



ევროკავშირი
საქართველოსთვის
The European Union for Georgia



Analysis of the Agricultural Sector in Georgia: Value Chain and Export Potential



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INTRODUCTION

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Georgia's climate allows for the production of many types of agricultural crops. However, most agricultural products produced in Georgia find it difficult to compete in both international and local markets. Low competitiveness is driven by many factors, including low yields, a weak agricultural value chain, high fragmentation of land and problems with land registration. In addition, the low quality of products, the lack of standardization, and the lack of relevant certifications leave only "familiar" markets (former Soviet Union countries, especially Russia) open, which are highly unpredictable. The preferred export alternative is the high-income and stable EU market, where certain barriers have been removed by the Deep and Comprehensive Free Trade Areas (DCFTA) agreement. Though this agreement gives Georgia a certain advantage over other external suppliers, the EU market expects any supplier to produce high-quality products that are certified as complying with the relevant standards. Meeting these standards increases the cost of production for Georgian farmers and negatively affects product competitiveness in the EU market.

The purpose of this study is to provide the reader with key information on the competitiveness of Georgia's agricultural sector. This includes the sector's problematic areas and export potential, the agricultural value chain, and the internal and external factors affecting it. The paper is based on the analysis of the export potential and value chains of 7 products¹ specifically selected from 7 regions of Georgia between 2017-18 and represents an extrapolation of the results to the whole agricultural sector.

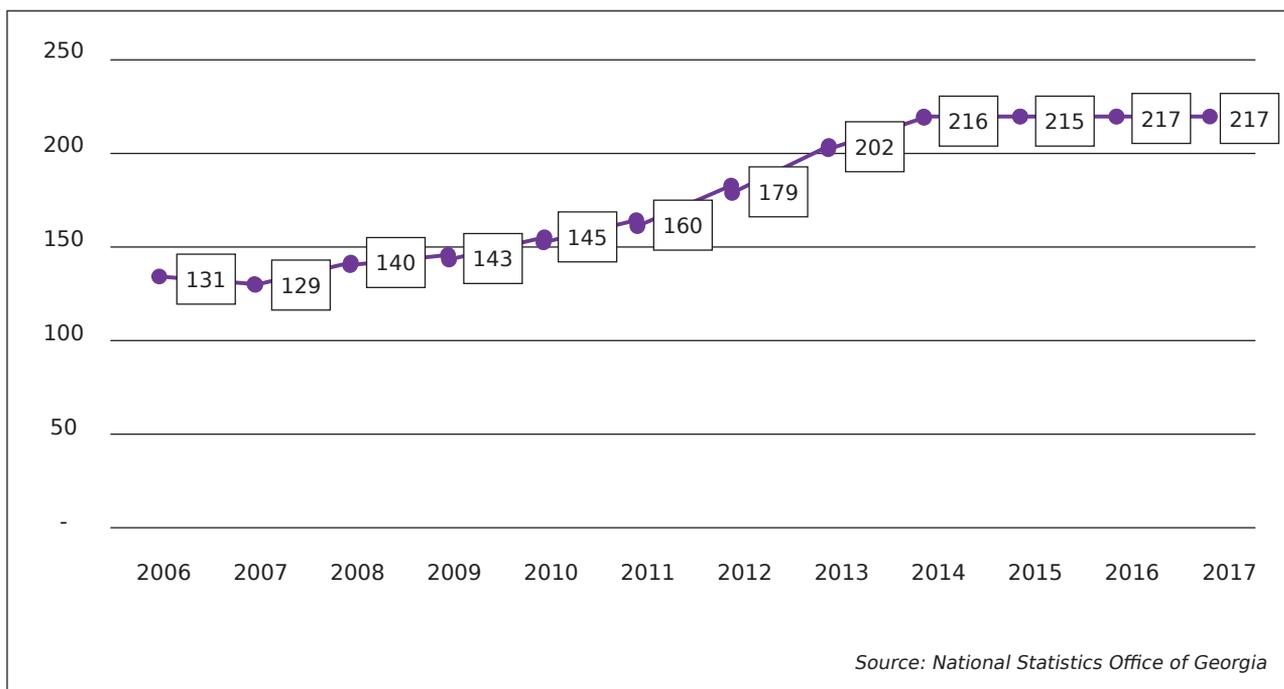
The first section of this paper discusses the major problems of Georgian agriculture, followed by a brief overview of Georgia's major trading partners and export products, including the main EU imports. Chapter 3 discusses the Deep and Comprehensive Free Trade Agreement with the European Union, followed by chapter 4, which summarizes the potential and problems of exporting Georgian agricultural products to the EU. In Chapter 5, the reader can find information on the internal (raw material suppliers, farmers and family farms, cooperatives, intermediaries, markets, exporters, local and foreign consumers) and external factors comprising the value chain (associations, consultation centers, education opportunities, financial institutions, government, and donor organizations). The next chapter summarizes the strengths and weaknesses of the Georgian agricultural sector, as well as the threats and challenges identified in the sector. Chapter 7 summarizes the practical recommendations that interested producers can use to improve competitiveness.

¹ Broccoli - in Kvemo Kartli; carrot - in Samtskhe-Javakheti; mandarin - in Adjara; bay leaf - in Samegrelo; tomato - in Imereti; raspberry - in Dusheti; and blackberry - in Kakheti.
Link to research: <http://www.pmcg-i.com/publications/report>

1. OVERVIEW OF THE AGRICULTURAL SECTOR

As of 2018, 43.1% of Georgia’s working population is employed in the agricultural sector, whose contribution to the GDP comprises only 7.7%. This points to the low productivity in the sector and, most importantly, low wages for people living in rural areas. As shown in the graph below (see chart 1), the real income of people living in rural areas has not changed in recent years. Along with real incomes, the sector’s low productivity and low growth rates also mean that rural residents (42% of the country’s total population) are poorer than urban dwellers. In 2018, 18.0% of the population in urban areas were below the absolute poverty line, while in rural areas the number was 23.1%.

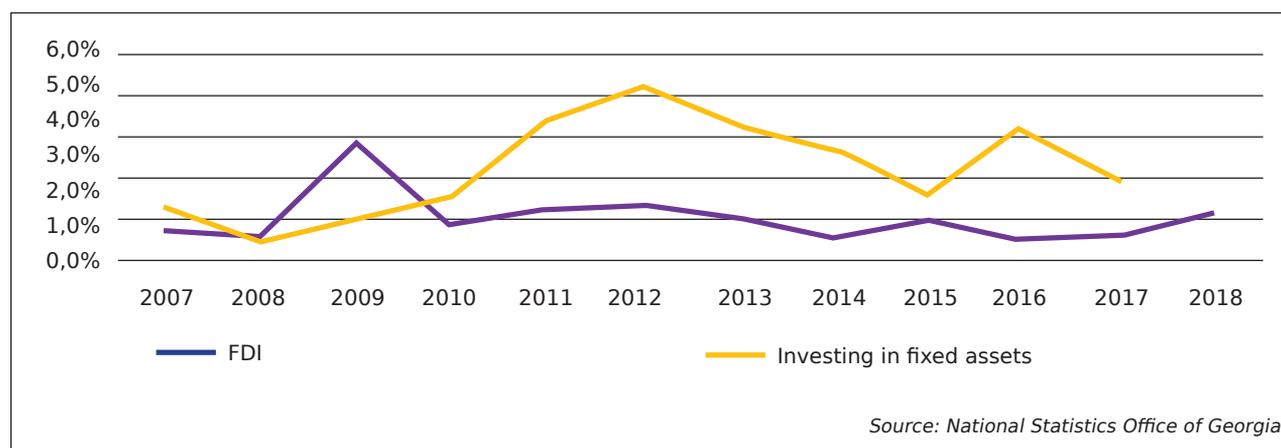
Chart 1: Per capita real income dynamics in rural areas (GEL)



The negative trend is seen in the context of a significant increase in state expenditure on agriculture beginning in 2010. Expenditure peaked in 2016 and totaled GEL 330.3 million. In 2018, the Ministries of Agriculture and Environment were consolidated into one. As a result, according to the approved plan for 2018, the budget of the newly unified ministry is GEL 274.8 million. In 2019, the proposed budget allocates 338.9 million.

The sector’s weak economic performance and its low productivity can be attributed to a number of specific root causes. These include the fragmentation of agricultural land and property rights issues that lead to inefficient management of land resources. Of additional concern are issues related to the agricultural value chain, such as weak linkages, consulting and extension services, education, enforcement of standards, etc. It is also worth noting that investments are an important factor in the introduction of modern technologies and hence productivity growth. As the chart below shows (see chart 2), investment in the sector is too small a part of total investment for us to talk about mechanization and its advantages.

Chart 2: Share of investments in the agricultural sector



As a result, low productivity remains a challenge for the sector. As can be seen from table 1, crop productivity in Georgia is significantly behind not only in comparison to leading countries but also relative to the average productivity in the world. Also, productivity in Georgia is quite low compared to neighboring countries (Armenia, Azerbaijan, and Turkey), which almost excludes geographical factors (poor climates, natural disasters, etc.) among the causes of low productivity. Accordingly, it can be surmised that the country has great potential for improving the situation.

Table 1: Crop Productivity (2017)

	Products	Productivity in Georgia (tonnes/ha)	World Average Productivity (tonnes/ha)
1	Cucumbers	13	43
2	Tomatoes	12	40
3	Watermelons	25	36
4	Carrots	6	27
5	Mandarins	3	15
6	Cauliflower and Broccoli	N/A	16
7	Raspberries	N/A	7
8	Bay leaves	N/A	2
9	Cabbage and similar edible brassicas	25	30
10	Strawberries	7	24
11	Onions, dried	9	20
12	Chillies, peppers	7	19
13	Potatoes	12	19
14	Pears	8	17
15	Peaches and nectarines	5	16
16	Grapes	4	11
17	Berries and others	2	8
18	Fruit (stone nes)	4	8

19	Quinces	6	6
20	Corn	3	6
21	Fresh fruit	5	6
22	Cherries	3	5
23	Plums	4	4
24	Wheat	3	4
25	Walnuts, in shell	2	3
26	Barley	2	3
27	Rye	2	3
28	Oat	2	2
29	Peanuts, in shell	1	2
30	Peas, dried	1	2
31	Almonds, in shell	1	2
32	Tea	1	1

Source: FAO

One of the causes of low productivity is the fragmentation of land. Studies show², that farm size is positively correlated with income and productivity. Consequently, productivity growth is hardly conceivable given the current distribution of land in Georgia. According to the 2014 Census alone (National Statistics Office of Georgia, Agricultural Census 2014), 87% of households own less than 1 hectare of arable land, and only 0.1% own more than 50 hectares. Also, on average a single farm (family farm or agricultural enterprise) owns 1.37 hectares of agricultural land, of which 0.71 hectares is arable land and 0.4 hectares are perennial. These statistics clearly indicate a high degree of land fragmentation.

For comparison, the table below (see table 2) presents data on the average size of farms in different countries by decade. As the table shows, the average farm size in almost all of these countries is significantly larger than the average farm size in Georgia.

Table 2: Average farm size in hectares

Country	Average size of agricultural enterprises, by decade				
	1960	1970	1980	1990	2000
Argentina	371.3	..	..		582.5
Austria	19.4	20.7	24.2		34.1
Canada	145.2	187.5	207.0		273.4
Chile	118.5	..	92.4		83.7
Colombia	22.6	26.3	..		25.1

² Fao, "The State of Food and Agriculture: Leveraging Food Systems For Inclusive Rural Transformation."

Cyprus	..	..		4.5	4.4
Denmark	15.9	21.0		26.4	49.8
Egypt	1.6	..		1.0	0.8
France	18.8	22.1		26.6	45.0
Germany	12.1	14.2		17.0	40.5
Greece	3.2	3.4		..	4.7
Hungary	..	9.3		11.7	6.7
Italy	6.2	6.9		7.2	7.6
Poland	6.4	4.8		..	6.6
Portugal	..	6.1		6.6	12.5
Spain	14.8	17.8		18.7	23.9
Uruguay	195.3	214.1		234.4	287.4
Australia	1843.6	1993.0		2818.9	3243.2
Slovenia	..	..		..	11.0

Source³

Furthermore, when looking at income groups, the average farm size in high-income and upper-middle-income countries, in 2010, was 27 and 60 hectares respectively, while in low-income and lower-middle-income countries this figure is significantly lower (1.3 and 1.5 ha, respectively). The distribution of land is also different: farms larger than 5 ha make up 27% of farms in low-income countries; 41% in lower-middle-income countries; 93% in upper-middle-income countries; and, in high-income countries, 98%⁴.

Besides fragmentation in Georgia, the management of state-owned agricultural land and the issue of land registration by private individuals present problems. Consequently, market mechanisms are being hampered in relation to the fundamental resource for agriculture, leading to inefficient utilization of resources⁵.

To summarize, increasing investment and mechanization remain the two main problems in the sector, low productivity of almost all crops, fragmentation of land, and problems with land registration and management. In addition, in most cases, there is no tendency on the part of residents to regard agriculture as a business activity. As a result, the main function that this sector performs today is that of the so-called subsistence economy, whose function is significantly different from the expectations from the sector. Consequently, under these conditions, it is difficult to achieve economies of scale and to increase the efficiency/productivity needed to offer competitive products on the market.

³ Lowder, Scoet, and Raney, "The Number, Size, and Distribution of Farms, Smallholder Farms, and Family Farms Worldwide."

⁴ FAO, "The State of Food and Agriculture: Leveraging Food Systems For Inclusive Rural Transformation."

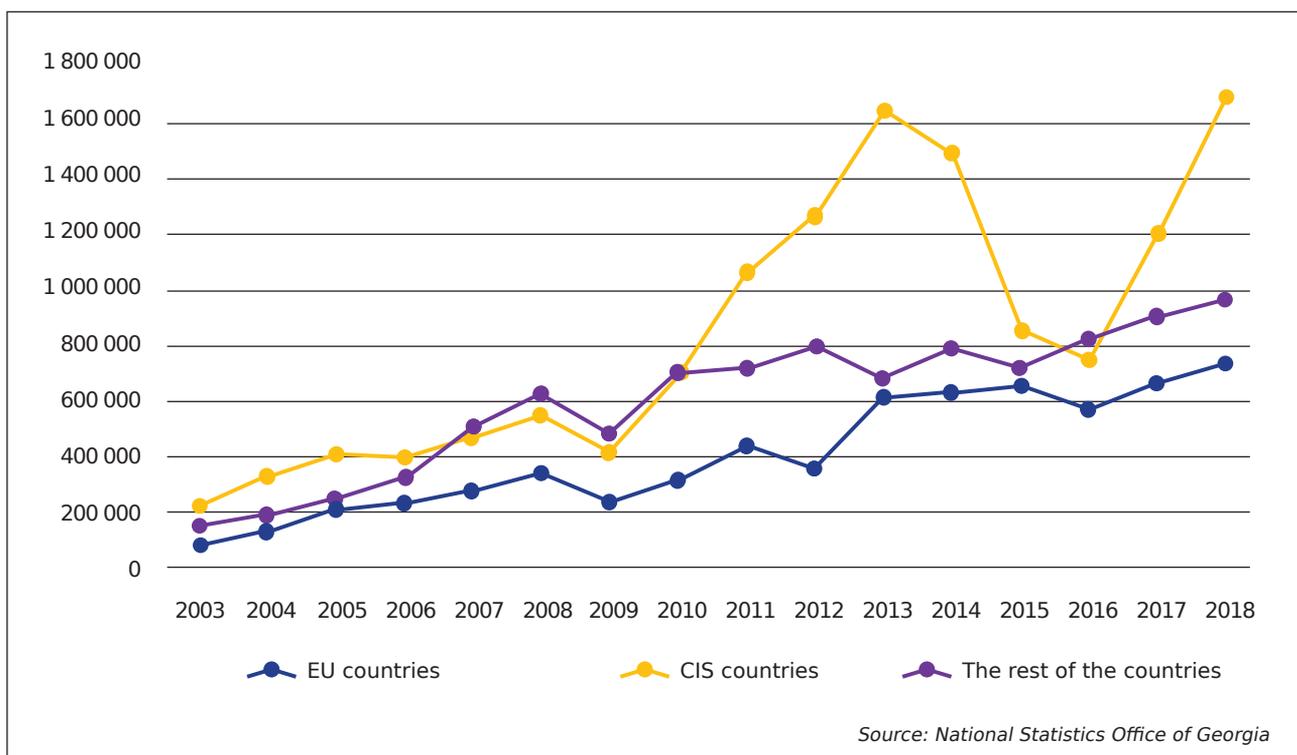
⁵ Kochlamazashvili and others, 2018

2. INTERNATIONAL TRADE

2.1 Georgia's Main Export Markets

Exports of products from Georgia have shown an upward trend for the past 15 years, but the country is in the process of seeking stable trading partners and high-income export products. Besides its neighboring countries, we can think of CIS and EU countries as the main trading partners of Georgia. However, as the chart below shows, it is as easy to export to CIS countries, as it is volatile.

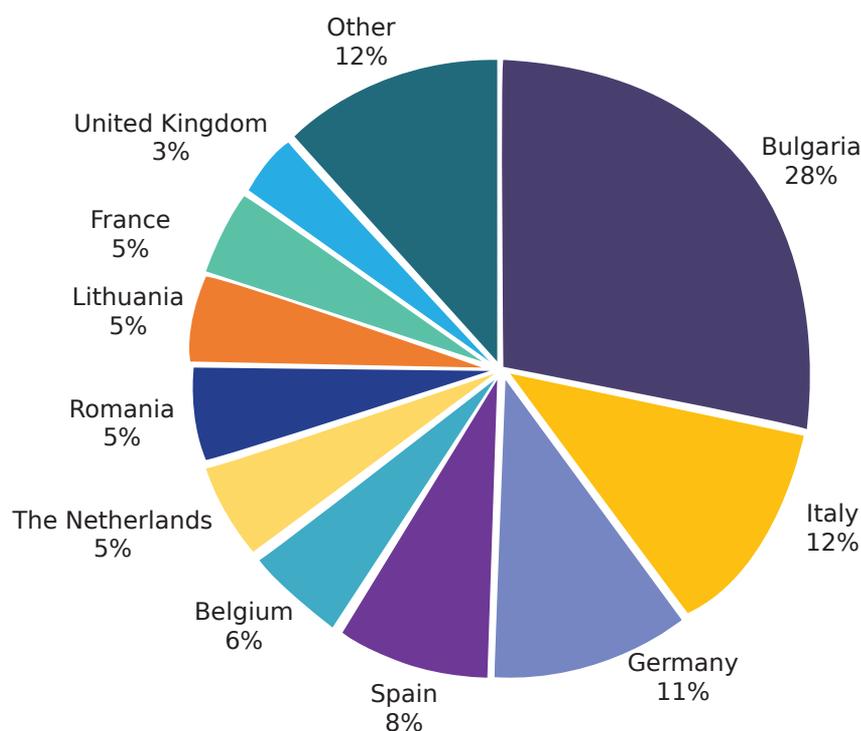
Chart 3: Exports from Georgia, '000 USD



Georgia exported \$23.5 billion worth of products in the 2008-2018 period. Of these, most are in neighboring Azerbaijan (16.5%), Armenia (9.2%), and Turkey (8.7%). However, exports to Russia and China have increased significantly in recent years. Looking at the data for 2017 and 2018 alone, the largest share of exports was made to Russia at 13.7%, and Azerbaijan at 12.7%. During the same period, China's share rose to 6.6%.

It is a fact that Georgian producers and exporters are in search of new markets. The highly solvent and resilient EU market is very attractive, but also very demanding. From 2008 to 2018, exports to EU countries accounted for 21.87% of total exports from Georgia. It peaked in 2015, when exports to the EU accounted for almost 30% of total exports. Most exports in EU countries were to Bulgaria (28% of Georgia's total exports to the EU), followed by Italy (12%), and Germany (11%).

Chart 4: Exports from Georgia to EU countries, 2008-18



Source: National Statistics Office of Georgia

2.2 Overview of Agricultural Exports

Agriculture related products occupy an important place among Georgia's exports⁶. The leading agricultural exports in the 2008-2018 period were nuts and walnuts (5% of total exports), wine (4.5%), and spirits (3.7%).

Table 3: Main agricultural exports

Georgia	2008	2010	2012	2014	2016	2018	10 Years	%
Exports (thousand USD)	1,495,345	1,677,307	2,376,635	2,861,045	2,112,913	3,354,498	25,048,282	17.2
Other nuts, fresh or dried	31,732	75,134	83,658	183,399	179,692	69,677	1,249,963	5.0%
Wine of fresh grapes	36,863	41,138	64,828	180,402	113,534	196,946	1,115,244	4.5%
Spirits	58,993	55,705	80,029	95,307	91,911	129,075	924,296	3.7%

⁶ Agricultural products are quite narrow in the sense that this category includes primary (unprocessed) products such as nuts and mandarins. However, it does not include industrial products that are essentially agricultural in nature but are processed, such as wine. Accordingly, the focus of this study is broader and discusses both types of agricultural products under the umbrella term general agricultural products.

Cattle	585	19,310	39,252	30,067	36,842	29,533	304,533	1.2%
Sheep and goats	463	13,427	18,040	21,040	10,525	4,138	141,363	0.6%
Timber material	19,563	7,480	9,516	11,331	13,613	15,249	138,931	0.6%
Wheat and meslin	3,188	7,242	49,810	12,377	986	2,734	138,694	0.6%
Citrus fruits, fresh or dried	3,878	12,143	7,670	14,734	11,587	14,842	130,804	0.5%
Flour and processed meat, fish or crustaceans	223	2,691	810	15,680	15,251	15,216	89,758	0.4%
Fruit and vegetable juices	8,402	6,201	12,577	10,558	5,566	8,704	85,234	0.3%

Source: National Statistics Office of Georgia

It is worth noting that the exportation of most high-income products presented in the table have a volatile nature, which depends on many factors. For example, exports of hazelnuts, whose export potential has increased over the years, declined dramatically in 2018 due to the brown marmorated stink bugs and widespread diseases. Exports of pets are also unstable. These dynamics illustrate how vulnerable the agricultural sector is to the negative impacts of internal and external factors.

2.3 The EU's Main Agricultural Imports

The table below (see table 4) lists the top 10 agricultural products in EU countries (28 countries, EU28). Among the products, coffee is in the lead, whose import accounted for almost \$50 billion in the 2013-2017 period. Besides coffee and palm oil, which are not produced in Georgia, Georgian farmers may take an interest in the import of almost all other products. For example, soybeans, whose imports into the EU countries totaled almost \$32 billion in a five year period ⁷. The high export potential of raw corn and tobacco to the EU is also noteworthy. In addition, the focus on exporting fruit and vegetable juices is an opportunity to process primary agricultural products and create added value in the country.

Table 4: Import of products into the EU, '000,000 USD

⁷ Based on FAO data, we can assume that soybean is one of the most productive crops in Georgia compared to other countries in the world.

EU28	2013	2014	2015	2016	2017	5 Years	%
Import (millions)	\$2,242,512	\$2,247,835	\$1,918,104	\$1,894,809	\$2,095,737	\$10,398,996	2.24%
Coffee	\$9,859	\$10,437	\$9,827	\$9,367	\$9,878	\$49,367	0.47%
Soya beans	\$7,441	\$7,011	\$5,834	\$5,887	\$5,564	\$31,737	0.31%
Palm oil	\$6,031	\$6,078	\$4,842	\$4,566	\$5,481	\$26,998	0.26%
Walnuts and other nuts	\$4,023	\$4,775	\$5,561	\$4,750	\$4,553	\$23,662	0.23%
Cocoa beans	\$3,583	\$4,209	\$4,649	\$5,375	\$4,564	\$22,379	0.22%
Bananas	\$3,966	\$4,129	\$3,743	\$3,879	\$4,428	\$20,145	0.19%
Wine of fresh grapes	\$3,275	\$3,261	\$3,068	\$2,924	\$2,964	\$15,491	0.15%
Corn	\$3,401	\$3,544	\$2,378	\$2,380	\$3,169	\$14,873	0.14%
Unmanufactured tobacco	\$3,081	\$3,227	\$3,010	\$2,558	\$2,724	\$14,601	0.14%
Fruit and vegetable juices	\$2,806	\$3,031	\$2,414	\$2,522	\$2,533	\$13,307	0.13%

Source: <https://comtrade.un.org/data>

The potential of the European export market is well understood in Georgia. The country has expressed its desire to turn towards Europe and the EU is trying to respond to our aspirations with appropriate measures. One such step is the signing of a Deep and Comprehensive Free Trade Agreement, which gives Georgia some advantages over other importers. As a result, the dynamics in the EU direction are positive, but the processes are developing slowly and unfortunately this opportunity is still untapped by Georgia.

3. THE DEEP AND COMPREHENSIVE FREE TRADE AGREEMENT (DCFTA)

In 2014, the EU signed the Deep and Comprehensive Free Trade Area (DCFTA) agreement with Moldova, Georgia, and Ukraine. The treaty came into force in June 2016 and the countries were given 10 years as a transitional period to establish a free trade regime.

Georgia, of course, has trade agreements with other countries⁸, but the DCFTA differs from other agreements as it aims not only to deepen trade relations between Georgia and the EU through trade benefits, but also to approximate European standards and harmonize Georgian legislation with that of the EU.

The DCFTA contains 15 chapters⁹, but when setting out recommendations for harmonization, the European Commission identified four priority areas:

- Technical barriers to trade
- Sanitary and phytosanitary measures (food safety)
- Intellectual property rights
- Competition

Since the main focus of research is on agricultural products, the first two of these four areas are of particular interest to us: barriers and food safety.

When entering the EU market, the product meets two types of barriers - tariff and non-tariff barriers. Products of Georgian origin, if they meet food safety standards, enter the EU market without a customs tariff, though there are a few exceptions.

- Products subject to the annual duty-free tariff-rate quotas¹⁰: this category includes only garlic with a quota of 220 tonnes.
- Products subject to market entry price¹¹: this list includes 28 varieties of agricultural products, under the so-called “entry price”, which means setting a minimum price limit on the import of these products.

⁸ Certain benefits apply to Georgia, as a member country of the World Trade Organization, to trade with other member states of the Organization (164 members in total). Georgia has a free trade regime with the CIS countries, Turkey and China; GSP agreement with the USA, Switzerland, Norway, Canada and Japan.

⁹ Read more: Deep and Comprehensive Free Trade Agreement (DCFTA), 2018, <http://www.dcfta.gov.ge/ge/agreement>

¹⁰ Annex II-A <http://www.dcfta.gov.ge/public/filemanager/agreement/trade/დანართი%20II.pdf>

¹¹ Annex II-B <http://www.dcfta.gov.ge/public/filemanager/agreement/trade/დანართი%20II.pdf>

- Products subject to anti-circumvention mechanism¹²: this mechanism includes 277 types of agricultural and food processing products. The agreement establishes fixed annual quantities for products listed above that can be adjusted on demand if Georgia demonstrates that this requirement is based on changes in local production. If local production is increased, the quantities specified in the agreement may increase.

If the export item does not appear in any of the lists and meets the sanitary and phytosanitary standards, it can be brought into the EU market without any barriers. However, the export process to the EU is obviously not easy and depends on the proper functioning of many internal and external factors. Considering this, before taking any concrete steps, it is important to determine the potential of each product in both Georgia and the EU market. Based on the research carried out, the next section summarizes the export potential of each product to the EU market.

¹² Annex II-C <http://www.dcfta.gov.ge/public/filemanager/agreement/trade/დანართი%20II.pdf>

4. EXPORT POTENTIAL OF SELECTED PRODUCTS TO THE EU

As noted above, this chapter summarizes the export potential of a selection of products in the EU market. It should be noted that raspberries, blackberries, and broccoli are relatively new products in Georgia, as evidenced by the export figures shown in the table (see Table 5). Accordingly, there is a lack of experience in their production. This table also briefly summarizes the degree of export potential of each product.

Table 5: Foreign Trade of Selected Products, Thousands of USD

Product	Research area	Exports 2017-18	Imports 2017-18	Export potential in the EU
Raspberries ¹³	Mtskheta-Mtianeti	\$ 2.2	\$ 423	High
Blackberries	Kakheti	\$ 2.2	\$ 423	High
Broccoli ¹⁴	Kvemo Kartli	\$ 77.5	\$ 695.2	Low
Mandarins	Adjara	\$ 24,751.3	\$ 1,696.3	High
Carrots	Samtskhe-Javakheti	\$ 342.4	\$3,305.8	Low
Laurels ¹⁵	Samegrelo-Zemo Svaneti	\$ 16,272.2	\$ 519.1	High
Tomatoes	Imereti	\$ 8,762.0	\$ 15,845.8	High

Source: National Statistics Office of Georgia; an in-depth analysis of these products can be found at <http://www.pmcg-i.com/publications/reports>

Studies have shown that the export potential of broccoli and carrots in the EU is low. However, given increased productivity and quality, these products can replace imports in the Georgian market. The export potential of raspberries, blackberries, mandarins, bay leaves, and tomatoes is relatively high. However, the realization of their potential depends on many internal and external factors, which will be discussed in more detail in the following chapters¹⁶.

4.1 Raspberries

Raspberries are a relatively new product for Georgian farmers since it was rarely produced at an industrial scale or considered an export product. Consequently, a significant amount of raspberries are imported to Georgia, due to the low production volume at a

¹³ When processing statistical data, raspberries and blackberries are grouped into one broad category: raspberries, blackberries, mulberries, loganberries, black currants, white or red wineberries, fresh, heat-treated using water or steam or unprocessed, frozen, with the addition of sugar or other sweeteners or without them.

¹⁴ The category also includes cauliflower.

¹⁵ Laurel is included among other spices in the following category: ziziphora, thyme, laurel, curry and other seasonings, except for ginger, saffron, and turmeric.

¹⁶ It should be noted that the research that underlies the the following chapters is structurally and informationally diverse, making it difficult to identify common features for all products. Consequently, the following sections are structurally slightly different.

local level and product seasonality. Seasonality and year-round demand result in consumption of both, raw and frozen raspberries.

If exported from Georgia to the EU, raspberries are exempt from all taxes¹⁷. However, it goes without saying that raspberries should be safe to eat: the product should not be contaminated with heavy metals and sanitary standards should be met. During the production process, the use of any harmful additives and pesticides is prohibited¹⁸. Also, since raspberries are not washed after picking, it is important to work with clean hands during the picking season.

In addition to food safety regulations, EU countries require raspberries to be of the same variety, and the product must be uniform in size and quality. It is also important to export steadily large quantities of raspberries, which at this stage is not possible for any producer in Georgia.

Although raspberry production is not yet well developed in Georgia, the average production price is competitive. This gives Georgia the advantage of being attractive to the European market and allows it to compete with other importers in the EU. Consequently, this crop has the potential to successfully satisfy local demand, replace imports, and be exported to the EU.

4.2 Blackberries

On the one hand, it was not until recently that cultivation of blackberries began in Georgia. Kakheti is the leader in blackberry production at the regional level, but there is no full-fledged blackberry farm yet with fully grown plants. Also, the region does not have a blackberry refrigeration plant (flash freezer) and blackberries are not processed industrially. Consequently, there is no precedent for blackberry exports from Georgia to the EU.

On the other hand, the demand for blackberries in the EU market, both fresh and frozen, is high. It is noteworthy that the price of fresh blackberries is much higher than the frozen one, though it is quite difficult to transport and there is a high risk of damage/loss.

Imports of new blackberries, mulberries, and loganberries to the EU in the 2012-2017 period, with the exception of 2016, grew every year. In 2017, the value of imports of fresh blackberries, mulberries, and loganberries amounted to 37.3 million euros (8,000 tonnes), up 20.3% from 2016. The average import price was 4.66 EUR / kg.

Imports of frozen blackberries and mulberries into the EU have declined every year since 2012 (except for 2015). In 2017 the value of frozen blackberry and mulberry imports in the EU amounted to 35.1 million euros (33,238 tonnes), down 10.1% from 2016. The average import price was 1.05 EUR / kg.

According to the Deep and Comprehensive Free Trade Area agreement, there are no customs duties on blackberries levied against Georgia in the EU market (other countries' blackberry tax is 9.6%), nor is there a tariff quota. Blackberries are neither subject to market prices nor anti-circumvention mechanisms.

¹⁷ The market for raspberries in the EU is quite large. The EU is the largest market for frozen raspberries. Both import and consumption of frozen raspberries are steadily increasing in Europe due to the growing popularity of raspberries.

¹⁸ The EU Pesticide Database indicates the permissible levels of 457 different pesticides in the case of frozen raspberries. See also: <http://ec.europa.eu/food/plant/pesticides/eu-pesticides-database>

Research has shown that it is difficult to draw well-substantiated conclusions as to whether Georgian blackberries will be able to penetrate and establish themselves in the EU market. Therefore, at this stage it would be better to focus on import substitution.

4.3 Broccoli

The level of production of broccoli and cauliflower¹⁹ in Georgia is quite low, but low quantities of Georgian broccoli are still exported to neighboring countries (Azerbaijan, Armenia).

The largest producers of broccoli and cauliflower are China and India, which produce more than 80% of the world's broccoli and cauliflower. European countries (including Spain, Italy, and France) are among the largest producers of broccoli in the world. Consequently, the high supply from these countries to the domestic market results in a relatively low price of broccoli in the EU, with which, considering transportation and certification, Georgian broccoli cannot compete.

If Georgian broccoli meets the food and product safety standards, it can be exported from Georgia to the EU free of charge. To apply to the free trade regime, the sole requirement is that products manufactured in Georgia meet the criteria of rules of origin.

However, the conducted research demonstrates that broccoli currently has a higher potential for import substitution than export. Consequently, it is better for producers to focus on expanding within the Georgian market.

4.4 Mandarin

Mandarins are one of the main agro-food products exported and generate an annual revenue for the Georgian economy. However, the Georgian mandarin export markets are less diversified and over 90% of total exports are destined for high-risk markets (Russia and Ukraine). In addition to traditional markets, access to new, more resilient, and high purchasing power markets has not been achieved yet.

However, demand for mandarins in Europe is very high. EU countries account for about 45% (2.1 million tonnes) of total mandarin imports worldwide. The average price of mandarin imports in this market is about 10% higher than the world average price of \$1,050 per ton.

In terms of tariff barriers, mandarins are among the 28 products that are subject to the EU market's entry price. This means that when the invoice price of Georgian mandarins is lower than the EU enacted fixed fee the exporter will be taxed the difference between the fixed and invoice prices.

In 2017, only two EU countries imported Georgian mandarins, both in very small quantities, 20 tons by Poland and 3 tons by Lithuania. Studying the Polish example has shown that the procedures for exporting to the EU itself are not difficult compared to other countries' (the traditional mandarin markets-Russia and Ukraine). With one exception, Poland requested proof of heavy metal testing. The fruit shipped to Poland was of stan-

¹⁹ According to the FAO classification, broccoli and cauliflower are categorized as one in the statistical analysis as well as in productivity and other parameters. Therefore, it is not possible to identify broccoli separately.

dard quality, averaging 50 mm in diameter (according to EU standards, size code 4 or 5), and was packed in plastic boxes as required by EU standard. Regarding transportation, they were ferried from Batumi to Ukraine, then by refrigerator trucks through Ukraine to Warsaw. The journey takes an average of 7-10 days (depending on weather conditions in the Black Sea), which is acceptable given that, in the right temperatures and humidity, Georgian mandarins will stay at best quality for at least 20-21 days.

Although mandarins are exported, there are problems with growing the existing variety. The majority (about 40%) of mandarin farms in Adjara are either old or sick and need replacing. Due to farmers' lack of knowledge and lack of access to financial means, a complete agro-technological cycle is not observed, resulting in a low level of per hectare yield (about 10 tn) and a high non-standard mandarin yield (about 20%).

However, in the case of mandarins, price and quality may not be the main factors leading to successful entry into and success in the EU market, but getting the European consumer acquainted with the Georgian Satsuma mandarin variety (*Citrus unshiu*). In Europe, the variety known as Clementines is well-known, in contrast to this variety, the Georgian mandarin has a relatively sour taste. However, this also means less sugar, which may have a positive effect on the possible demand for Georgian mandarins. Accordingly, research has shown that Georgian mandarins might have quite good potential for export to the EU.

4.5 Carrots

Carrot production in Georgia is seasonal and mainly imported carrots are consumed. The leading regions in carrot production in Georgia are Samtskhe-Javakheti and Kvemo Kartli. In the last four years, carrot production in Georgia has been characterized by a downward trend and, if in 2014 it was 4.9 thousand tonnes, in 2017 4 times fewer carrots were produced in the country. Consequently, the demand is mainly met with raw carrots imported from Turkey.

The largest producers of carrots in the EU are Poland, Great Britain, and France. Poland is the largest producer of carrots in the EU, accounting for 18% of carrots produced in Europe²⁰. However, although some EU countries are among the top ten producers in the world, carrot imports in the EU are very high and in many European countries the most popular vegetable after potatoes is carrots. Consequently, its consumption is high, which results in a high demand for the product.

Carrots are not exempt, and their export to the EU is duty-free if they meet the criteria for food safety and the rules of origin.

However, in terms of price, the current price of Georgian carrots is almost equal to the market prices of EU countries which, with current scale of production, makes the entry into the European market complicated. Consequently, under current yields and production practices, carrot exports to the EU are unprofitable and therefore, the export potential of this product is low.

²⁰ Retrieved from: https://www.actahort.org/books/371/371_1.htm

4.6 Laurel

Laurel is one of the oldest agricultural products in Georgia. The main good produced from laurels is dry leaves, which is primarily used in the food, medicine, and cosmetics industries. In 2017, the largest shares of laurel exported from Georgia went to Russia (40%), Turkey (24%), and Ukraine (17%).

Europe is one of the largest importers of laurel (26% of total world imports). The largest importer is Germany, where in 2017, 67,883 tonnes of laurels were imported, including 7 tonnes from Georgia. In 2017, Georgia exported 82.6 tonnes of laurels to EU countries. The largest quantity - 40 tonnes of laurels were exported to Lithuania.

Exports of laurel to the EU market must meet the requirements of EU countries regarding the quality of products. The minimum requirements for entry into the EU market are described in the Quality Minima Document of the European Spice Association. One of the important certifications for laurel processors is the introduction of the Hazard Analysis and Critical Control Point System (HACCP), which establishes food safety standards and food management principles. If an exporter wishes to export laurel to Germany, it is recommended that they have a HACCP certificate, but this is not a legal obligation.

In conclusion, based on the calculations carried out within the framework of the study, we can say that laurel production in Georgia and its exportation to the EU is quite promising. However, in order to make this possible, it is necessary to introduce modern methods of laurel care, which will increase yield and product quality. Presently, only a small part of the Georgian laurel industry is able to meet the requirements of the EU market.

4.7 Tomato

Tomatoes are produced in all regions of Georgia. It is noteworthy that, out of all vegetables, tomatoes are the vegetable crop that are grown in the largest quantities in the country. One of the advantages Georgia has, in terms of tomato production, is their taste and the climate, which is favorable for non-seasonal production as well. It is noteworthy that in the 2016-2017 period tomato exports from Georgia increased significantly. Although nearly 81% of total exports goes to Russia, in 2017, 116 tonnes of tomatoes were exported to Latvia for the first time.

Any person who wishes to export tomatoes to the EU and conducts their primary production must register as a food producer. The registration is carried out by the National Agency of Public Registry of the Ministry of Justice of Georgia. In addition, the produce must be traceable. This is one of the important requirements a business operator must meet.

Those wishing to export tomatoes to the EU should also bear in mind that tomatoes are subject to the entry price as they are one of the protected products, which means that this product is subject to customs duty if the EU-enacted fixed fee of tomatoes exceeds the price of Georgian ones.

The research shows that tomatoes have a good chance of entering the EU market. In order to successfully export tomatoes to the European market, it is necessary to increase the average yield and reduce the prime cost of tomato production. They must also meet all requirements in accordance with the relevant standards, which are a prerequisite to successfully exporting to the EU market.

A detailed analysis of the seven products described above further illustrates how the problems in agriculture are quite complex and that a farmer or exporter alone will find it difficult to solve them. Consequently, proper functioning of all the linkages in the production process is necessary. The next chapter looks at all the key linkages in agriculture separately and linked within the value chain, which ultimately generates the product value.

5. AGRICULTURAL VALUE CHAIN

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Agricultural value chain refers to all entities that participate in the process of supplying the product from its production to its final consumer. Providers of raw materials and services could be taken as examples of the first linkage of a value chain. This linkage gives the farmer the opportunity to prepare the land, select the appropriate seedlings, and properly use pesticides to correctly process the selected crop. After harvesting, the products are delivered through an intermediary from the farmer to the retailer and then delivered to the final consumer by the retailer. Assuming the product is exported, additional linkages appear in the value chain in the form of an exporter. We should also look at various consulting agencies, certifying organizations, government agencies, various donors and NGOs, associations, and cooperatives that are involved in the value chain and directly or indirectly contribute to the development of the sector as linkages in the chain.

Value chain participants and the strengths of their relationships are crucial in creating a competitive product. Studies in Georgia have shown that relationships between agricultural value chain participants in the country are often based on informal relations and rarely become formal partnerships (e.g. linkages between intermediaries and supermarket (Gelashvili and Tvaliashvili 2018)). The diagram below depicts the entities within the agricultural value chain and the external factors acting on it. The following sections provide an overview of each ring shown in the graph.

5.1 Main Linkages of the Agricultural Value Chain

Suppliers of products and services (e.g. seed material, pesticide retailers, land analysis laboratories, etc.) necessary to start production could be considered initial value chain linkages.

First of all, before starting production, it is important to perform a soil analysis as part of the raw material and service provider linkage of the value chain. Soil should be monitored for pH (which determines soil salinity and moisture content), organic matter, and macro and micro elements content, and nematodes (Khatisashvili and Gelashvili, 2019).

To obtain a mixed soil sample, the soil is diagonally divided into four sections and soil samples are taken diagonally (see Chart 2). Depending on the size of the plot, soil samples will be taken from 5 or 9 points. To do this, you need to remove any grass and bore a 40X40 hole at a selected location to a depth of 60 cm. Using a measuring stick, the bored hole is marked at the depths of 0-30 and 30-60 cm. Samples are pulled from a depth of 0-30 and 30-60cm. Samples are stored separately in polyethylene bags and sent for analysis²¹

²¹ For additional information, see: <http://srca.gov.ge/about/laboratory>; <http://www.agrosc.ge/pages.php?lang=ge&id=9>

Diagram 1: Reflection of the value chain

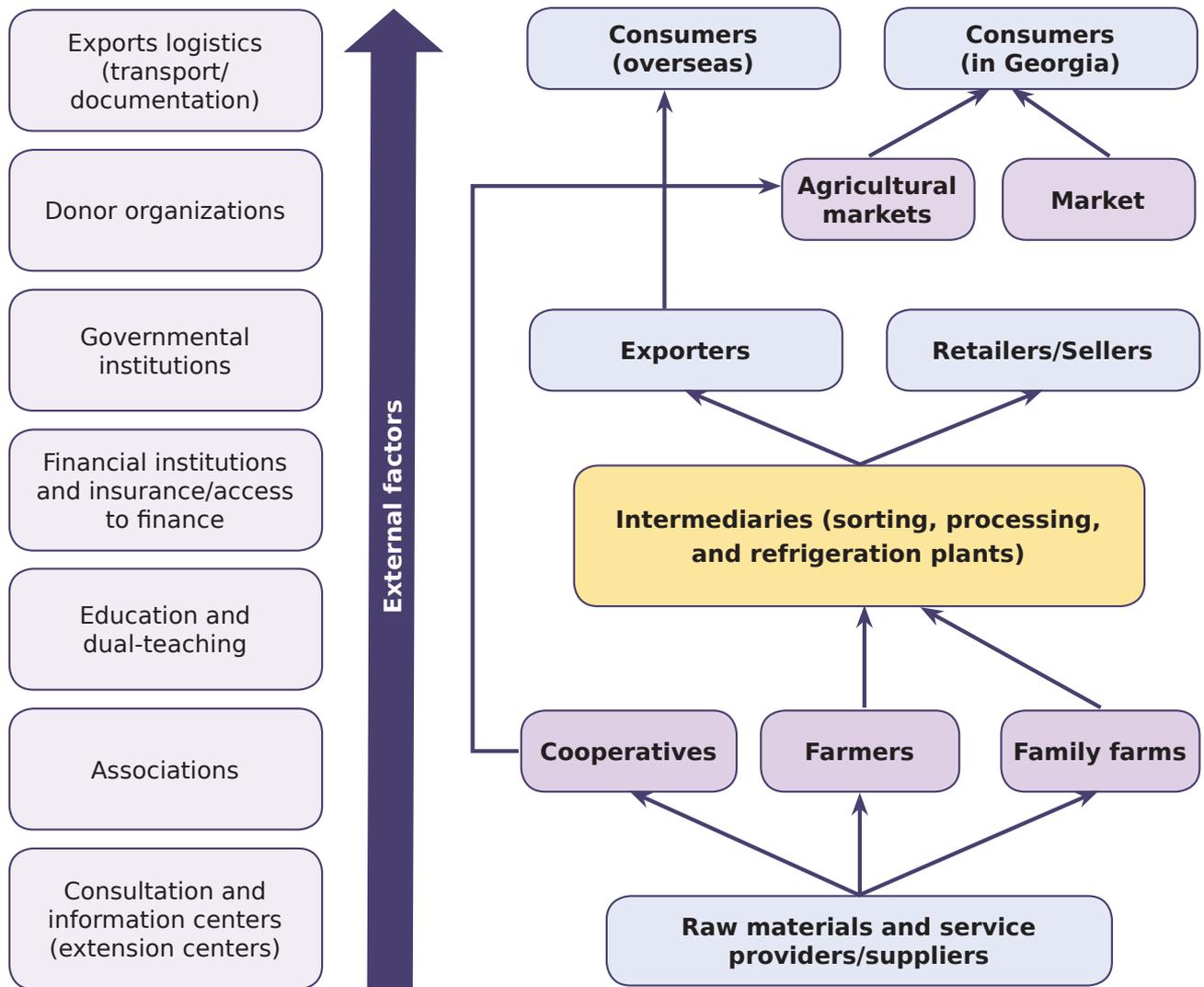
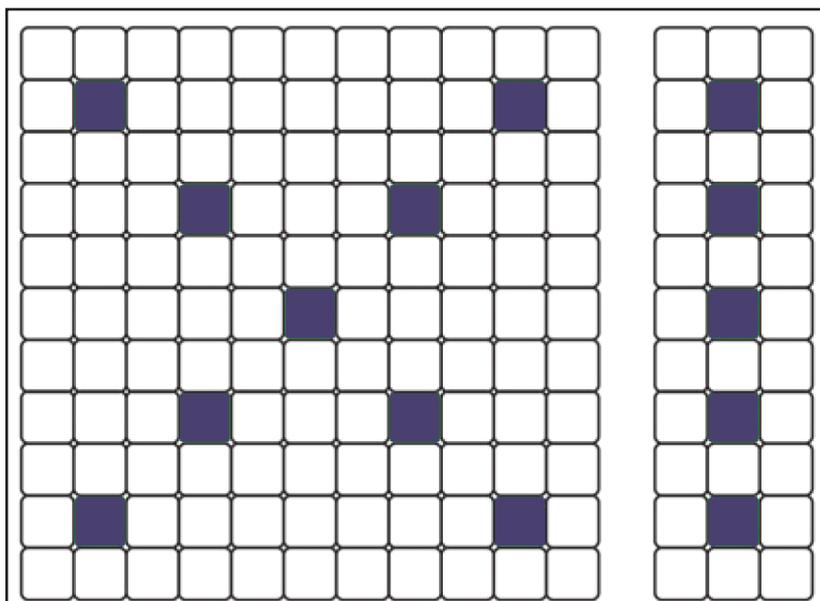


Diagram 2: Soil sampling scheme (The greenhouse diagram (right))



Source:
<https://crystal.ge/ka/news/427/>

Soil problems are easier to fix before planting, but studies have shown that, despite government support, land analysis is often unavailable to farmers because of its high cost. For example, today it is possible to enrich the fertile soil surface by proper soil analysis in the Adjara region. Laboratories²² and state subsidies for soil analysis have been set up for this purpose (instead of 80 GEL it costs farmers 20 GEL). However, it turns out that not all substances can be tested in these laboratories and it is necessary to conduct a relatively thorough (and expensive) analysis (Kochlamazashvili and Saghareishvili, 2018).

After selecting and preparing the soil, it is important to select the **suppliers of raw materials** (fertilisers, pesticides, etc.). Studies conducted in this area have concluded that a lack of raw materials and relevant knowledge pose a problem. Studies have shown that in most municipalities there are agro-raw materials stores where farming instruments are available. However, farmers note that quality and prices are often incompatible with each other. It has been found that often purchased agents (fertilizers, pesticides) are ineffective in combating pests and diseases. Another problem was that sellers in agro-businesses could not provide qualified recommendations and farmers did not trust them. Regarding the availability of raw materials, respondents noted that the range of bio-based raw materials in these stores is narrow. All of this is due to the fact that demand for bio-products is low and therefore the products mentioned above are in limited stock (Khatishvili and Katsia, 2019; Khatishvili, Saghareishvili and Basiladze, 2019).

The next link in the chain is producers of primary products - **farmers and family farms**²³. They differ from one another in terms of maintenance/up-keep and planted fields. For example, about 95% of tomato growers are small farmers, which negatively affects the quality of production. In particular, it is almost impossible to collect large quantities of the same product. As a result, the logistics and export of the product to foreign markets is complicated. The level of productivity of small farmers is also low. Take the case of carrots as an example, in most cases small farmers produce them as a secondary product and they are sown in small areas (up to 0.5 ha). Many small farmers have noted that they have grown carrots for a long time (15-20 years), but productivity is not very high (10-15 t / ha). As for large farmers, carrots are not their main crop either, though there is a large difference in productivity (20-25 t / ha) compared to small farmers (Khatishvili and Gelashvili, 2019).

An important step forward in strengthening one of the key linkages of the value chain for farmers was taken in 2013, when the Agricultural **Cooperatives** Development Agency was set up. A law put in place in Georgia on Agricultural Cooperatives (which was approved on 12 July 2013) regulates the procedures for operating cooperatives. Consequently, an important institutional foundation has been in place since 2013 to effectively promote the establishment of cooperatives and, as a result, the development of small farms. The Agency runs projects of diverse nature (e.g. 'The development of hazelnut production through the support of agricultural cooperation')²⁴.

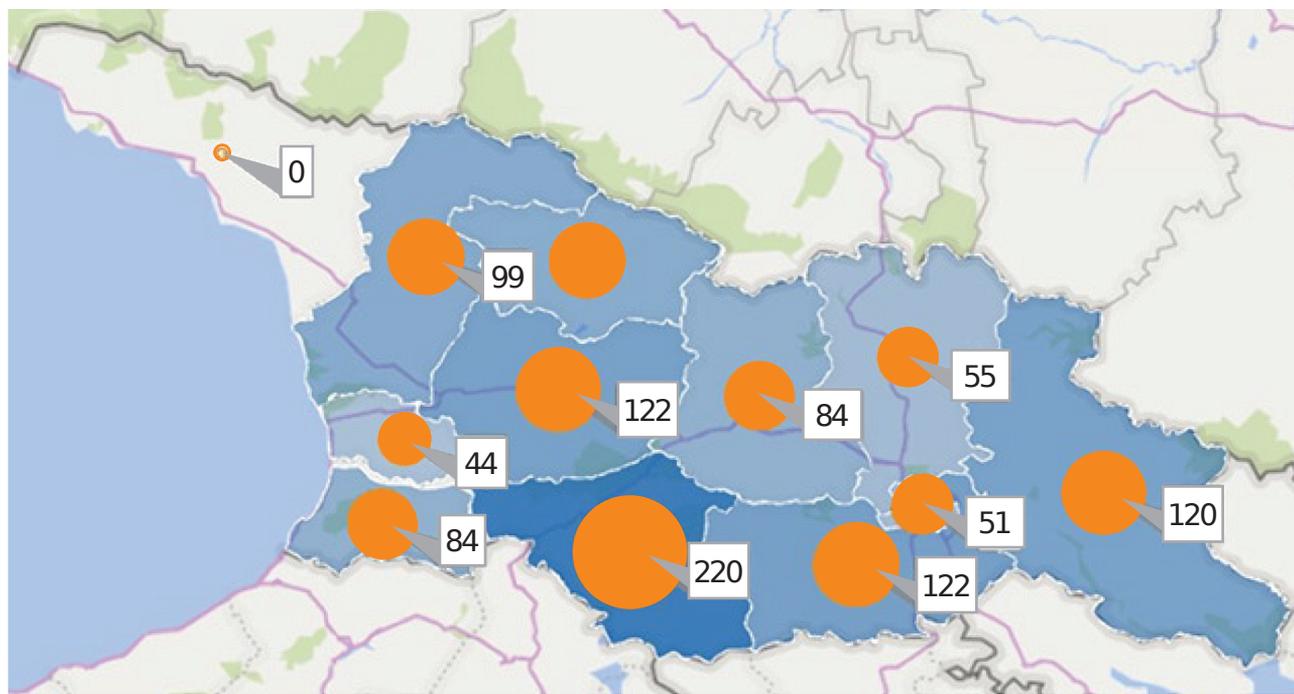
²² For more information, please visit the website of the Agricultural Scientific-Research Center: <http://srca.gov.ge/about/laboratory>.

²³ In the text, the term "small farmer" is used as a synonym of family farms.

²⁴ You can read more at: <http://acda.gov.ge>

According to the Agency for Agricultural Cooperative Development, in May 2019, there were a total of 1,071 agricultural cooperatives registered in Georgia. According to the National Statistics Office of Georgia, however, only about 200-210 cooperatives have active status. Most of the registered cooperatives are concentrated in the regions of Samtskhe-Javakheti and Kvemo Kartli (see Chart 5).

Graph 5: Distribution of registered cooperatives by regions



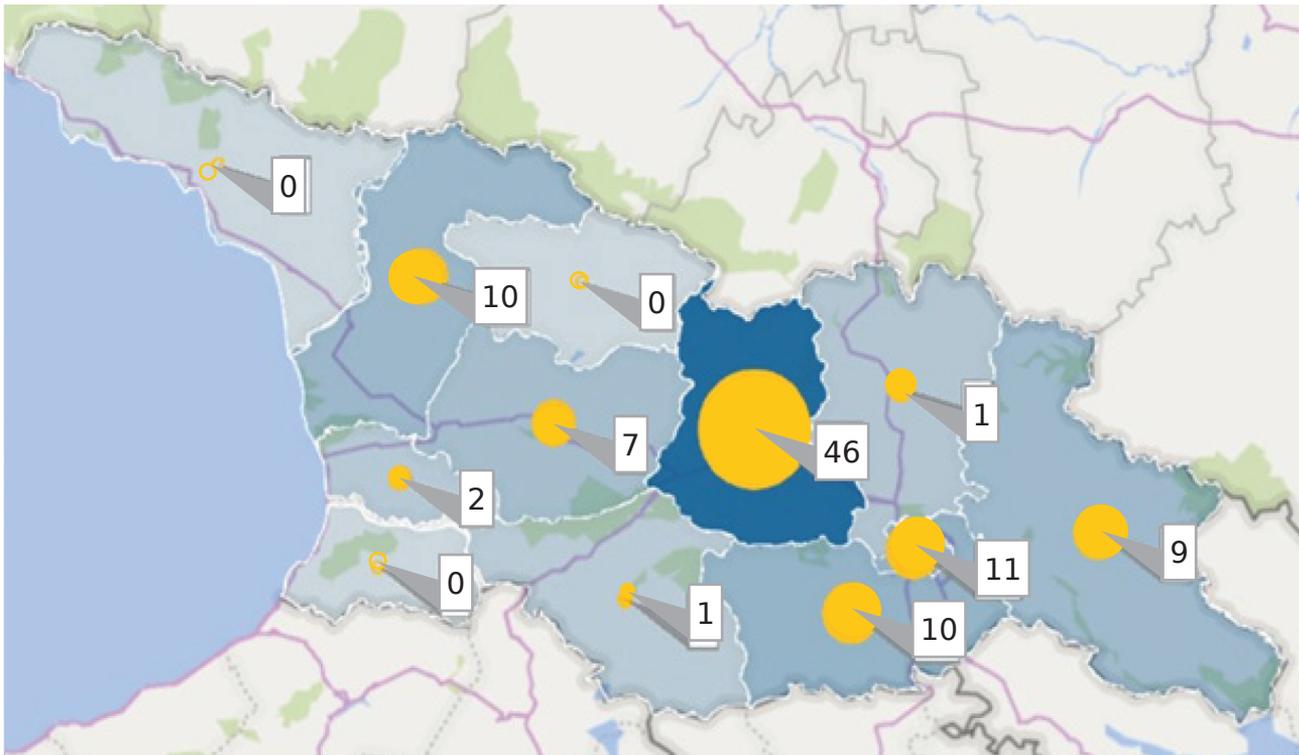
Source: Agricultural Cooperatives Development Agency

Cooperatives also benefit from tax breaks. Until 1 January 2023, cooperatives that grow primary agricultural products are exempt from property and dividend taxes. In addition, profits generated by members of the cooperative from the delivery of agricultural products and services in connection with the production of agricultural products for the cooperative, are exempt from corporate income tax.

It is noteworthy that according to the Ministry of Agriculture of Georgia, there are plans to merge three agencies within the Ministry. They include the Agricultural Cooperative Development Agency, along with the Agricultural Project Management Agency, and the Agency for Extension and Consulting Centers²⁵ (the activities of the last two agencies are discussed in the following chapters).

²⁵ Source: www.bm.ge

Graph 6: Refrigeration facilities, 2018



Source: National Statistics Office of Georgia

The **intermediary linkage** in the agricultural value chain (recipients, processing plants, and refrigeration farms) is very important, especially for perishable products. Studies show that in most municipalities there are no processing and refrigeration facilities. Accordingly, farmers try to sell the crop within a short timeframe and negotiate with resellers before harvesting (Khatisashvili and Katsia, 2019). For example, in Imereti, tomato growers try to sell tomatoes quickly at the peak of the season when the price is the lowest. Similar to Imereti, a lack of refrigeration facilities and product transportation are also problems in Kakheti. The blackberry has to be flash frozen (at minus 40 degrees Celsius) in order for it to be preserved for a prolonged period of time, which is not possible in Kakheti as of 2018. There are only a few flash freezers in Georgia. One of them is in the newly opened Glenbury Farm, which has refrigeration equipment in Agara, Kareli Municipality. The above-mentioned farm began selling berries (including blackberries) in July 2018 and, as the results of the study showed, products have already been exported to Turkey and Israel. This refrigeration facility can freeze 1,500 kg of berries in 1 hour, followed by the transfer of the berries to the refrigerators (at a temperature of minus 18-22 degrees Celsius, which can be stored for up to three years). The intermediary linkages also include processing and canning. For example, most of the non-standard mandarins are purchased by two large processing companies, at an average cost of 20 tetri per kilogram²⁶, out of which they pay 10 tetri after state subsidies. These plants process more than 11,000 tonnes of non-standard mandarins every season and export most of the concentrate produced (Kochlamazashvili and Saghareishvili, 2018).

²⁶ The data is based on a 2018 study by the People in Need and PMC Research Center, "Mandarin Value Chain Analysis." Tbilisi. http://www.pmcg-i.com/media/k2/attachments/VCA_Mandarin.pdf.

Studies have also shown that products are delivered to consumers by **retailers** or farmers themselves. In the case of tomatoes, for example, farmers themselves transport tomatoes to markets. Also, if there is a request, farmers sell their products directly to eateries, and sell them in markets.

Exporters are included in the value chain when the manufactured product is exported. Exporters create added value through the knowledge and experience they have in exporting products, thereby reducing the risks associated with exporting.

As mentioned above, a strong value chain is a key determinant of competitive advantage. Studies have shown that this chain in Georgia is still at an early stage of development, which is also reflected in weak linkages between the value chain. Consequently, intensive work on strengthening the value chain will be needed to increase the sector's export potential.

5.2 External Factors Affecting the Value Chain

5.2.1 Consulting and Information Centers

As mentioned above, one of the major challenges for the agricultural sector is low productivity, largely due to a lack of knowledge of modern technologies. Accordingly, progress in this area is particularly important for improving the situation in the sector. For this purpose, it is necessary to provide quality extension services to both small and large farms. To this end, the Ministry of Agriculture has set up an information-consulting service since 2013 in almost all municipalities in Georgia; a total of 54 information-consulting centers with up to 300 employees²⁷. The main function of extension centers is to provide farmers with free information on land cultivation, the care of different crops and animals, and the use of modern techniques and technology in the process. It is also their duty to inform citizens about the state programs and projects that support and encourage agriculture²⁸.

However, research has shown that although these centers provide stakeholders with information about ongoing support programs, the issue concerning the distribution of information on current matters regarding the crop and animal care remains a problem. The main reason for this is the lack of qualified personnel. In addition, plots/lots need to be added to demonstrate, and so farmers and peasants can clearly see, the results of using modern techniques. As a result, due to the lack of qualified agronomists, farmers mainly obtain information by sharing each others' experiences.

In response to these challenges, the State, with the support of donor organizations, has developed a strategy²⁹, aimed at the improvement of service delivery, including the launch of the pilot phase by the end of 2019.

²⁷ For more information on the location and contact information of the information advisory service, see the link: <http://mepa.gov.ge/Ge/Regions>

²⁸ "Annual Report 2017: Agriculture of Georgia."

²⁹ "Strategy for Agricultural Extension of Georgia"

5.2.2 Food Safety

Since the signing of the Deep and Comprehensive Free Trade Area (DCFTA) agreement, food safety issues have become pressing. This was primarily evident in the fact that the National Food Agency started to harmonize the Georgian legislation with EU legislation, which implies stricter control of both, the primary production and the processing sector (Gelashvili and Tvaliashvili, 2018). Consequently, it is expected that tightening of control will in turn lead to higher production costs.

It should be noted that the Deep and Comprehensive Free Trade Area agreement also implies compliance with the minimum requirements, among which, first of all, the requirements of origin should be satisfied - Georgian products must be wholly or partially produced in Georgia to be free from entry price into the EU market. The Certificate of Origin - EUR.1 (Preferential Origin Certificate) is issued by the Revenue Service of Georgia³⁰.

When considering exporting primary products to the EU for the first time, a phytosanitary certificate, having a fee of 25 GEL, is required for transportation. There is no other mandatory certificate regarding food safety for primary production, although buyers in European countries may request different types of documents. One of them is the analysis of heavy metal content, which is done locally in Georgia and costs 150-170 GEL (Khatishashvili and Gelashvili 2019). To export to the European market, it is also important to introduce production standards such as HACCP, ISO 22000 Global GAP. These standards are not essential, but they are a key to the European market and are important for producers and exporters who want to establish their products in the EU market.

To export, one of the important certificates is the GLOBALG.A.P certificate, which is usually issued during the harvesting period and is valid for 12 months. Initially, the cost of implementation of the standard for a farm is at least \$10,000. 50% of that money goes to services provided by a consulting company; the other 50% — directly to auditing and certification. If the farmer follows the recommendations of the consulting organization, the amount needed to obtain a certificate in the following year is almost halved (Khatishashvili, Saghareishvili and Basiladze 2019). The authority issuing this certificate is not located in Georgia. The closest one to Georgia is the Turkish office. However, there are consulting companies in Georgia that assist producers in implementing the standard. Such consulting companies are, for example, STAR Consulting³¹ and GDGI³² (Khatishashvili and Katsia 2019).

5.2.3 Associations

Exporters of agricultural products to the European Union and other markets may have significant support from the associations operating in Georgia. For example, the Export Development Association (EDA)³³ service covers all aspects of export development that a company may need. In particular, the EDA provides 15 types of services to exporters. These services include export readiness and an export potential audit, target market research, and potential partner selection, etc. The purpose of the association is to make it easier for the producer to overcome export barriers. However, the scale of exports from Georgia to the EU is still small, and in the light of future production growth, this linkage in the chain may become more important and valuable.

³⁰ See also: <https://www.rs.ge/5037>

³¹ <http://www.starconsulting.ge/>

³² <http://gdci-georgian.weebly.com/>

³³ Export Development Association (EDA), 2018, retrieved from: <http://eda.org.ka/>

In addition, the Georgian Farmers Association is worth mentioning³⁴. The Georgian Farmers Association was founded in late 2012. The organization currently brings together about 4,000 farmers throughout Georgia. In accordance with the mandate given by its member farmers, the Association serves as an intermediary between farmers and government authorities.

In addition, there are farm associations in Georgia. For example, in January 2017, the Georgian Berry Fruit Growers Association was established to serve the following goals:

- to introduce and promote berry production and processing;
- to lobby for agriculture friendly legislation;
- to protect consumer rights;
- to establish a qualified consultation service for farmers;
- to facilitate market development of berry products;
- to increase the production and quality of berry farms in Georgia, to certify and export them.

A sector-specific association can have many positive effects. It will support the development and advancement of the sector. Initially, donor organizations and the state may support the formation of such an association to strengthen this sector. The association can be the organizer of various trainings in the sector that will help raise awareness among farmers in different areas. It is also possible for the association to set up demonstration plots in several municipalities and promote agro technologies for proper care of products.

More information on associations operating in Georgia can be found in the table below (see Table 6).

Table 6: Associations

Name		Location	Name		Location
1.	Georgian Farmers Association (GFA)	Tbilisi/Regions	10.	Distributors Association	Tbilisi
2.	Georgian Chamber of Commerce and Industry	Tbilisi	11.	Georgian Laboratory Association	Tbilisi
3.	Berry Association	Imereti	12.	Export Development Association	Tbilisi
4.	Berry Growers' Association	Gurjaani	13.	Georgian Women Business Association	Tbilisi
5.	The Berry and Fruit Cultures Association	Zugdidi	14.	Georgan Logistics Association	Tbilisi
6.	The Biological Association Elkana	Tbilisi, Akhaltsikhe, Guria	15.	Agro Service Unification	Tbilisi

³⁴ See also: <https://gfa.org.ge/>

7.	Association of Georgian Organic Agricultural Producers of Georgia	Tbilisi	16	Georgian Hazelnut Growers' Association	Samegrelo
8.	Georgian Retailers Association	Tbilisi	17	Georgian Pistachio Association	Tbilisi
9.	Greens Growers Association	Kutaisi	18	Shepherds Association of Georgia	Tbilisi

5.2.4 Education and Dual Training

As mentioned above, education is crucial to productivity growth in the agricultural sector. The most relevant opportunity in this field is vocational education programs offered to the interested individuals in public and private schools. When studying at state-run educational institutions, the state offers full (100%) funding³⁵. According to the amendments made to the funding regulations, there is a possibility of obtaining funding while continuing education in private institutions. The state also funds the use of student accommodations in vocational education institutions in several municipalities. The minimum prerequisite for admission to a vocational education program is the basic level of general education (9th grade), however, depending on the type of program, full secondary education may be required. Program admissions are offered twice a year in the spring and fall. Registration can be obtained with the use of an ID card at educational resource centers operating in different cities of Georgia and state institutions implementing vocational education programs. Registration is also possible at www.vet.emis.ge³⁶.

From vocational education programs, the “Work Based (Dual) Learning” (SDS) project coordinated by the Georgian Farmers Association (GFA) with the involvement of the Ministry of Education, Science, Culture and Sport of Georgia, and the support of donor organizations (UNDP, Swiss Agency for Development and Cooperation), is worth mentioning separately. The program is implemented in the fields of stockbreeding, fruit growing, beekeeping, meat processing, fisheries, and veterinary science and involves seven regions of Georgia - Samegrelo, Kakheti, Samtskhe-Javakheti, Adjara, Racha-Lechkhumi Kvemo Svaneti, Shida Kartli, and Mtskheta-Mtianeti. The following vocational education institutions are involved in the project: Ilia Tsinamdzgvrishvili Community College (Mtskheta/ Tsinamdzgvriantkari), Community College “Aisi” (Kachreti/Kachreti, Alvani, Dedoplistskaro), Shota Meskhia State Teaching University of Zugdidi (Samegrelo/ Senaki/Zugdidi), Vocational College “Eravani” (Racha-Lechkhumi/Ambrolauri), Community College “Akhali Talgha” (Adjara/Kobuleti), Vocational College “Gantiadi” (Shida Kartli/Gori), and Community College “Opizari” (Akhaltzikhe).

³⁵ Resolution No. 667 on the amendments to the Resolution No 244 of 19 September 2013 of the Government of Georgia “On the Determination of Terms and Conditions of Vocational Education Financing and Approval of the Maximum Tuition Fee in State-run Educational Institutions Implementing Vocational Education Programs”

³⁶ For more information you can call the hotline of the Ministry of Education, Science, Culture and Sport of Georgia 032 2 200 220 or visit the web site www.mes.gov.ge, www.vet.ge

The project is particularly interesting because it combines theoretical training and practical experience. The trainee receives theoretical knowledge 2 days a week, and uses this knowledge for 3 days in practice at the program partner farm or other business establishments. As with other programs, tuition within the program is free of charge and, along with other benefits, also compensates the trainee for the undertaken work³⁷.

5.2.5 Financial Institutions and Access to Finance

In Georgia, commercial banks and microfinance organizations are the main source of finance for the agricultural sector. These organizations offer value chain participants loans as well as various banking services, opening checking and saving accounts. As of May 2019, the sector is represented by 15 banks, 58 microfinance organizations, and 17 insurance companies. The branches and service centers of commercial banks, microfinance, and insurance companies operate in all self-governing units of Georgia.

As for interest rates, they are quite high on credits and loans, though it is characterized by a downward trend. Among the banking products, the highest interest rates still remain on consumer loans. As of December 2018, the interest rate on consumer loans oscillates around 20%, while the average interest rate on loans granted for agricultural purposes in 2018 is around 10%. It should be noted that in individual cases the interest rates can be much higher, even approaching the 50% threshold of effective annual interest rate set by the law.

Although there are numerous financial institutions in the country, the lack of access to credit by farmers is often perceived as one of the major impediments to the development of their activities (Kochlamazashvili and Saghareishvili 2018). In this regard, the Agricultural and Rural Development Agency implements various programs. For example, the “Preferential Agrocredit Project” is considered to be one of the inexpensive sources of credit that many farmers apply for. This program works particularly well for large farms, while small farms (for example, citrus fruit growers) find it difficult to get a loan through this program, as they are often asked to underwrite a loan with a highly liquid asset required by banks. As a result, access to funding for small and medium farms remains one of the major challenges.

5.2.6 Insurance Companies

Although the financial sector in Georgia is well developed, the market for agricultural insurance is small. Consequently, with the State’s efforts, the Agro-Insurance Program was launched on 1 September 2014, with the aim of developing the insurance market in the agro sector, promoting agricultural activities, helping those involved remain profitable, and reducing risks.

The program is implemented by the N(N)LE Agricultural Projects Management Agency of the United Nations within the framework of the United Agro Project. In order to implement the program, the Agency enters into contracts with the relevant licensed insurance companies in accordance with the legislation of Georgia; on the basis of said agreements, insurance premiums are subsidized and monitored.

³⁷ For more information see the video: <https://www.youtube.com/watch?v=mRv4YVBOTSU>

Interested beneficiaries can purchase insurance policies from 8 insurance companies operating in Georgia:

- Aldagi
- GPI Holding
- Euroins Insurance Company
- Ardi
- Alfa
- TBC Insurance
- Insurance Group of Georgia
- Global Benefits Georgia

Under said program, the insurance policy covers the following insurance risks:

- Hail
- Floods
- Storms
- Fall Freeze (for citrus crops only) - from 1 September to 30 November

Under the 2019 Agro Insurance Program, the beneficiary can insure up to 5 hectares of land, and in the case of cereal crops up to 30 hectares (this restriction does not apply to agricultural cooperatives). Each insurer will receive 70% co-financing for all crops covered by the program, and 50% for grapevines (in the case of an agricultural cooperative, the premium paid by the agency to an insurer or insured party should not exceed GEL 50,000). Also, the insurer can insure both cereal crops and other crops simultaneously. The program will set a fixed insurance tariff.

The insurer and/or the owner of the land on which the insured object is located must be registered with the Agricultural Project Management Agency under the “Farm Registration Project”.

5.2.7 State Institutions

Agricultural value chain support programs are implemented with the assistance of several state agencies. It is noteworthy that to support the development of Georgia’s agriculture, the N(N)LE Agricultural Projects Management Agency was established in 2012, the main function of which is to support the development of Georgia’s agriculture. One of the ongoing projects is “United Agricultural Project”, implemented by the state within the project “Enterprise Georgia - Business”. By increasing agricultural entrepreneurs’ access to finances, the project aims to promote long-term, sustainable development of agriculture and the creation of a business environment, which provides a quantitative increase in goods produced in Georgia, competitive, high-quality production, a high level of food security, and export growth. The table briefly summarizes the current projects of the agency and the links between these projects and the internal value chain linkages.

Table 7: List of ongoing project³⁸

Name	Description of the program	Internal linkages of the value chain
Plant the Future	The program aims to support the efficient use of existing agricultural land and support production of local planting materials (seedlings), that will replace imports and increase export potential.	Raw material suppliers/ farmers/family farms/ cooperatives
Program of Agro-production Promotion	The program aims to support product quality and productivity increase (component of primary production), to expand processing and storing (warehousing) agro-enterprises, and introduce modern technologies (component of processing and preserving enterprises).	Farmers/family farms/sorting and refrigeration facilities
Preferential Agrocredit	The purpose of the project is to promote the processes of primary agricultural production, processing, storage, and sale by providing the legal and natural entities with low interest and affordable loans.	Farmers/family farms/ cooperatives /intermediary linkages (sorting facilities, processing plants, and refrigeration facilities)
Co-financing of Agro Processing and Storage Enterprises	The project aims to support the establishment and expansion of storage and processing enterprises in the agricultural sector. Under the program, co-financing of storage and processing enterprises can be achieved in three ways — the agency co-financing, preferential credit/leasing, or the beneficiary’s own participation.	Sorting, processing, and refrigeration facilities.
Agroinsurance	The program aims to develop the insurance market in the agricultural sector, which will help to retain income for the farms and reduce risks.	Farmers/family farms/ cooperatives
Farmer Registration Project	The project envisages the establishment of a united registry of farms/farmers, which will consolidate information on agricultural assets and their owners in a united electronic database.	Farmers/family farm/ cooperatives

³⁸ More information on current projects is available at the following link: <http://apma.ge/projects>

5.2.8 Donor Organizations

In addition to state programs, support for the agricultural value chain is provided by international organizations and donors. A few ongoing programs are worth noting. These include the ENPARD III Agreement “European Neighborhood Program for Agriculture and Rural Development”, signed in 2017. ENPARD III involves the mobilization of an additional €77.5 million to support rural development initiatives. The main objective of the program is the improved competitiveness of the agricultural sector and rural development.

Furthermore, in 2016, a Memorandum of Understanding between the Ministry of Agriculture and the US Agency for International Development (USAID) project “ZRDA” was signed, which focuses on the development of small and medium-sized farms, job creation, and income growth in rural areas. This is a five-year program with a budget of approximately \$15 million. Moreover, several projects are being implemented with the financial support of the Austrian Development Agency (ADA) and the Swiss Development Agency (SDC), including a project for the introduction of animal identification, registration, and traceability systems with a budget of \$5.5 million.

Besides the above mentioned projects, since 2012, the following international organizations have been implementing a number of projects to support the development of the agricultural sector:

- The Food and Agriculture Organization of the United Nations (UN FAO)
- The Comprehensive Institution Building (CIB) Programme
- Japan International Cooperation Agency (JICA)
- Care International, Mercy Corps, People in Need, OXFAM GB
- German Federal Enterprise for International Cooperation (GIZ)
- German Development Bank (KfW).

It should also be noted that different donor organizations operate in different regions. For instance, the Alliances Caucasus Programme, which is being implemented in the Kvemo Kartli region by Mercy Corps, funded by the Swiss Agency for Development and Cooperation (SDC) (Gelashvili and Tvaliashvili 2018). In addition to donor organizations, local NGOs are noteworthy. In Adjara, for example, such organizations are actively involved in the development of the mandarin sector. In this respect, the Biological Farms Association “Elkana” and the “Black Sea Eco Academy”, which carry out trainings for mandarin-producing farmers in various fields, are noteworthy.

5.2.9 Transport

Transport is one of the last linkages of the agricultural value chain. The following key issues should be taken into consideration when transporting agricultural products:

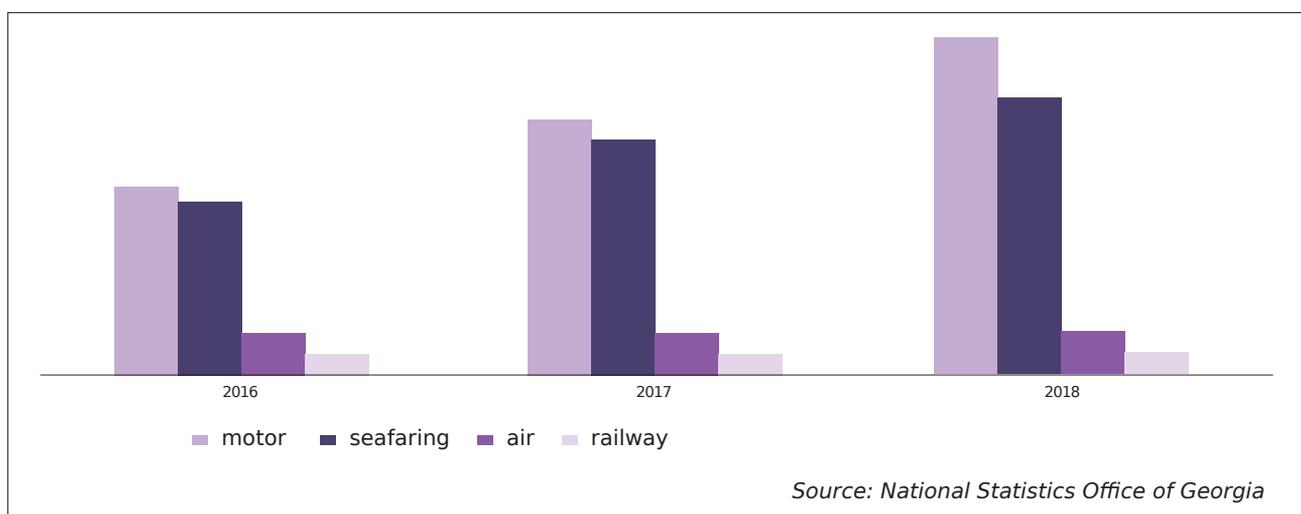
- Most agricultural products require the use of special containers or refrigerator trucks when transporting, with appropriate temperature controlling mechanisms. This type of service typically increases transportation costs by around 20%-40%.

- Exports require the collection of relevant documents that may depend on the specific characteristics of the export market.
- Cargo transportation insurance is an important component to avoid risks associated with transportation. The price and terms of insurance vary depending on the type of cargo, choice of transport vehicles, insurance company policies, and countries.

The cost of shipping cargo from Georgia to Europe by specialized containers varies between around 4,000-5,000 euros. Additionally, insurance costs should be taken into account, which are usually 0.2% -0.35% of the total indicated in the invoice. An additional difficulty for shipping is that the chance of freight being delayed by customs is higher when transporting agricultural products than in any other case. The delay is accompanied by additional costs (150 euros per additional day spent on customs).

In general, cargo is transported from Georgia by road, as well as by sea, air, and rail. The chart below shows that road freight is the most common mode of transportation, followed by sea, air, and rail, respectively. When determining the type of transport, the features and risks inherent to the process need to be considered. For example, ferry shipments to Europe are delayed during a storm in the Black Sea. Also due to deteriorating weather conditions, the Lars customs checkpoint is often closed in winter.

Graph 7: Export of Georgia by types of transportation



6. SWOT ANALYSIS OF THE AGRICULTURAL SECTOR

Strengths	<ul style="list-style-type: none"> • Soil-climatic conditions of the country • Government and donor support
Weaknesses	<ul style="list-style-type: none"> • Low productivity • Unstable markets • Lack of experience in exporting products • Access to certificates • Lack of adequate knowledge of modern crop treatment/care technologies • Lack of finance • Weak logistics network • Fragmentation of land • Problems with land registration • Weak linkages within the value chain • Access to quality raw materials • Low capacity drainage and irrigation systems
Opportunities	<ul style="list-style-type: none"> • Increasing productivity • Existence of preferential trading regimes/schemes with potential markets • Increasing tourism in the country • Replacing imports • Introducing modern techniques and technologies • Resolving land registration problems and supporting consolidation • Supporting peasant / farmer education programs • Inculcating interest among the younger generations • Inexpensive resources
Threats	<ul style="list-style-type: none"> • Natural disasters • Spread of diseases and pests

7. RECOMMENDATIONS

- Performing soil analysis prior to production
- Applying knowledge of modern harvesting technologies
- Active involvement in educational programs and implementation of recommendations received
- Land registration
- Land clearing
- Purposeful use of pesticides
- Conforming to sanitary and phytosanitary norms
- Growing specific, high-quality products
- Getting a certificate of compliance with standards issued
- Choosing the right loan product (e.g. taking out agricultural or business loans instead of the consumer loans)
- Using donor-funded low-interest targeted loan products from financial institutions (e.g. for female entrepreneurs)
- Use of government-sponsored special support programs, including benefits for cooperatives
- Active use of state insurance support program
- Obtaining targeted grants from donor organizations
- Taking training courses offered by donor organizations
- Compliance with the appropriate standards of transportation for agricultural products
- Acquiring the relevant documentation for transportation

CONCLUSION

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This study, which is based on the analysis of 7 selected products in 7 regions of Georgia in the 2017-18 period, highlights the key issues related to the competitiveness of Georgia's agricultural sector. Specifically, the challenges facing the sector and its export potential, the agricultural value chain and the internal and external factors affecting it.

The results of the study show that despite the factors contributing to the development of agriculture in Georgia (climate-soil conditions; increasing government spending on agriculture; international donor support programs), the sector faces serious challenges. These may include low productivity, weak agricultural value chains, high fragmentation of land, problems with land registration, low quality of raw materials, and lack of relevant knowledge, scarcity of processing and refrigeration facilities, and limited access to finance.

As for the export potential, despite the fact that exports from Georgia in the last 15 years are characterized by growth and that exports of products made in Georgia enjoy many benefits under different agreements (for example, as a member of the World Trade Organization, the benefits apply to trade with other member countries of the organization. In addition, Georgia has a free trade agreement with CIS countries, China, and Turkey; the GSP agreement with the US, Switzerland, Norway, Canada, Japan and the so-called "GSP+ 2", with EU countries, and most importantly, the DCFTA agreement with the EU), the country remains in the process of searching for stable trade partners and profitable export products.

The results of the study show that if there is interest on the part of farmers, it is possible to acquire knowledge about modern harvesting technologies and to put into practice the recommendations received through active involvement in educational programs. Also, it is possible to increase access to finance by selecting the right loan product (e.g. borrowing agricultural or business loans instead of consumer loans) and by taking advantage of donor-funded low-cost targeted loan products from financial institutions (e.g. for female entrepreneurs). Taking all of this into account, despite the challenges listed above, as a matter of fact, the country has the potential to improve its present condition.

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