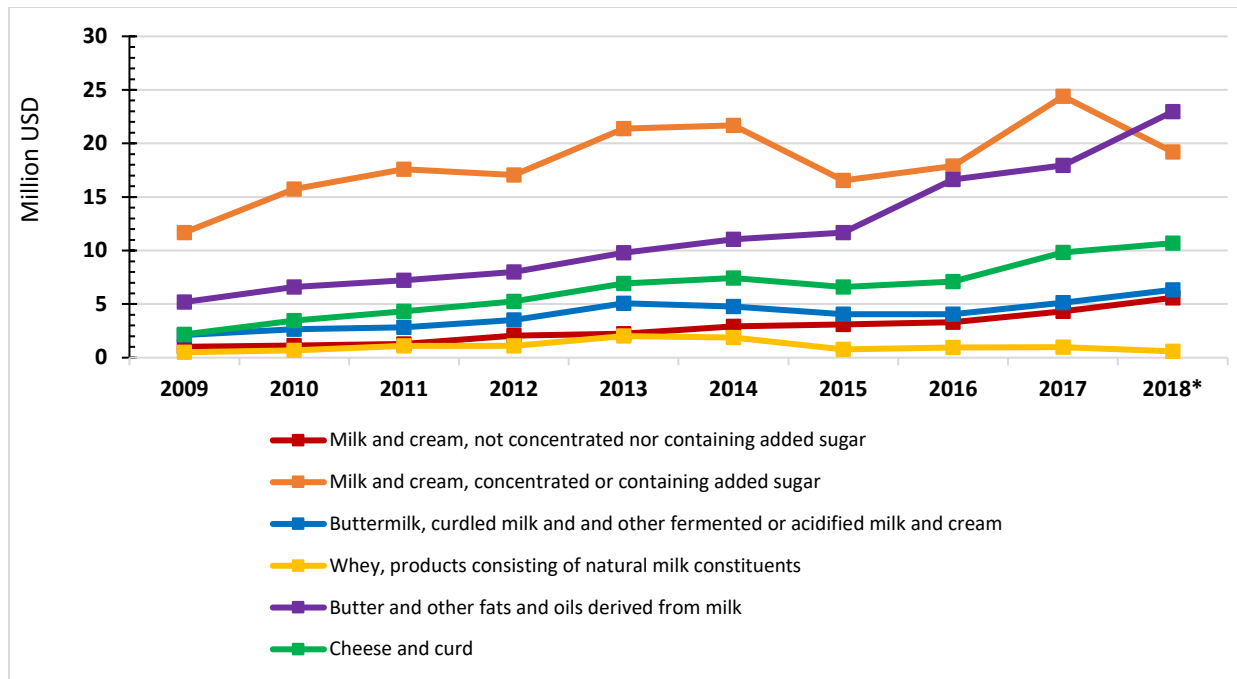
30	LLC MFI"UniverseCredit"	Irma Kamushadze	26.03.2012	Omar khizanishvili Str.N30, II Floor, Tbilisi			http://universecredit.ge/
31	LLC MFI"ContinentalCityCredit"	Giorgi Gogvadze, David Alimbarashvili	03.05.2012	A.Beliashvili Str. N145, Tbilisi			http://www.cccredit.ge/
32	LLC MFI"Credex"	Zurab Akhalaia	29.10.2012	Chabukiani Str.N7, Tbilisi			http://credex.com.ge/
33	LLC MFI"CapitalExpress"	Vakhtang Gokieli	14.02.2013	Tamar Mefe Ave.N7, Tbilisi			http://www.capitalexpress.ge/
34	JSC MFI"MicroBusinessCapital"	Gia Petriashvili	19.04.2013	S. Tsintsadze Str.N41, Tbilisi			http://www.mbc.com.ge/
35	LLC MFI"PIAZZACAPITAL"	Sulkhan Jortmenadze	15.08.2013	Parnavaz Mefe Str.N25a, Batumi			http://piazzacapital.ge
36	LLC MFI"GorgianInternationalMFI"	Ashraf Emil Sadek Mekhail	24.09.2013	Aghmashenebeli Ave.N86, Tbilisi			http://www.gicredit.ge/
37	LLC MFI"MJC"	Makhare Jamrishvili	04.11.2013	Northern Part of Leonidze-Meskhishvili Crossing, Rustavi			-
38	LLC MFI"GeorgianFinancialCredit-GFC"	Gai Iakov Tsadiki,Badri Paichadze	25.03.2014	S. Tsintsadze Str.N12,Entrance N12,Floor 5, Ap. N5, Tbilisi			http://misogfc.ge/
39	JSC MFI"EuroCredit"	Mikheil Nonikashvili	15.04.2014	Giorgi Saakadze 2nd exit N11., Tbilisi			http://www.eurocredit.ge/
40	LLC MFI"BusinessStartupCredit"	Levan Lakandarishvili	28.05.2014	Tsinandali Str.N9, Tbilisi			http://www.bscredit.ge/
41	LLC MFI"FinCredit"	Merabi Mardaleishvili	15.07.2014	D.Aghmashenebeli Ave.N157, Tbilisi			http://fincredit.ge/
42	JSC MFI"MicroFin"	Lela Kiknadze	27.01.2015	Aghmashenebeli Ave.N154, Tbilisi			http://www.microfin.ge/
43	LLC MFI"Bermeli"	Eter Beridze-Melikishvili	22.06.2015	Pharnavaz Mefe Str.N93/99, Batumi			http://bermeli.ge/
44	LLC MFI"Central"	Imran Khizar Khait	17.12.2015	Vakhushti Bridge towards the direction of			https://central.ge/

				Saakadze Square, Area N16/77, Tbilisi			
45	JSC MFI"CredFin"	Murad Morchiasvili	19.04.2016	Tsotne Dadiani Str. N127, Tbilisi			http://credfini.ge/
46	LLC MFI"SmartInvest"	Irakli Konjaria	27.04.2016	Vazha-Pshavela Ave. N2a, Ap. N4, Tbilisi			http://www.smartinvest.ge/ka/
47	JSC MFI"eCapital"	Tengiz Lashkhi	07.06.2016	Chavchavadze Ave.N29,III floor, Tbilisi			https://eloan.ge/
48	LLC MFI"4Finance"	Lasha Bzarashvili	29.12.2016	Gamrekeli st. N19, Floor 3, Office 306, Tbilisi			https://www.vivus.ge/
49	LLC MFI"CrossCredit"	Giorgi Tavadze	08.02.2017	Al.Kazbegi Ave.N35b, Tbilisi			-
50	LLC MFI"Lendo"	Giorgi Ramazashvili	14.02.2017	Tsotne Dadiani Str. N7, Floor 5, Tbilisi			https://lendo.ge/
51	LLC MFI"ExpressCapital+ "	Jansugh Zeishvili	23.02.2017	Melikishvili Str.N46, Batumi			-
52	LLC MFI"BBCredit"	Martin Kolu, Giorgi Khvedeliani	26.04.2017	Tsotne Dadiani Str.N7,Commercial area Na310-1, Tbilisi			https://amica.ge/
53	LLC MFI"FamilyCredit"	Diana Balkhamishvili	22.06.2017	Chavchavadze Ave.N42, Kutaisi			http://www.familycredit.ge/
54	LLC MFI"Solva"	Shota Kekelia	28.06.2017	Tsotne Dadiani Str. N7,Office A106, Tbilisi			https://www.solva.ge/online-kredit/
55	LLC MFI"Lendup"	David Bobokhidze	30.06.2017	David Aghmashenebeli Ave N240, Tbilisi			https://lendup.ge/
56	LLC MFI"Profinance"	Teona Lomadze	18.08.2017	Slava Metreveli Str.N18, Tbilisi			http://profinance.ge/
57	LLC MFI"CreamFinanceGeorgia"	Aleksandre Lomadze	08.09.2017	Dolidze.N5a, Tbilisi			https://www.crediton.ge/
58	JSC MFI"Okay"	Nikoloz Feriashvili	20.12.2017	Shavshavidze Ave. N21, Tbilisi			-
59	JSC MFI"Kredit 2018"	Nikoloz Charkviani	28.12.2018	Chavchavadze Ave. N39a, Tbilisi			-
#	Credit Unions	General Director	Date of Licensing	Address	Phone/Fax	E-mail Address	WEB

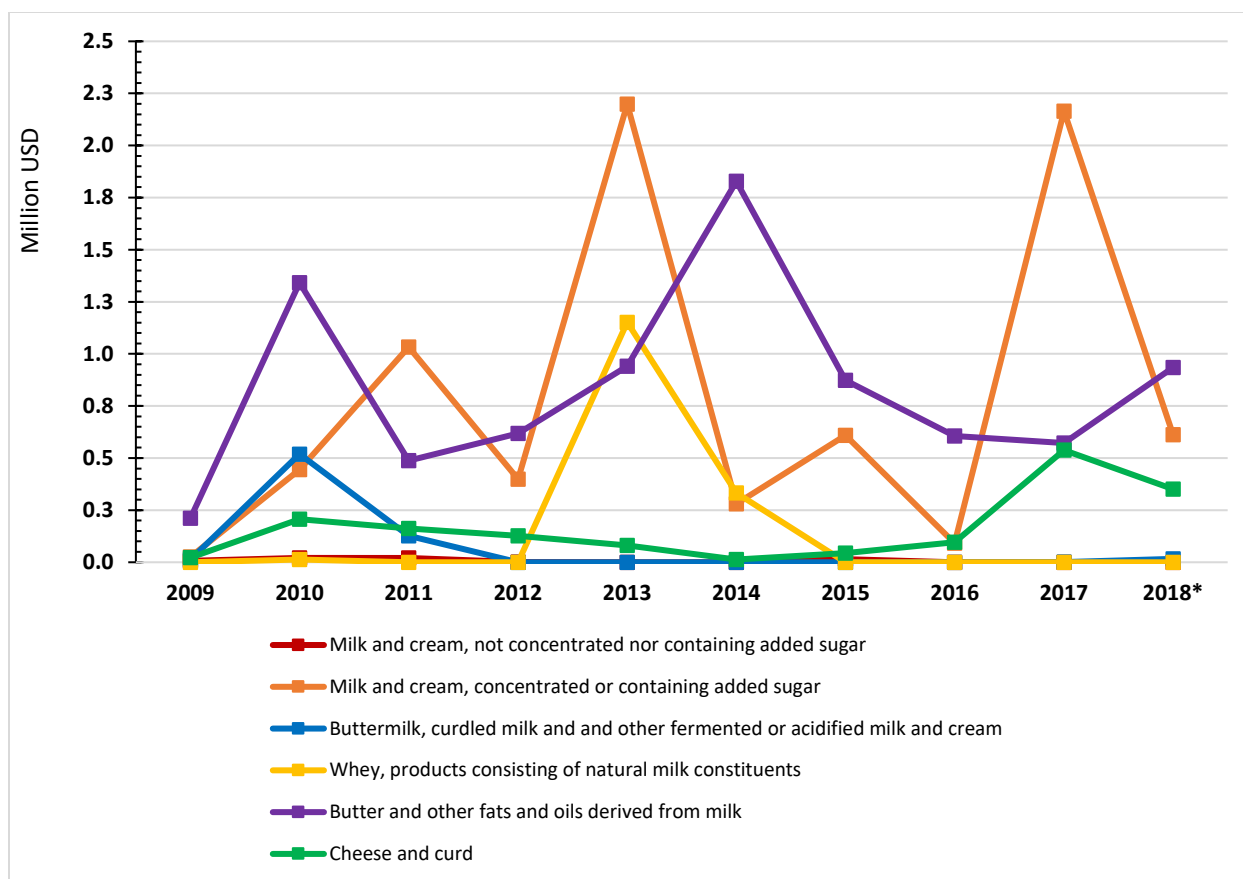
1	Registered Cooperative Credit Union "GA Capital"	Lela Kakhidze	19.12.2002	Aspindza, Samtskhe-Javakheti			
2	Registered Cooperative Credit Union "Khutsubani"	Mamuka Tsetskhladze	16.01.2003	Rustaveli Str.N138a, Kobuleti, Adjara			
	<i>Source: National Bank of Georgia</i>						
#	Leasing Providers	General Director	Date of Licensing	Address	Phone/Fax	E-mail Address	WEB
1	TBC Leasing			Chavchavadze ave. #76, Tbilisi		info@tbcleasing.ge	http://www.tbcleasing.ge/
2	Georgian Leasing Company (subsidiary of the BOG)			Melikishvili Ave. #8a/Tatishvili St. #1, Tbilisi		info@leasing.ge	https://leasing.ge/
3	BHL Leasing			Ketevan Tsamebulis #1, Tbilisi		info@bhlleasing.ge	https://www.facebook.com/BHLLeasing/
4	Alliance Group Leasing			47/57 M.Kostava Str., 0179, Tbilisi, Georgia		leasing@agl.ge	http://www.agl.ge/

Annex 5. Graphs and Statistics

Annual Imports of Milk and Dairy Products – **million USD**



Annual Exports of Milk and Dairy Products – **million USD**

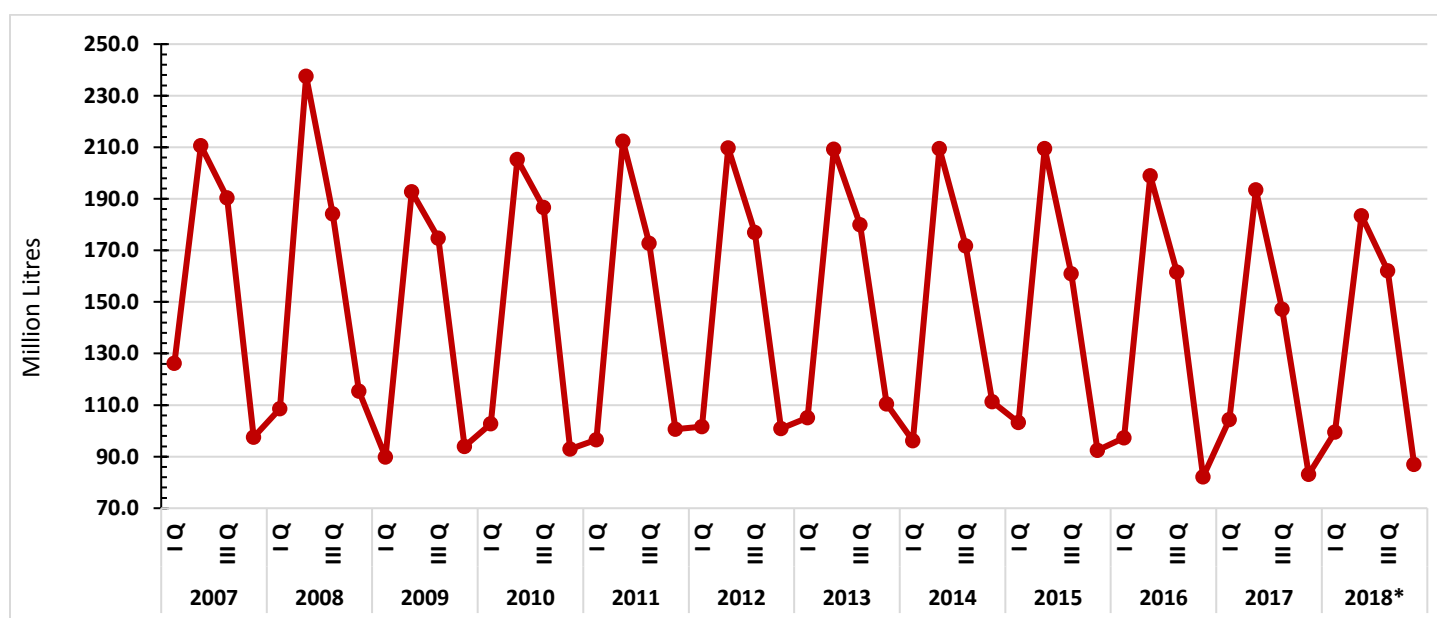


Monthly Milk Powder (HS code 040210) Imports – 1000 USD

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	1713.7											
2018	1680.0	1567.7	1370.5	1969.8	1211.7	1297.6	1464.8	575.7	1165.1	1058.2	696.9	1403.6
2017	1381.0	1813.3	1907.7	1095.8	1766.8	1533.5	1019.1	1201.3	2525.3	2306.9	1108.1	2661.0
2016	1573.0	1567.9	1568.9	987.5	929.1	812.4	507.7	885.8	1665.6	1117.5	1735.3	1554.7
2015	976.1	1501.5	1322.0	654.4	658.1	849.3	772.4	846.0	1050.0	1548.4	962.9	1614.9

2014	1892.7	548.4	1840.0	763.0	1450.6	1902.6	1294.4	1788.5	1122.1	1355.8	1699.3	1429.5
2013	1120.2	1192.6	1002.4	1625.9	548.1	1882.1	1029.3	1047.0	1614.7	2042.5	1897.3	1381.6
2012	306.4	559.1	736.4	1317.6	800.1	678.0	588.7	676.6	2305.7	827.3	1222.8	1634.3
2011	1124.2	447.8	756.9	906.2	1339.0	626.7	314.5	1299.2	1264.1	1428.4	1268.8	1148.3
2010	85.0	82.4	1473.0	756.6	900.3	362.7	368.3	1644.1	1009.9	1283.2	500.7	1843.9
2009	617.6	351.9	436.7	714.1	327.2	560.7	440.4	482.1	378.9	722.3	446.6	611.0

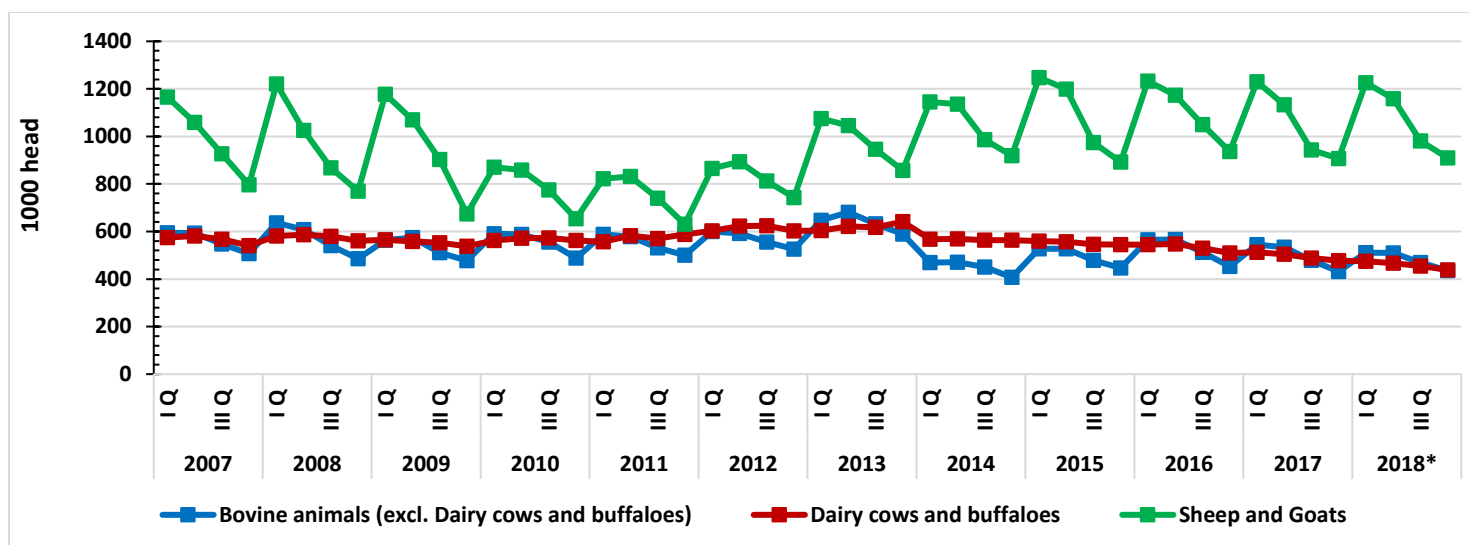
Quarterly Milk production – **mln. litres**



Balance Sheet for Milk and Dairy Products

Indicators	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Supply (ths. tons)												
Opening stocks	18	20	17	20	16	15	14	15	16	17	17	16
Domestic production	606	625	646	551	588	582	590	605	589	566	540	528
Import	136	77	51	50	48	43	53	64	71	92	124	121
Total supply	760	722	714	621	652	640	657	684	676	675	681	665
Utilization (ths. tons)												
Feed	13	14	15	12	10	9	10	11	12	12	11	11
Food	711	678	663	581	613	608	622	646	632	634	643	627
Waste	14	12	14	11	8	7	7	7	7	8	8	7
Export	2	1	2	1	6	2	3	4	8	4	3	4
Closing stocks	20	17	20	16	15	14	15	16	17	17	16	16
Total utilization (including stocks)	760	722	714	621	652	640	657	684	676	675	681	665
Per capita intake												
Population, ths. persons	3873	3848	3829	3800	3774	3739	3718	3717	3722	3729	3726	3730
Kg/year	184	176	173	153	162	163	167	174	170	170	173	168
Self-sufficiency ratio, %	82	89	93	92	93	93	92	91	90	87	82	82

Number of Livestock at the End of the Period – **1000 heads**



Average Yield of Dairy Cows and Buffaloes by Regions – litres per year

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Georgia	960	1 170	1 172	1 263	1 270	1 309	1 256	1 302	1 364	1 325	1 421	1 432
Adjara AR	950	1 140	1 054	1 118	915	996	1 006	1 065	1 158	1 033	1 189	1 105
Guria	-	-	-	-	-	-	-	-	-	-	1 679	1 625
Imereti	970	1 250	1 328	1 379	1 373	1 358	1 356	1 507	1 513	1 473	1 459	1 555
Kakheti	900	910	807	1 059	953	1 028	946	1 114	1 089	1 168	1 352	1 414
Mtskheta-Mtianeti	-	-	-	-	-	-	-	-	-	-	1 307	1 288
Samegrelo-Zemo Svaneti	850	910	951	1 027	1 181	1 210	1 169	1 138	1 139	1 201	1 183	1 106
Samtskhe-Javakheti	1 075	1 450	1 388	1 639	1 566	1 639	1 334	1 325	1 678	1 410	1 530	1 538
Kvemo Kartli	1 080	1 085	1 274	1 177	1 312	1 417	1 395	1 381	1 442	1 450	1 611	1 674
Shida Kartli	1 030	1 395	1 165	1 505	1 444	1 644	1 464	1 532	1 692	1 470	1 561	1 525
The remaining regions	900	1 440	958	1 213	1 237	1 077	1 208	1 187	1 247	1 274	1 151	1 180

Litter of Calves and Buffalo-Calves by Regions – 1000 heads

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Georgia	506.4	466.8	487.5	497.3	431.3	431.9	482.1	497.7	492.0	473.2	432.8	421.4
Adjara AR	42.1	48.8	38.4	29.4	30.9	32.1	39.5	37.7	42.8	36.4	32.0	28.9
Guria	-	-	-	-	-	-	-	-	-	-	17.0	16.9
Imereti	93.5	75.1	95.4	95.9	73.7	70.1	75.2	86.9	81.8	81.3	79.7	82.2
Kakheti	85.7	72.7	73.7	83.5	67.6	75.8	87.3	103.2	56.1	54.8	48.5	42.2
Mtskheta-Mtianeti	-	-	-	-	-	-	-	-	-	-	19.1	18.0
Samegrelo-Zemo Svaneti	34.2	42.9	32.8	40.7	35.4	39.1	33.7	34.6	94.3	86.9	71.8	75.6
Samtskhe-Javakheti	57.8	35.8	44.3	41.2	31.0	31.6	47.1	46.2	60.8	57.8	55.5	51.1
Kvemo Kartli	79.9	83.8	96.5	90.6	82.4	84.3	81.6	75.5	61.3	67.9	64.0	65.0
Shida Kartli	50.6	55.6	52.4	50.4	55.6	50.7	56.0	56.4	35.8	31.1	32.2	30.8
The remaining regions	62.6	52.1	54.0	65.6	54.7	48.2	61.7	57.2	59.1	57.1	12.9	10.7

Average Litter of Calves and Buffalo-Calves per 100 females by Regions – heads

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Georgia	78	82	87	91	78	76	79	82	87	85	81	84
Adjara AR	76	88	85	69	76	81	94	86	93	87	84	83
Guria	-	-	-	-	-	-	-	-	-	-	68	72
Imereti	79	78	95	99	75	67	70	85	88	90	86	89
Kakheti	82	74	93	84	64	66	88	80	93	90	87	88
Mtskheta-Mtianeti	-	-	-	-	-	-	-	-	-	-	87	86
Samegrelo and Zemo Svaneti	82	78	80	83	72	78	70	78	82	80	70	79
Samtskhe-Javakheti	86	97	103	96	94	79	82	80	89	86	85	87
Kvemo Kartli	74	87	85	93	85	83	80	86	76	82	77	85
Shida Kartli	79	94	77	101	77	87	77	79	93	79	88	89
The remaining regions	74	71	79	99	81	68	90	81	92	90	92	87

Loss of Bovine Animals by Regions – 1000 heads

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Georgia	47.0	69.7	75.6	76.1	101.9	73.0	92.1	69.3	67.2	69.1	83.7	68.5
Adjara AR	3.5	2.5	2.8	4.9	5.6	8.2	8.1	2.9	5.2	2.9	3.9	3.1
Guria	-	-	-	-	-	-	-	-	-	-	6.0	5.4
Imereti	10.4	11.1	16.6	16.6	22.8	11.8	16.5	7.2	11.1	12.7	14.8	11.5
Kakheti	-	-	-	-	-	-	-	-	-	-	8.0	5.6
Mtskheta-Mtianeti	-	-	-	-	-	-	-	-	-	-	4.6	2.2
Samegrelo and Zemo Svaneti	7.1	18.7	13.6	11.2	17.7	18.6	25.4	22.2	20.7	15.3	23.0	20.5
Samtskhe-Javakheti	4.5	4.7	5.3	5.0	10.2	7.3	5.0	5.2	5.6	5.7	8.8	5.7
Kvemo Kartli	11.1	12.9	12.5	18.8	20.0	5.6	12.9	15.2	7.2	10.5	7.2	6.6
Shida Kartli	4.4	8.4	11.8	3.7	5.3	4.2	8.3	3.5	2.1	5.9	5.2	5.7
The remaining regions	6.0	11.4	13.0	15.9	20.3	17.3	15.9	13.1	15.3	16.1	2.2	2.2